

**REGULATION 13  
PERMIT MODIFICATION APPLICATION  
HUNTINGTON FACILITY**

**REDACTED APPLICATION**

*Prepared for:*

**Rubberlite, Incorporated**  
2501 Guyan Avenue  
Huntington, West Virginia 25703

*Prepared by:*

**Potesta & Associates, Inc.**  
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Project No. 0101-15-0160

September 2015

**POTESTA**

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**SECTION I-III**  
**APPLICATION FOR NSR PERMIT**



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**DIVISION OF AIR QUALITY**

601 57<sup>th</sup> Street, SE  
 Charleston, WV 25304  
 (304) 926-0475  
[www.dep.wv.gov/daq](http://www.dep.wv.gov/daq)

**APPLICATION FOR NSR PERMIT  
 AND  
 TITLE V PERMIT REVISION  
 (OPTIONAL)**

PLEASE CHECK ALL THAT APPLY TO NSR (45CSR13) (IF KNOWN):

- CONSTRUCTION     MODIFICATION     RELOCATION  
 CLASS I ADMINISTRATIVE UPDATE     TEMPORARY  
 CLASS II ADMINISTRATIVE UPDATE     AFTER-THE-FACT

PLEASE CHECK TYPE OF 45CSR30 (TITLE V) REVISION (IF ANY):

- ADMINISTRATIVE AMENDMENT     MINOR MODIFICATION  
 SIGNIFICANT MODIFICATION

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS ATTACHMENT S TO THIS APPLICATION

**FOR TITLE V FACILITIES ONLY:** Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

**Section I. General**

1. Name of applicant (as registered with the WV Secretary of State's Office): Rubberlite, Incorporated		2. Federal Employer ID No. (FEIN): 31-1180431	
3. Name of facility (if different from above): Huntington Facility		4. The applicant is the: <input type="checkbox"/> OWNER <input type="checkbox"/> OPERATOR <input checked="" type="checkbox"/> BOTH	
5A. Applicant's mailing address: 2501 Guyan Avenue Huntington, West Virginia 25703		5B. Facility's present physical address: Same	
6. <b>West Virginia Business Registration.</b> Is the applicant a resident of the State of West Virginia? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO ⇒ If YES, provide a copy of the <b>Certificate of Incorporation/Organization/Limited Partnership</b> (one page) including any name change amendments or other Business Registration Certificate as <b>Attachment A</b> . ⇒ If NO, provide a copy of the <b>Certificate of Authority/Authority of L.L.C./Registration</b> (one page) including any name change amendments or other Business Certificate as <b>Attachment A</b> .			
7. If applicant is a subsidiary corporation, please provide the name of parent corporation: Bluescape Resources Company, LLC			
8. Does the applicant own, lease, have an option to buy or otherwise have control of the <i>proposed site</i> ? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO ⇒ If YES, please explain:        Applicant owns the site. ⇒ If NO, you are not eligible for a permit for this source.			
9. Type of plant or facility (stationary source) to be constructed, modified, relocated, administratively updated or temporarily permitted (e.g., coal preparation plant, primary crusher, etc.): Foam Production and Fabrication Facility		10. North American Industry Classification System (NAICS) code for the facility: 326291	
11A. DAQ Plant ID No. (for existing facilities only): 11-00174		11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only): R13-2948A	

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- ⇒ For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- ⇒ For **Construction** or **Relocation permits**, please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP** as **Attachment B**.

From I-64 West take Exit 15 toward Huntington to U.S. 60. Left turn on Third Avenue, right onto 25<sup>th</sup> Street then left onto Guyan Avenue.

12.B. New site address (if applicable):	12C. Nearest city or town: Huntington	12D. County: Cabell
12.E. UTM Northing (KM): 376.625	12F. UTM Easting (KM): 4,254.55754	12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:  
Modification for additional equipment and permit flexibility.

14A. Provide the date of anticipated installation or change: 1/1/2016 ⇒ If this is an <b>After-The-Fact</b> permit application, provide the date upon which the proposed change did happen:	14B. Date of anticipated Start-Up if a permit is granted: 11/1/2016
--	--

14C. Provide a **Schedule** of the planned **Installation of/Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:  
Hours Per Day 24      Days Per Week 7      Weeks Per Year 52

16. Is demolition or physical renovation at an existing facility involved?     YES     NO

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see [www.epa.gov/ceppo](http://www.epa.gov/ceppo)), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process (*if known*). A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance (*if known*). Provide this information as **Attachment D**.

### **Section II. Additional attachments and supporting documents.**

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to **Plot Plan Guidance**).

⇒ Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F**.

23. Provide a **Process Description** as **Attachment G**.

⇒ Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

**All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.**

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H**.

⇒ For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I**.

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J**.

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K**.

28. Check all applicable **Emissions Unit Data Sheets** listed below:

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Bulk Liquid Transfer Operations | <input checked="" type="checkbox"/> Haul Road Emissions | <input type="checkbox"/> Quarry  |
| <input type="checkbox"/> Chemical Processes              | <input type="checkbox"/> Hot Mix Asphalt Plant          | <input type="checkbox"/> Solid Materials Sizing, Handling and Storage Facilities |
| <input type="checkbox"/> Concrete Batch Plant            | <input type="checkbox"/> Incinerator                    | <input type="checkbox"/> Storage Tanks   |
| <input type="checkbox"/> Grey Iron and Steel Foundry     | <input type="checkbox"/> Indirect Heat Exchanger        |  |
- General Emission Unit, specify: Foam Production Units, Fabrication (including cutting, buffing, and lamination), roll coaters parts cleaning, etc. (See Attachment L)

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L**.

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Absorption Systems | <input checked="" type="checkbox"/> Baghouse        | <input type="checkbox"/> Flare                                     |
| <input type="checkbox"/> Adsorption Systems | <input type="checkbox"/> Condenser                  | <input checked="" type="checkbox"/> Mechanical Collector (Cyclone) |
| <input type="checkbox"/> Afterburner        | <input type="checkbox"/> Electrostatic Precipitator | <input type="checkbox"/> Wet Collecting System                     |
- Other Collectors, specify

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M**.

30. Provide all **Supporting Emissions Calculations** as **Attachment N**, or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O**.

- Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and **Example Legal Advertisement** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

YES       NO

- If YES, identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's "**Precautionary Notice - Claims of Confidentiality**" guidance found in the **General Instructions** as **Attachment Q**.

### **Section III. Certification of Information**

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

- |  |   |
|--|---|
| <input type="checkbox"/> Authority of Corporation or Other Business Entity | <input type="checkbox"/> Authority of Partnership         |
| <input type="checkbox"/> Authority of Governmental Agency                  | <input type="checkbox"/> Authority of Limited Partnership |

Submit completed and signed **Authority Form** as **Attachment R**.

**All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.**

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

**Certification of Truth, Accuracy, and Completeness**

I, the undersigned  **Responsible Official** /  **Authorized Representative**, hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

**Compliance Certification**

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE

*Jeffrey D. Goad*  
(Please use blue ink)

DATE:

*September 10, 2015*  
(Please use blue ink)

35B. Printed name of signee: Jeffrey D. Goad

35C. Title: Vice President of Technology

35D. E-mail: jgoad@rubberlite.com

35E. Phone: (304) 525-3166

35F. FAX: (304) 697-2167

36A. Printed name of contact person (if different from above): Corbet Dowdy

36B. Title: Safety & Environmental Manager

36C. E-mail: cdowdy@rubberlite.com

36D. Phone: (304) 525-3116

36E. FAX: (304) 697-2167

**PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:**

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Attachment A: Business Certificate               | <input checked="" type="checkbox"/> Attachment K: Fugitive Emissions Data Summary Sheet            |
| <input checked="" type="checkbox"/> Attachment B: Map(s)                             | <input checked="" type="checkbox"/> Attachment L: Emissions Unit Data Sheet(s)                     |
| <input checked="" type="checkbox"/> Attachment C: Installation and Start Up Schedule | <input checked="" type="checkbox"/> Attachment M: Air Pollution Control Device Sheet(s)            |
| <input checked="" type="checkbox"/> Attachment D: Regulatory Discussion              | <input checked="" type="checkbox"/> Attachment N: Supporting Emissions Calculations                |
| <input checked="" type="checkbox"/> Attachment E: Plot Plan                          | <input checked="" type="checkbox"/> Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans |
| <input checked="" type="checkbox"/> Attachment F: Detailed Process Flow Diagram(s)   | <input checked="" type="checkbox"/> Attachment P: Public Notice                                    |
| <input checked="" type="checkbox"/> Attachment G: Process Description                | <input checked="" type="checkbox"/> Attachment Q: Business Confidential Claims                     |
| <input checked="" type="checkbox"/> Attachment H: Material Safety Data Sheets (MSDS) | <input type="checkbox"/> Attachment R: Authority Forms   |
| <input checked="" type="checkbox"/> Attachment I: Emission Units Table               | <input type="checkbox"/> Attachment S: Title V Permit Revision Information                         |
| <input checked="" type="checkbox"/> Attachment J: Emission Points Data Summary Sheet | <input checked="" type="checkbox"/> Application Fee  |

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

**FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:**

- Forward 1 copy of the application to the Title V Permitting Group and:
- For Title V Administrative Amendments:
  - NSR permit writer should notify Title V permit writer of draft permit,
- For Title V Minor Modifications:
  - Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,
  - NSR permit writer should notify Title V permit writer of draft permit.
- For Title V Significant Modifications processed in parallel with NSR Permit revision:
  - NSR permit writer should notify a Title V permit writer of draft permit,
  - Public notice should reference both 45CSR13 and Title V permits,
  - EPA has 45 day review period of a draft permit.

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

**ATTACHMENT A**  
**BUSINESS CERTIFICATE**

**WEST VIRGINIA  
STATE TAX DEPARTMENT  
BUSINESS REGISTRATION  
CERTIFICATE**

ISSUED TO:  
**RUBBERLITE INC  
2501 GUYAN AVE  
HUNTINGTON, WV 25703-1236**

BUSINESS REGISTRATION ACCOUNT NUMBER: **1025-4727**

This certificate is issued on: **06/10/2010**

*This certificate is issued by  
the West Virginia State Tax Commissioner  
in accordance with W.Va. Code § 11-12.*

*The person or organization identified on this certificate is registered  
to conduct business in the State of West Virginia at the location above.*

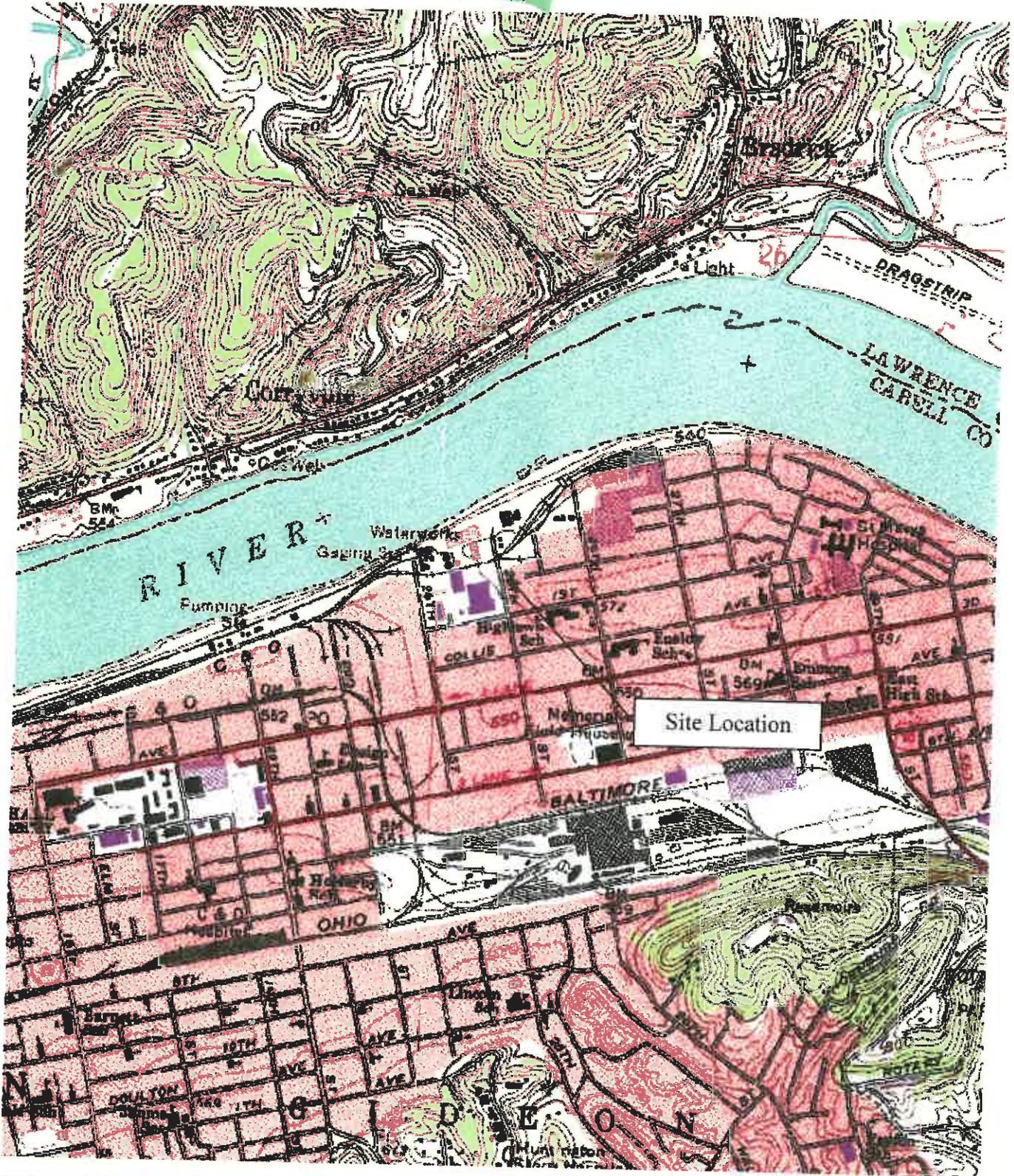
**This certificate is not transferrable and must be displayed at the location for which issued.**

**This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.**

**Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.**

**TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them.  
CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of  
this certificate displayed at every job site within West Virginia.**

**ATTACHMENT B**  
**SITE LOCATION MAP**



**POTESTA**  
Engineering and Environmental Consultants  
7012 MacCorkle Avenue, SE  
Charleston, West Virginia 25304  
Phone: (304) 342-1400  
Fax: (304) 343-9031

**Area Map**  
**Rubberlite, Incorporated**  
Huntington Facility  
Huntington, West Virginia

**ATTACHMENT C**  
**INSTALLATION/STARTUP SCHEDULE**

## **ATTACHMENT C**

### **SCHEDULE OF INSTALLATION**

This is an existing facility which is adding new equipment. The proposed equipment will be installed over several years and the actual installation date depends on business development and market conditions.

Initially, a new roll coater is planned to be installed in January 2016. Afterward, installation of the equipment will occur as needed to meet production demands. We will inform the Division of Air Quality when we are installing new equipment which is requested in this permit. The initial plan is that all of the proposed equipment will be installed within 5 years; therefore, we have placed an installation date in the application for the remaining equipment of 2016 - 2020.

**ATTACHMENT D**  
**REGULATORY DISCUSSION**

## ATTACHMENT D

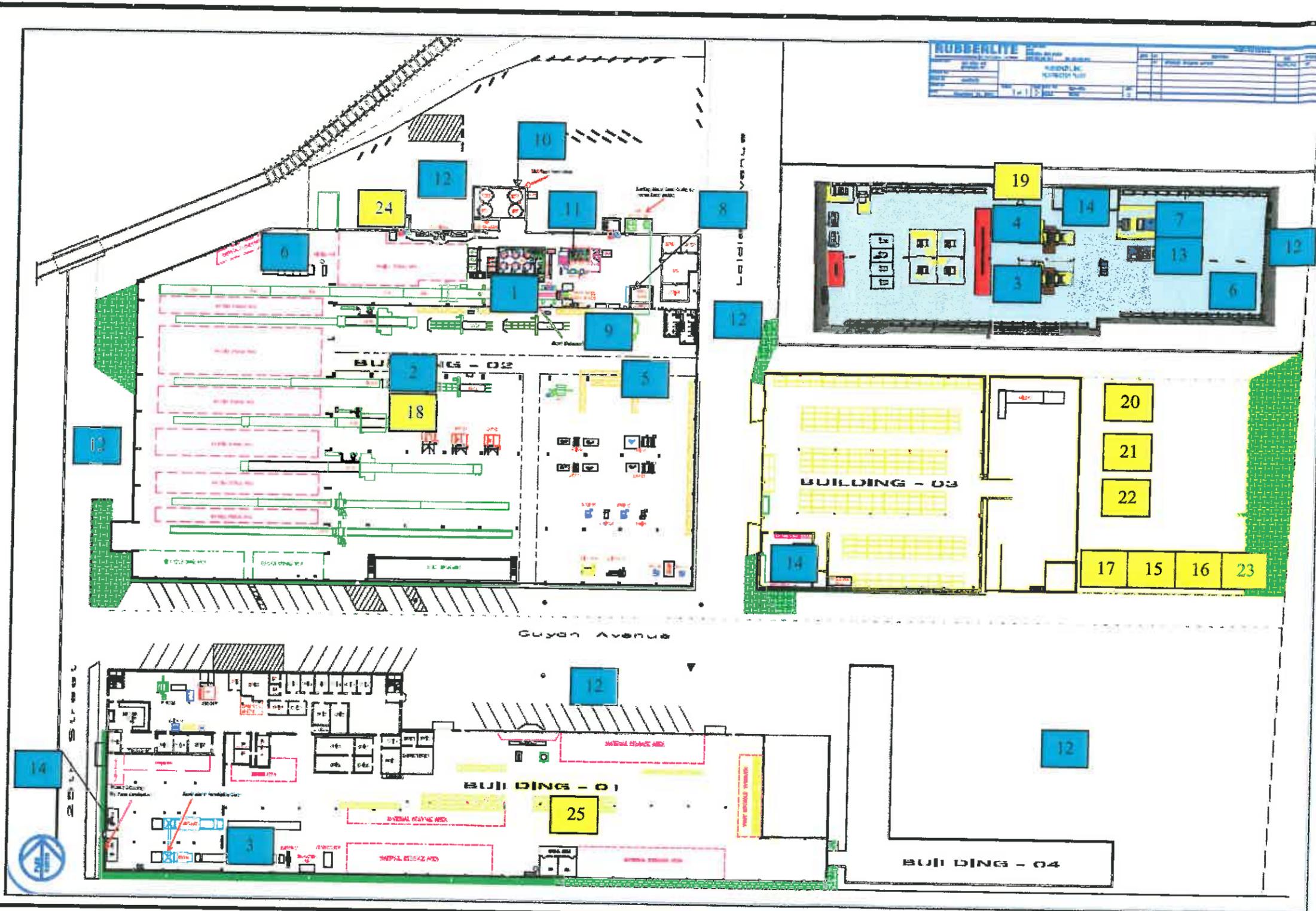
### REGULATORY DISCUSSION

The majority of the permit revisions requested in this application does not change the applicable regulatory requirements. The proposed equipment is similar equipment to existing equipment and the regulatory basis for the equipment is already stated in the permit.

The one piece of equipment that does affect regulatory requirements is the emergency generator. The emergency generator is subject to 40CFR60, Subpart III, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. With the applicability of this rule, the facility becomes subject to Title V under West Virginia's (WV) Regulation 45CSR30, *Requirements for Operating Permits*. However, with emissions below major source, the facility will be a deferred source under Title V and not required to obtain a Title V permit. Additionally, the site will transfer from paying fees under WV Regulation 22, *Air Quality Management Fee Program* and will pay operating fees based on actual annual emissions under Regulation 30 via a Certified Emissions Statement Invoice.

**ATTACHMENT E**

**PLOT PLAN**



**Source Description**

1. Foam Production Unit No. 1 (1S,1E)
2. Bun Press No. 1 (2S,2E)
3. Hot Melt Laminator No. 1 (3S,3E)
4. Hot Melt Laminator No. 2 (4S,4E)
5. Buffer (5S,5E)
6. Misting Unit (6S,6E)
7. Roll Coater No. 1 with NG Oven (7S,7E)
8. Solvent Cleaning (8S,8E)
9. Lab Foam Production R&D (9S,9E)
10. ISO Tanks (10S,10E)
11. Glycol Tanks (11S,11E)
12. Vehicle Activity (12S,12E)
13. Roll Coater No. 2 with IR Oven (13S,13E)
14. Solvent Cleaning Station (14S,14E)
15. Foam Production Unit No. 2 (15S, 15E)
16. ISO Tanks (16S, 16E)
17. Glycol Tanks (17S, 17E)
18. Bun Press No. 2 (18S, 18E)
19. Hot Melt Laminator No. 3 (19S, 19E)
20. Roll Coater No. 3 with NG Oven (20S, 20E)
21. Roll Coater No. 4 with NG Oven (21S, 21E)
22. Roll Coater No. 5 with NG Oven (22S, 22E)
23. Solvent Cleaning Station (23S, 23E)
24. Emergency Generator No. 1 (24S, 24E)
25. Flame Laminator No. 1 (25S, 25E)

**Legend**

- Location
- Proposed Location



7012 MacCorkle Avenue, S.E  
 Charleston, West Virginia 25304  
 Phone: (304) 342-1400  
 Fax: (304) 343-9031

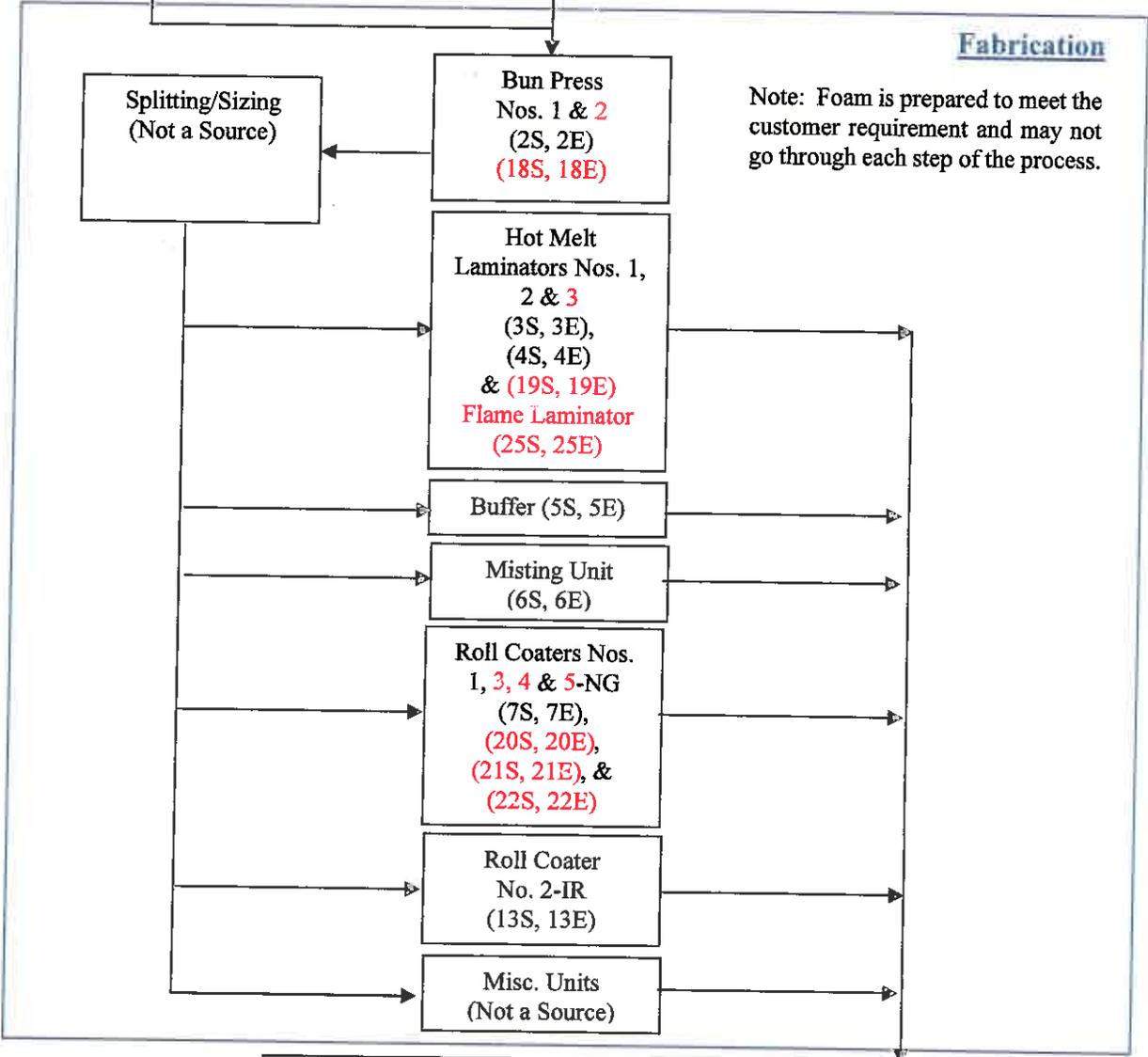
**Huntington Facility**  
**Rubberlite, Incorporated**  
 Huntington, West Virginia  
 Project No. 0101-15-0160

**ATTACHMENT F**  
**PROCESS FLOW DIAGRAM**

Foam Delivery, Raw Materials  
Delivery from Others  
Vehicle Activity (12S, 12E)

**Foam Production  
Unit No. 1**  
(1S, 1E) Including  
ISO Tanks (10S, 10E)  
and Glycol Tanks (11S,  
11E)

**Foam Production  
Unit No. 2**  
(15S, 15E) Including  
ISO Tanks (16S, 16E)  
and Glycol Tanks  
(17S, 17E)



Lab Production  
Unit  
(9S, 9E)

Solvent Cleaning Stations  
(8S, 8E) (14S, 14E) & (23S, 23E)

Emergency Generator No. 1  
(24S, 24E)



7012 MacCorkle Avenue, S.E.  
Charleston, West Virginia 25304  
Phone: (304) 342-1400  
Fax: (304) 343-9031

**Huntington Facility**  
Rubberlite, Incorporated  
Cabell County, West Virginia  
Project No. 0101-15-0160

**ATTACHMENT G**  
**PROCESS DESCRIPTION**

## Attachment G

### Process Description

Rubberlite, Incorporated (Rubberlite) produces foam and then fabricates laminates and other foam products from their foam and foam that is purchased from other sources. The facility is contained in five (5) buildings which are either categorized as production or fabrication. Production is the actual foam-making equipment at the site. This includes the chemical storage tanks, day tanks, mix tanks, the mix-pour head and the conveyor which the material is poured onto to form the bun. There is one existing production line and one proposed production line. The fabrication at the facility is basically everything else which is developed to take the bun (or delivered buns) and process them into the required finished goods.

Fabrication includes the Bun Presses, Hot Melt Laminators, Flame Laminator, Buffer, Misting Unit, and Roll Coater. There are splitters and other equipment used at the site in the fabrication process which are not listed as emission sources. This equipment is listed in the attached table "Miscellaneous Fabrication Equipment".

Additional sources include Solvent Cleaning (Parts Cleaners), a Lab Production Unit, an Emergency Generator, and Vehicle Activity for delivery and shipping.

Each of the above sources is discussed in further detail below.

#### Foam Production Unit No. 1 (1S, 10S, & 11S) and No. 2 (15S, 16S, & 17S)

Rubberlite uses a two-component system consisting of Part A-Isocyanate (ISO) and Part B-Polyol Resin. The two-part system is pumped into a specially designed mixing head that combines the two-components to react to form polyurethane foam that is poured onto a lined conveyor. The formulated ratio of isocyanate content to polyol resin is specific to meet customers' specifications. No auxiliary blowing agents (ABAs) are used as the process uses water as the blowing agent. This facility does not use toluene diisocyanate (TDI).

Methylene diphenyl diisocyanate (MDI)/polymeric methylene diphenyl diisocyanate (PMDI) is received by tank car and off-loaded into two 7,000-gallon storage tanks. MDI/PMDI is also received in 275 gallon totes and 55 gallon drums and off loaded into three (3) 800 gallon and one (1) 150 gallon day tanks. All tanks are located inside the manufacturing building and are maintained at a constant temperature. ISO tanks are vented to the outside when pumping/filling; however, all other tanks are vented inside the building during such instances. See Process Map for the design and layout of the foam manufacturing process.

Material is pumped into 7,000 gallon bulk storage tanks from tanker trucks (2 Polyol & 2 ISO tanks). Based on typical demands, these tanks are filled once per month.

Material is pumped out of bulk storage tanks using diaphragm pumps into 800 gallon day tanks (3-Polyol & 3-ISO) as well as a 150 gallon Poly Lab tank. Material is also pumped from totes into daily batch tanks (Polyol, ISO, EG) and from drums (additives, surfactants, catalysts).

Poly batch chemicals (i.e., catalysts, surfactants, chain extenders, etc.) are batched and mixed overnight. No batching is performed on ISO tanks. Batched chemicals, ISO, and pigments are pumped separately into the mix head, which blends them together at the conveyor.

Material is poured onto a liner, which is conveyed on an open conveyor. Material rises to maximum peak heights at approximately 10-15 feet and is cut into 100-foot master rolls (buns) using an automated cut-off saw. Once cut, the roll continues to be conveyed and is transported to staging areas using an overhead vacuum crane. Master rolls (buns) are allowed to cure for at least 24 hours prior to skiving (slicing). From this point on the foam is in the Fabrication Area for forming the final products.

The existing production unit is Foam Production Unit No. 1 (1S) which is the entire production unit with the day tanks and storage tanks except the ISO tanks and glycol tanks. The ISO tanks, both storage and day tanks with fugitives, are listed as 10S. Glycol tanks and fugitives are listed as 11S. There is no change proposed for the existing unit. The proposed change to foam production is to add another production line. The proposed production unit is listed as Foam Production Unit No. 2 (15S) with ISO tanks, both storage and day tanks with fugitives (16S) and Glycol tanks and fugitives (17S).

### **Fabrication**

Fabrication is taking the produced bun or master roll and forming it into a finished good. The finished goods include fabricated and non-fabricated products, depending on the order that is being prepared. What the order requires also dictates what processes the foam undertakes at the facility. Fabrication includes both the foam that is produced at the site and foam that is purchased from others. The following process descriptions apply to the fabrication area equipment.

### **Bun Press No. 1 (2S) and No. 2 (18S)**

This is the process of joining buns together to make longer buns or master rolls. An adhesive is applied to each end of the bun. The ends of the buns are then pressed together and a bond is formed. The buns can be joined end to end to make a long bun that can then be processed further. The existing bun press is 2S. The proposed bun press is 18S.

### **Hot Melt Laminator Nos. 1, 2, and 3 (3S, 4S, & 19S)**

The Hot Melt Laminators involve the lamination of fabric or other materials to foam/rubber. Adhesive is stored in a 55 gallon drum and is positioned into drum unloading equipment which heats and pumps the adhesive to the fabrication screen. The foam is unwound in conjunction with the laminate material which is going to be adhered to the foam. The system uses a screen printing technology to apply adhesive in a specific pattern across the width of the foam. The

screen tunnel is heated to between 225 and 275 degrees Fahrenheit. The screen tunnel is vented to the outside of the building. As the adhesive is applied to the foam, the fabric is nipped along the top of the substrate and is cut and rolled to various lengths. The existing hot melt laminators are No. 1 (3S) and No. 2 (4S). The proposed hot melt laminator is No. 3 (19S).

### **Buffer (5S)**

The buffer unit allows a foam product to be finished to a tight tolerance. Depending on the required thickness of the foam, the feed foam may be of different thicknesses. The buffer removes the foam to the correct thickness. Fines created during the process enter ductwork that carries it through the wall to an outside cyclone and double baghouse system for removing the fines. The baghouses are of sufficient efficiency to allow the exhaust air to be returned into the building. This unit does not vent directly to the outside of the building.

### **Misting Unit (6S)**

The misting unit applies a material to foam that allows a crust or skin to be developed on the foam. The foam material passes through a mist/spray of the material being applied and then is sent through an electric oven for curing the skin producing the final material.

### **Roll Coaters Nos. 1, 2, 3, 4, & 5 (7S, 13S, 20S, 21S & 22S)**

The roll coaters allow the crust or skin to be put on the foam similar to the misting units. The process uses chemicals and then froths them with air to make a shaving cream consistency froth and applies the froth to the foam. The material then passes through an oven for drying/curing of the skin.

There are two existing roll coaters. Roll Coater No. 1 (7S) has a natural gas oven which dries the coating. Roll Coater No. 2 (13S) has an infrared oven which cures the coating. There are three (3) proposed roll coaters (20S, 21S, and 22S) which will be similar to Roll Coater No. 1 with a natural gas oven.

### **Production Solvent Cleaning No. 1 (8S) and No. 2 (23S)**

There is one existing production solvent cleaning station at the site and one proposed for the new production unit.

### **Lab Line (9S)**

A lab line has been transported from our R&D location to the Huntington Facility. This equipment is similar to that of our main manufacturing line; however, it is on a much smaller scale. The equipment consists of three 80 gallon tanks that store ISO, POLY and Butanediol. These chemicals are metered from the tanks to a small mixing/dispensing unit and poured into molds for further analysis. This process is currently not in operation, but Rubberlite does have intentions in getting this process operational for R&D purposes. This is small scale mold production for R&D purposes and it currently does not have ventilation to the outside. Due to its

size and capabilities, the lab line primary purpose is to conduct trials for developing a new product offering going forward.

### **Vehicle Activity (12S)**

This is the vehicles that bring material to the site and take product from the site. Vehicles travel on public roads and then enter the site's paved areas.

### **Solvent Cleaning Stations (14S)**

There are four (4) solvent cleaning stations (14S) and that are used in different areas of the facility (one for roll coating, two in glue lamination, and one in maintenance. The solvents used in these parts washers are different and these are identified as a separate source from the production solvent cleaning stations (8S) and (23S).

### **Emergency Generator (24S)**

The facility has an existing emergency generator that was omitted when the site obtained a permit. The emergency generator allows for backup power during power outages. The emergency generator is not sized for operating the facility but just for backup power to required systems. The generator is being added to the permit at this time.

### **Flame Laminator (25S)**

A flame laminator applies the lamination material to the foam by heating the foam with natural gas flame to the point where the foam material becomes sticky allowing the laminate material to adhere to the foam without glue. As the foam cools the laminate material becomes permanently adhered to the foam.

### **Miscellaneous Fabrication Equipment (not sources)**

Within the fabrication part of the facility there are cutters, pressure sensitive adhesive lamination etc. which is not a source of air emissions. This equipment is listed in the following table titled "Miscellaneous Fabrication Equipment".

Miscellaneous Fabrication Equipment				
Equipment No.	Name	Model No.	Manufacturer	Description
CLKR	Clicker	MODEL B	UNITED SHOE	Stamps small shapes for physical testing and samples
INSPBRD	Inspection Board	TM-1360	JOSEPH PERNI	A large light board which when fabric is passed over for inspection
LS01	Loop Splitter #1	H-42A	F AND K	A Machine that when buns of material or master rolls are passed through it is cut down in to thin sheets.
LS02	Loop Splitter #2	H-42A	F AND K	
LS03	Loop Splitter 3	H-42A	F AND K	
LS04	Loop Splitter #4	H-42A	F AND K	
PSALAM01	PSA Laminator #1	W-56	WESCO	
PSALAM02	PSA Laminator #2	N/A	CONTROL DESI	Feeds rolls of Pressure Sensitive Adhesive and rolls of material through a set of nip rollers which bonds the two together.
PSALAM03	PSA Laminator #3	N/A	CONTROL DESI	
PSALAM04	PSA Laminator #4	N/A	CONTROL DESI	
RELIANT	Reliant	"POWERB	RELIANT MACH	
RS01	Roll Splitter #1	K-11	F AND K	Material is places on long conveyors and is passed back and forth cutting thin layers off with each pass.
RS02	Roll Splitter #2	K-11	F AND K	
RS03	Roll Splitter #3	K-11	F AND K	
RS04	Roll Splitter #4	K-1	F AND K	
RS05	Roll Splitter #5	K-21	F AND K	
SAW01	Saw #1	A1	NA	Operator will use this to square up the edges of buns before sending them to bun press
SAW02	Saw #2	CL-1	NA	
SAW03	Saw #3	LVR-1	NA	
SAW04	Saw #4	CL-1	NA	
SHTR	Sheeter	WA-S-6-	ROSENTHAL	Rolls of material are taken and cut a different widths
SLIT01	Slitter #1	500	LEVER MFG.	
SLIT03	Slitter #3		COLLINS CRAF	
SLIT04	Slitter #4	F600	FEBA	
STRP01	Stripping Machine #1	N/A	CONTROL DESI	
STRP02	Stripping Machine #2	N/A	CONTROL DESI	
STRP03	Stripping Machine #3	N/A	CONTROL DESI	
STRP04	Stripping Machine #4	N/A	CONTROL DESI	

Miscellaneous Fabrication Equipment				
Equipment No.	Name	Model No.	Manufacturer	Description
VS02	Vacuum Splitter #2	H-24A	F AND K	Buns of material are placed on a vacuum table and are passed back and forth cutting into thin sheets with each pass.
VS03	Vacuum Splitter #3	H-14A	F AND K	
VS04	Vacuum Splitter #4	H-24A	F AND K	

### Emissions Discussion

Emissions for a majority of the sources at this location are determined based on total utilization of materials and/or the total production. The variability of many of our sources is low and the emissions estimate is based on the utilization of the units. The roll coaters are sources where variability results in a wide range of possible emissions.

The roll coaters have numerous variables that affect the total emissions. The variables are final solids deposition (final dry coat weight), percent solids in the coating, VOC content in the coating, and line speed. Therefore, we are requesting a worst-case emissions value for VOC, HAPS and TAPS. To account for the variability, we are asking for each roll coating line emissions be set at the following limits: VOCS of 40 lbs/hr, HAPS at a maximum of 15 lbs/hr, and TAPS at a maximum of 1.0 lbs/hr. These emissions are based on a variety of coating since there is not just one coating that contains each of the pollutants. For yearly emissions, we are requesting that the totals be for all roll coaters for VOC. VOCS are not to exceed 43 tpy. For HAPS and TAPS, we are asking for a facility-wide total. HAPS on a facility-wide basis are not to exceed 10 tpy on an individual basis and 25 tpy on an aggregate basis. TAPS on a facility-wide basis are not to exceed the applicable thresholds for the identified TAPS.

We are requesting "facility-wide" numbers for HAPS and TAPS based on the variability that we have in multiple coatings and to provide flexibility in utilizing new coatings. In requesting the facility-wide totals, we are also continuing to define our method of verifying compliance with the total allowable emissions. Our methodology is explained on the following three pages under the heading of Rubberlite Air Permit Compliance Assurance. Each material to be used in the process will be reviewed and a determination made on how it affects emissions. In doing so we would also like to identify the research and development activities and when such activities cease.

### Research and Development (R&D)

Our facility is constantly developing new business. The stringent requirements for our products require numerous trial runs to determine if a material can be manufactured or coated to meet the customers' demands. To facilitate R&D, we would like to identify the point at which R&D ends. During R&D there may be multiple single production runs required to provide samples for our internal review and then provide samples to the potential client. These runs may result in a VOC, HAP, or TAP being utilized. At this point, we cannot identify each VOC, HAP or TAP which may be necessary in R&D. Therefore, we would like the flexibility of completing R&D

as needed. We believe that the point at which we put a product into production for sales it will no longer be in R&D and will fall under the requirements of the permit. At that point, if a new VOC, HAP or TAP is going to be used on an ongoing basis for production, we will follow the requirements of the permit, inform DAQ, and obtain approvals as needed.

### **Rubberlite Air Permit Compliance Assurance**

1. New Chemical Introduction Process ensures that all new chemistries are evaluated for impact on Air Permit requirements.
  - a. Review Process for all new chemicals
    - i. Any employee requesting a new chemical must send Safety Data Sheets (SDS) and information on how chemical will be used to the Environmental Health and Safety Department (EH&S)
    - ii. All chemical are then reviewed for all impacts to regulatory requirements.
      1. Scenarios are modeled to determine effect on hourly rates and rolling 12 averages.
    - iii. Volatile Organic Compounds (VOCs), Hazardous Air Pollutants (HAPs), Toxic Air Pollutants (TAPS) are identified and quantified.
      1. New compounds and chemicals are then added to the Batch Sheet Database Matrix which includes concentrations of VOCs, HAPs, and TAPs.
2. Batch Sheet Database
  - a. Our Manufacturing and Foam Finishing Technology (FFT) lines are required to have a Batch Sheet to process.
  - b. Trained and qualified employee will generate a batch sheet using Batch Sheet Database tool for their respective department.
    - i. Manufacturing has a Batch Sheet Database geared towards polyurethane foam chemistries.
    - ii. FFT has a Batch Sheet Database geared towards coating applications.
  - c. Batch Sheet Databases function via a collective Matrix of compounds and chemicals. These are added via the New Chemical Introduction Process.
  - d. Chemicals that have not been reviewed are not available in the database to be selected.
3. Calculations
  - a. Manufacturing Lines
    - i. Annual Calculations
      1. To calculate emissions, Rubberlite assumes the total amount of VOC, HAP, TAP poured and processed into foam is emitted from the process with the exception of MDI and ethylene glycol.
        - a. For the highly reactive MDI and ethylene glycol components, emissions are calculated using the industry accepted API methodology.

2. When a batch sheet is generated, the amounts of each chemical/compound are automatically logged into the tool to calculate emissions.
    - a. The Matrix houses the relevant information for VOC, HAP, and TAP.
  3. Rolling 12 Calculations are summarized and reviewed weekly to quantify % of the limit.
    - a. If the Rolling 12 rates trend towards the limits, administrative adjustments to production could be made to ensure compliance.
      - i. This has never occurred.
- ii. Hourly Calculations
    1. VOCs evolve from the foam throughout the curing cycle of the product. Rubberlite assumes a minimum of 24 hours to cure before skiving and shipping; therefore, we assume 100% of the VOC is emitted within the first 24 hours.
  - iii. Rubberlite takes the amount of VOC processed (calculated from Batch database tool) and divides it by 24 hours to calculate the hourly emission rate value.
- b. Coating Lines FFT Department
    - i. Annual Calculations
      1. To calculate emissions, Rubberlite assumes the total amount of VOC, HAP, TAP applied is emitted from the process.
      2. When a batch sheet is generated, the amounts of each chemical/compound are automatically logged into the tool to calculate emissions.
        - a. The Matrix houses the relevant information for VOC, HAP, and TAP.
      3. Rolling 12 Calculations are summarized and reviewed weekly to quantify % of the limit.
        - a. If the Rolling 12 rates trend towards the limits, administrative adjustments to production could be made to ensure compliance.
          - i. This has never occurred.
    - ii. Hourly Calculations
      1. There are four main variables that affect VOC hourly emission rates. These values are final solids deposition (final dry coat weight), percent solids in the coating, VOC content in the coating, and line speed. Each of these is captured in the database.
      2. When an operator develops a Batch Sheet, the Database will automatically calculate the potential hourly calculation based on desired parameters set by the operator.

- a. If the hourly limit is within 20% of a limit, it will flag the operator and send out a notification for further review.
  - b. Under this review, EH&S and the chemist will review coating constituents, run parameters, and emission calculations.
  - c. Modifications will be made to ensure compliance. E.g., slower line speed, lower deposition rates (final dry coat weight).
3. Once the run is complete, mass balance consumptions, realized line speed, and final measured dry coat weight are entered into the database and actual hourly emissions are calculated.

**ATTACHMENT H**  
**MATERIAL SAFETY DATA SHEETS**  
**EXISTING MSDS ON CD**  
**NEW MSDS INCLUDED HEREWITH**

**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 11/15/2011

Reviewed on 11/15/2011

**1 Identification of the substance/mixture and of the company/undertaking**

- **Product identifier**
- **Trade name:** ACRAFIX ML
- **MSDS Number:** 102081
- **Application of the substance / the preparation** Textile auxiliary
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
TANATEX Chemicals B.V.  
Postbus 46, 6710 BA  
Ede, Nederland  
Tel: +31 (0)318 670911, Fax: +31 (0)318 630236
- 
- TANATEX Chemicals USA Inc.  
PO Box 2497  
Dalton, Ga. 30722 USA  
Tel: +1 706 428 9111, Fax: +1 706 428 9150
- **Information department:** E-mail: [hsetanatex@tanatexchemicals.com](mailto:hsetanatex@tanatexchemicals.com)
- **Emergency telephone number:**  
Emergency phone: +32 (0)14 58 45 45  
Fax: +32 (0)14 58 35 16

**2 Composition/information on ingredients**

- **Chemical characterization:** Mixtures
  - **Description:** modified melamine resin, aqueous preparation
  - **Dangerous components:**
- |  |          |
|--|----------|
| 111-46-6 2,2'-oxybisethanol<br>Xn R22                                      | 1 - 5%   |
| 67-56-1 methanol<br>T R23/24/25-39/23/24/25; F R11                         | 0.1 - 1% |
| 50-00-0 formaldehyde<br>T R23/24/25; C R34; Xn R40; Xi R43<br>Carc. Cat. 3 | 0.1 - 1% |

**3 Hazards Identification**

- **Classification of the substance or mixture**
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
 Irritant  
May cause sensitisation by skin contact.
- **Information concerning particular hazards for human and environment:**  
The product has to be labelled due to the calculation procedure of international guidelines.
- **Label elements**
- **Labelling according to EU guidelines:**  
The product has been classified and marked in accordance with directives on hazardous materials.
- **Code letter and hazard designation of product:**  
Irritant

(Contd. on page 2)

**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 11/15/2011

Reviewed on 11/15/2011

Trade name: **ACRAFIX ML**

(Contd. of page 1)

- **Hazard-determining components of labelling:**  
formaldehyde
- **Risk phrases:**  
May cause sensitisation by skin contact.
- **Safety phrases:**  
Avoid contact with skin.  
Wear suitable gloves.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**  
Health = 0  
Fire = 1  
Reactivity = 0
- **HMSI-ratings (scale 0 - 4)**  
Health = 1  
Fire = 1  
Reactivity = 0

#### 4 First aid measures

- **After inhalation:** Supply fresh air and to be sure call for a doctor.
- **After skin contact:**  
Remove contaminated clothing and was affected skin with water and soap. If symptoms persist, consult a doctor.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** Wash out mouth with a copious amount of water. Seek medical attention.

#### 5 Firefighting measures

- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**  
No further relevant information available.
- **Protective equipment:**  
Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

#### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Use personal protective equipment (chapter 8).
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container for disposal. For large spills dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.

(Contd. on page 3)

USA

**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 11/15/2011

Reviewed on 11/15/2011

Trade name: **ACRAFIX ML**

See Section 13 for disposal information.

(Contd. of page 2)

**7 Handling and storage**

- **Handling:**
  - **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Avoid contact with eyes and skin.
  - **Information about protection against explosions and fires:**  
No special measures required.
  - **Storage:**
  - **Requirements to be met by storerooms and receptacles:** No special requirements.
  - **Information about storage in one common storage facility:** Not required.
  - **Further information about storage conditions:**  
Keep container tightly closed in a dry and well-ventilated place.
- Storage period 12 months.
- **Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
  - **Components with limit values that require monitoring at the workplace:**
- 111-46-6 2,2'-oxybisethanol**  
WEEL 10 mg/m<sup>3</sup>
- 67-56-1 methanol**  
PEL 260 mg/m<sup>3</sup>, 200 ppm  
REL Short-term value: 325 mg/m<sup>3</sup>, 250 ppm  
Long-term value: 260 mg/m<sup>3</sup>, 200 ppm  
Skin  
TLV Short-term value: 328 mg/m<sup>3</sup>, 250 ppm  
Long-term value: 262 mg/m<sup>3</sup>, 200 ppm  
Skin; BEI
- 50-00-0 formaldehyde**  
PEL Short-term value: 2 ppm  
Long-term value: 0.75 ppm  
see 29 CFR 1910.1048  
REL Short-term value: C 0.1\* ppm  
Long-term value: 0.016 ppm  
\*15-min  
TLV Short-term value: C 0.37 mg/m<sup>3</sup>, C 0.3 ppm  
SEN
- **Additional information:** The lists that were valid during the creation were used as basis.
  - **Personal protective equipment:**
  - **General protective and hygienic measures:**  
The usual precautionary measures for handling chemicals should be followed.  
Avoid contact with the eyes and skin.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Do not eat or drink while working.
  - **Breathing equipment:** Not necessary if room is well-ventilated.
  - **Protection of hands:**  
Protective gloves

(Contd. on page 4)

**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 11/15/2011

Reviewed on 11/15/2011

Trade name: **ACRAFIX ML**

(Contd. of page 3)

The glove material has to be impermeable and resistant to the product.  
Due to missing tests no recommendation to the glove material can be given for the product.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Safety glasses

**9 Physical and chemical properties**

· **General information**

· **Appearance:**

Form: Fluid  
Color: Colorless

· **Odor:** Weak

· **pH-value:** 7 - 10

· **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: 100°C (212 °F)

· **Flash point:** > 100°C (> 212 °F)

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Vapor pressure at 20°C (68 °F):** 24 hPa (18 mm Hg)

· **Density at 20°C (68 °F):** 1.10 - 1.15 g/cm<sup>3</sup> (9.18 - 9.597 lbs/gal)

· **Solubility in / Miscibility with**

Water: Miscible

· **Viscosity:**

Dynamic: 100 - 200 mPa.s

· **Solvent content:**

VOC content: 3.0 %

· **Other information** No further relevant information available.

**10 Stability and reactivity**

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

· **Incompatible materials:** oxidizing agents

· **Hazardous decomposition products:**

Carbon dioxide  
Carbon monoxide  
Nitrogen oxides (NO<sub>x</sub>)  
Ammonia

(Contd. on page 5)

**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 11/15/2011

Reviewed on 11/15/2011

Trade name: **ACRAFIX ML**

Formaldehyde

(Contd. of page 4)

**11 Toxicological information**

- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**  
Oral LD50 > 2000 mg/kg (rat)
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Irritant

**12 Ecological information**

- **Acquatic toxicity:**  
EC50 > 100 mg/l (waste water bacteria)  
LC50 > 100 mg/l (fish)
  - **Persistence and degradability** No further relevant information available.
  - **Biological elimination:**  
OECD 302B: 10 - 30 % (Zahn-Wellens)
  - **Behavior in environmental systems:**
  - **Bioaccumulative potential** No further relevant information available.
  - **Additional ecological information:**
  - **CSB-value:** 800 mg/g
  - **BSB5-value:** 17 mg/g
  - **TOC value:** 500 mg/g
  - **General notes:**  
Product does not add to the AOX-value of the sewage. (DIN EN 1485)  
The product does not contain heavy metals in concentrations of concern for waste water.  
The product contains approx. < 0.1 % available nitrogen which can contribute to eutrophication.  
The product does not contain phosphates or organophosphorus compounds.
- Water hazard class 1 (Self-assessment): slightly hazardous for water

**13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation:**

(Contd. on page 6)



**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 11/15/2011

Reviewed on 11/15/2011

Trade name: **ACRAFIX ML**

(Contd. of page 6)

- **Chemicals known to cause developmental toxicity:**  
None of the ingredients is listed.
- **Carcinogeny categories**
- **EPA (Environmental Protection Agency)**  
50-00-0 formaldehyde: B1
- **IARC (International Agency for Research on Cancer)**  
50-00-0 formaldehyde: 1
- **NTP (National Toxicology Program)**  
50-00-0 formaldehyde: R
- **TLV (Threshold Limit Value established by ACGIH)**  
50-00-0 formaldehyde: A2
- **NIOSH-Ca (National Institute for Occupational Safety and Health)**  
50-00-0 formaldehyde
- **OSHA-Ca (Occupational Safety & Health Administration)**  
50-00-0 formaldehyde
- **New Jersey RTK**  
None of the ingredients is listed.
- **Massachusetts RTK**  
None of the ingredients is listed.
- **Product related hazard informations:**  
The product has been classified and marked in accordance with directives on hazardous materials.
- **Hazard symbols:**  
Irritant
- **Hazard-determining components of labelling:**  
formaldehyde
- **Risk phrases:**  
May cause sensitisation by skin contact.
- **Safety phrases:**  
Avoid contact with skin.  
Wear suitable gloves.

**16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Version number : 2**
- **Department issuing MSDS:** Product safety department.
- **Contact:**  
Specialist Product Safety Information  
E-mail: [hsetanatex@tanatexchemicals.com](mailto:hsetanatex@tanatexchemicals.com)



# SAFETY DATA SHEET

in accordance with Globally Harmonized System of Classification of Chemicals

No.X-0969GHS-01

Identity (As Used on Label and List)

Revised Date:

Prepared Date: June 7, 2010

## AsahiGuard E-SERIES AG-E082

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### 1.1 Identification of the substance or preparation

Trade name: AsahiGuard E-SERIES AG-E082

Synonym: Fluoropolymer emulsion

#### 1.2 Use of the substance/preparation

water and oil repellent

#### 1.3 Company/undertaking identification

Manufacturer

Company Name: ASAHI GLASS CO.,LTD. Chemicals Company

Address: 1-12-1, Yurakucho, Chiyoda-ku, Tokyo, 100-8405, Japan

Telephone No.: +81-3-3218-5504

Facsimile No.: +81-3-3218-7845

### 2. HAZARDS IDENTIFICATION

Application of the classification rules in GHS

#### PHYSICAL HAZARDS

Flammable liquid	not classified
Pyrophoric liquid	not classified

#### HEALTH HAZARDS

Acute toxicity(oral)	not classified
Skin corrosion and irritation	Classification not possible
Serious eye damage and eye irritation	Classification not possible
Germ cell mutagenicity	Classification not possible
Carcinogenicity	Classification not possible
Reproductive toxicity	Classification not possible
Aspiration toxicity	Classification not possible

#### HAZARDOUS TO THE AQUEOUS ENVIRONMENT

Acute	Classification not possible
Chronic	Classification not possible

Signal word: N/A

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### 3. COMPOSITION / INFORMATION ON INGREDIENTS

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#### Components

CAS-No	Name	% Weight
Trade Secret	Fluoropolymer	Trade Secret
Trade Secret	Emulsifier	Trade Secret
25265-71-8	Dipropylene glycol (DPG)	5
	water	75

Solid 20%

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### 4. FIRST-AID MEASURES

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- **Inhalation:** If inhaled, remove the affected individual immediately to fresh air. Call a physician if respiratory irritation develops or if breathing becomes difficult.
- **Skin contact:** Wash affected areas with plenty of water and soap for several minutes. Call a physician if irritation develops.
- **Eye contact:** First rinse eyes with water. Remove any contact lenses, and continue washing with running water for at least 15 minutes. Call a physician if irritation develops.
- **Ingestion:** If swallowed seek medical immediately and show the doctor packing or label. Give 3-4 glasses of water, but do not induce vomiting. If vomiting continues, give water again. Do not give anything to an unconscious or convulsing person.

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### 5. FIRE-FIGHTING MEASURES

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- **Suitable extinguishing media:** Use dry chemical, alcohol-resistant foam, water spray or carbon dioxide for surrounding fire.
- **Unsuitable extinguish media/methods:** none
- **Hazardous combustion product or gases:** This product is non-flammable. However, if involved in a fire or if overheated (>200deg.C), there is a risk of generation of toxic degradation products such as: hydrogen chloride, hydrogen fluoride, carbonyl fluoride, carbon monoxide, and carbon dioxide. Between 425-450deg.C, toxic particulate with a size of 0.2-0.5um may be generated by heat degradation. Over 470deg.C, perfluoro isobutylene may be generated by heat degradation.
- **Special protective equipment for fire fighters:** Wear self-contained breathing apparatus in confined areas or when exposed to combustion products.
- **Additional information:** Move container from fire areas if it can be done without risk. Cool containers with water spray. Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

---

### 6. ACCIDENTAL RELEASE MEASURES

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#### Personal precautions:

Ensure adequate ventilation.

Use personal protective clothing

#### Environmental precautions:

Collect contaminated water/firefighting water separately.

Do not wash away into shower or waterway.

#### Methods for cleaning up/taking up:

Take up with absorbent material (e.g. sand, general-purpose binder)

**Additional information:**

Information for safe handling looks up chapter 7.

Information for disposal looks up chapter 13.

---

## 7. HANDLING AND STORAGE

---

### Handling

Avoid contact with eyes.

Avoid circumstances that release respirable particles.

For spray applications, use a coarse spray device such as trigger sprayer or pressurized dispenser with particle size production of greater than 15 microns.

Adjust spray pressure to keep particle size greater than 15 microns. DO NOT aerosolize or atomize.

Suitable ventilation must be used during application.

Do not breathe spray. During fumigation/spraying wear suitable respiratory equipment

### Storage

Keep container tightly closed. Keep away from heat, and sunlight.

Storage temperature range: 5-40deg.C.

If material freezes, gently thaw prior to use. Mild agitation may be required.

---

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

---

### Ingredients with occupational exposure limits to be monitored

N/A

### Exposure controls

#### Occupational exposure controls

#### Engineering Controls:

Use suitable ventilation to remove spray mists and vapor or fume generated by applications where the fluoropolymers will be exposed to elevated temperatures.

#### Personal protection:

- **Respiratory protection:** An air purifying respirator with organic vapor cartridge or canister
- **Skin protection:** Protective gloves
- **Eye protection:** Chemical goggles and face shield

**Additional recommendations:** An eyewash and safety shower should be nearby and ready for use.

Hands should be washed thoroughly after handling.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

---

- **Appearance and Odour:** white emulsion, Glycol odor
- **pH value (25deg.C):** 2.1-4.5
- **Boiling point:** >100deg.C
- **Flash point (method):** N/D
- **Flammable Limits:** LEL: N/D UEL: N/D
- **Vapour pressure (mmHg):** N/D
- **Vapour Density (air=1):** N/D
- **Melting Point:** < 0 deg.C
- **Evaporation Rate (Ethyl ether = 1):** N/D
- **Solubility in water:** Dispersible

---

## 10. STABILITY AND REACTIVITY

---

**Conditions to avoid:**

Avoid contact with heat.

Avoid long storage periods in more than 40deg.C since the product degrades with age.

**Stability:** Stable under normal temperature and pressure.

**Materials to avoid (Incompatibilities):**Oxidizers, alkalis.

**Hazardous decomposition products:**

In a fire situation, hydrogen chloride, hydrogen fluoride, carbonyl fluoride, carbon monoxide and carbon dioxide may liberate.

---

## 11. TOXICOLOGICAL INFORMATION

---

**Acute toxicity:** N/D

LD50(Rat, Oral) of this product is estimated to be > 2,500mg/kg at least from the LD50 value of the components. Category of GHS is 5 or not classified.

LD50(oral) 14.85g/kg (DPG)

Eye irritation (rabbit): N/D

Irritation Eye (rabbit) : 500 mg Mild (DPG)

Dermal irritation (rabbit):N/D

Irritation Skin (rabbit) : 500 mg/24h Mild (DPG)

**Sensitization:** N/D

**Mutagenicity:**

- Ames Assay: negative OECD No.471 (Fluoropolymer)

**Carcinogenicity**

All ingredients are not listed by NTP, IARC or OSHA as carcinogens.

---

## 12. ECOLOGICAL INFORMATION

---

**Biodegradability:** N/D

COD :47200 mg/l (by JIS K0102 17)

BOD: 290 mg/l (by JIS K0102 21)

---

## 13. DISPOSAL CONSIDERATIONS

---

Reuse when possible the residual product. Send waste product for thermal destruction, using high-temperature incinerators designed to burn fluorine compounds.

Reuse containers when possible, after thorough washing. Dispose of waste containers to authorized landfill, in accordance with local laws and regulations.

Do not dump this product into sewers, on the ground or into any body of water.

---

#### 14. TRANSPORT INFORMATION

---

This product is not a dangerous goods within the meaning of Recommendations on the Transport of Dangerous Goods Model Regulations by UNITED NATIONS.

- **UN No.:** Not regulated
- **Proper Shipping Name :** N/A
- **ADR / RID Status: --; Class: --**
- **IMDG Status: - ; Class: - -**
- **ICAO / IATA Status:-not restricted**

---

#### 15. REGULATORY INFORMATION

---

Ensure this materials in compliance with federal requirements and ensure conformity to local regulation.

##### Other information

##### Classification

This product is not a dangerous substances within the meaning of the classification, packaging and labeling according to EC Directives.

- **EEC Classification: :** Not classified
- **Hazard symbol:** Not classified
- **Risk phrases:** Not classified
- **Safety phrases:** Not classified

##### Regulation

##### TSCA Status:

TSCA 5(e) is applicable. Only AGC Chemicals Americas can import this product.

TSCA12(b) is applicable.

##### Council Directive 92/32/EEC Status:

All monomers and ingredients are listed in the EINECS.

---

#### 16. OTHER INFORMATION

---

**N/D:** no data

**N/A:** not applicable

**N/E:** not established

**MAK:** maximum workplace concentration

**ACGIH:** American Conference of Governmental Industrial Hygienists

Changes were made in sections:

The product is not designed for special applications such as pharmaceutical, medical use.

This Safety Data Sheet is offered only for your information, consideration and investigation. Asahi Glass Co., Ltd. provides no warranties, either express or implied, and assumes no responsibility for the accuracy or completeness of the data contained herein.

---

# SAFETY DATA SHEET

in accordance with Globally Harmonized System of Classification of Chemicals

No.X-0969GHS-01  
Identity (As Used on Label and List)  
Revised Date:  
Prepared Date: June 7, 2010

## AsahiGuard E-SERIES AG-E082

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### 1.1 Identification of the substance or preparation

Trade name: AsahiGuard E-SERIES AG-E082  
Synonym: Fluoropolymer emulsion

#### 1.2 Use of the substance/preparation

water and oil repellent

#### 1.3 Company/undertaking identification

Manufacturer  
Company Name: ASAHI GLASS CO.,LTD. Chemicals Company  
Address: 1-12-1, Yurakucho, Chiyoda-ku, Tokyo, 100-8405, Japan  
Telephone No.: +81-3-3218-5504  
Facsimile No.: +81-3-3218-7845

### 2. HAZARDS IDENTIFICATION

#### Application of the classification rules in GHS

#### PHYSICAL HAZARDS

Flammable liquid	not classified
Pyrophoric liquid	not classified

#### HEALTH HAZARDS

Acute toxicity(oral)	not classified
Skin corrosion and irritation	Classification not possible
Serious eye damage and eye irritation	Classification not possible
Germ cell mutagenicity	Classification not possible
Carcinogenicity	Classification not possible
Reproductive toxicity	Classification not possible
Aspiration toxicity	Classification not possible

#### HAZARDOUS TO THE AQUEOUS ENVIRONMENT

Acute	Classification not possible
Chronic	Classification not possible

Signal word: N/A

---

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

---

#### Components

CAS-No	Name	% Weight
Trade Secret	Fluoropolymer	Trade Secret
Trade Secret	Emulsifier	Trade Secret
25265-71-8	Dipropylene glycol (DPG)	5
	water	75

Solid 20%

---

### 4. FIRST-AID MEASURES

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- **Inhalation:** If inhaled, remove the affected individual immediately to fresh air. Call a physician if respiratory irritation develops or if breathing becomes difficult.
- **Skin contact:** Wash affected areas with plenty of water and soap for several minutes. Call a physician if irritation develops.
- **Eye contact:** First rinse eyes with water. Remove any contact lenses, and continue washing with running water for at least 15 minutes. Call a physician if irritation develops.
- **Ingestion:** If swallowed seek medical immediately and show the doctor packing or label. Give 3-4 glasses of water, but do not induce vomiting. If vomiting continues, give water again. Do not give anything to an unconscious or convulsing person.

---

### 5. FIRE-FIGHTING MEASURES

---

- **Suitable extinguishing media:** Use dry chemical, alcohol-resistant foam, water spray or carbon dioxide for surrounding fire.
- **Unsuitable extinguish media/methods:** none
- **Hazardous combustion product or gases:** This product is non-flammable. However, if involved in a fire or if overheated (>200deg.C), there is a risk of generation of toxic degradation products such as: hydrogen chloride, hydrogen fluoride, carbonyl fluoride, carbon monoxide, and carbon dioxide. Between 425-450deg.C, toxic particulate with a size of 0.2-0.5um may be generated by heat degradation. Over 470deg.C, perfluoro isobutylene may be generated by heat degradation.
- **Special protective equipment for fire fighters:** Wear self-contained breathing apparatus in confined areas or when exposed to combustion products.
- **Additional information:** Move container from fire areas if it can be done without risk. Cool containers with water spray. Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

---

### 6. ACCIDENTAL RELEASE MEASURES

---

#### Personal precautions:

Ensure adequate ventilation.  
Use personal protective clothing

#### Environmental precautions:

Collect contaminated water/firefighting water separately.  
Do not wash away into shower or waterway.

#### Methods for cleaning up/taking up:

Take up with absorbent material (e.g. sand, general-purpose binder)

**Additional information:**

Information for safe handling looks up chapter 7.

Information for disposal looks up chapter 13.

---

## 7. HANDLING AND STORAGE

---

### Handling

Avoid contact with eyes.

Avoid circumstances that release respirable particles.

For spray applications, use a coarse spray device such as trigger sprayer or pressurized dispenser with particle size production of greater than 15 microns.

Adjust spray pressure to keep particle size greater than 15 microns. DO NOT aerosolize or atomize.

Suitable ventilation must be used during application.

Do not breathe spray. During fumigation/spraying wear suitable respiratory equipment

### Storage

Keep container tightly closed. Keep away from heat, and sunlight.

Storage temperature range: 5-40deg.C.

If material freezes, gently thaw prior to use. Mild agitation may be required.

---

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

---

### Ingredients with occupational exposure limits to be monitored

N/A

### Exposure controls

#### Occupational exposure controls

#### Engineering Controls:

Use suitable ventilation to remove spray mists and vapor or fume generated by applications where the fluoropolymers will be exposed to elevated temperatures.

#### Personal protection:

- **Respiratory protection:** An air purifying respirator with organic vapor cartridge or canister
- **Skin protection:** Protective gloves
- **Eye protection:** Chemical goggles and face shield

**Additional recommendations:** An eyewash and safety shower should be nearby and ready for use. Hands should be washed thoroughly after handling.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

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- **Appearance and Odour:** white emulsion, Glycol odor
- **pH value (25deg.C):** 2.1-4.5
- **Boiling point:** >100deg.C
- **Flash point (method):** N/D
- **Flammable Limits:** LEL: N/D UEL: N/D
- **Vapour pressure (mmHg):** N/D
- **Vapour Density (air=1):** N/D
- **Melting Point:** < 0 deg.C
- **Evaporation Rate (Ethyl ether = 1):** N/D
- **Solubility in water:** Dispersible

---

## 10. STABILITY AND REACTIVITY

---

**Conditions to avoid:**

Avoid contact with heat.

Avoid long storage periods in more than 40deg.C since the product degrades with age.

**Stability:** Stable under normal temperature and pressure.

**Materials to avoid (Incompatibilities):**Oxidizers, alkalis.

**Hazardous decomposition products:**

In a fire situation, hydrogen chloride, hydrogen fluoride, carbonyl fluoride, carbon monoxide and carbon dioxide may liberate.

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## 11. TOXICOLOGICAL INFORMATION

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**Acute toxicity:** N/D

LD50(Rat, Oral) of this product is estimated to be > 2,500mg/kg at least from the LD50 value of the components. Category of GHS is 5 or not classified.

LD50(oral) 14.85g/kg (DPG)

**Eye irritation (rabbit):** N/D

Irritation Eye (rabbit) : 500 mg Mild (DPG)

**Dermal irritation (rabbit):**N/D

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**Sensitization:** N/D

**Mutagenicity:**

- Ames Assay: negative OECD No.471 (Fluoropolymer)

**Carcinogenicity**

All ingredients are not listed by NTP, IARC or OSHA as carcinogens.

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**Biodegradability:** N/D

COD :47200 mg/l (by JIS K0102 17)

BOD: 290 mg/l (by JIS K0102 21)

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Reuse when possible the residual product. Send waste product for thermal destruction, using high-temperature incinerators designed to burn fluorine compounds.

Reuse containers when possible, after thorough washing. Dispose of waste containers to authorized landfill, in accordance with local laws and regulations.

Do not dump this product into sewers, on the ground or into any body of water.

---

#### 14. TRANSPORT INFORMATION

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This product is not a dangerous goods within the meaning of Recommendations on the Transport of Dangerous Goods Model Regulations by UNITED NATIONS.

- **UN No.:** Not regulated
- **Proper Shipping Name :** N/A
- **ADR / RID Status:** - - ; **Class:** - -
- **IMDG Status:** - ; **Class:** - -
- **ICAO / IATA Status:**-not restricted

---

#### 15. REGULATORY INFORMATION

---

**Ensure this materials in compliance with federal requirements and ensure conformity to local regulation.**

##### **Other information**

##### **Classification**

This product is not a dangerous substances within the meaning of the classification, packaging and labeling according to EC Directives.

- **EEC Classification:** : Not classified
- **Hazard symbol:** Not classified
- **Risk phrases:** Not classified
- **Safety phrases:** Not classified

##### **Regulation**

##### **TSCA Status:**

TSCA 5(e) is applicable. Only AGC Chemicals Americas can import this product.

TSCA12(b) is applicable.

##### **Council Directive 92/32/EEC Status:**

All monomers and ingredients are listed in the EINECS.

---

#### 16. OTHER INFORMATION

---

**N/D:** no data

**N/A:** not applicable

**N/E:** not established

**MAK:** maximum workplace concentration

**ACGIH:** American Conference of Governmental Industrial Hygienists

Changes were made in sections:

The product is not designed for special applications such as pharmaceutical, medical use.

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---

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.  
*Air Shield 52*

**1. PRODUCT & COMPANY IDENTIFICATION**

<b>Manufacturer:</b> PIONEER CHEMICAL, INC. 300 Goldsmith Street Greenville, SC 29609	<b>Emergency Phone:</b> 864-232-4304 <b>Information:</b> 864-232-4304 <b>Print Date:</b> 6/25/15 <b>Revision Date:</b> 6/25/15
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<b>Product Name:</b> Air Shield 52	<table border="1"> <thead> <tr> <th colspan="2">HMIS Rating</th> </tr> </thead> <tbody> <tr> <td>Health:</td> <td>1</td> </tr> <tr> <td>Flammability:</td> <td>1</td> </tr> <tr> <td>Physical Hazard:</td> <td>0</td> </tr> <tr> <td>Protective Equip.:</td> <td>B</td> </tr> </tbody> </table>	HMIS Rating		Health:	1	Flammability:	1	Physical Hazard:	0	Protective Equip.:	B
HMIS Rating											
Health:		1									
Flammability:		1									
Physical Hazard:	0										
Protective Equip.:	B										
<b>Generic Name:</b> Acrylic-based coating											
<b>CAS Number:</b> Mixture											
<b>Product usage:</b> Coating											

**2. HAZARDS IDENTIFICATION**

<b>Classification:</b>		
<b>Pictogram(s):</b>		
<b>Signal Word:</b>	Warning!	
<b>Hazard Statement(s):</b>	<b>H303</b>	May be harmful if swallowed
	<b>H316</b>	Causes mild skin irritation
	<b>H320</b>	Causes eye irritation
<b>Precautionary Statement(s):</b>	<b>P262</b>	Do not get in eyes, on skin, or on clothing
	<b>P264</b>	Wash skin thoroughly after handling
	<b>P270</b>	Do not eat, drink, or smoke when using this product
	<b>P280</b>	Wear protective gloves and eye protection
	<b>P301+P312</b>	IF SWALLOWED: Call a doctor if you feel unwell
	<b>P302+P352</b>	IF ON SKIN: Wash with plenty of water and soap
	<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
	<b>P333+P313</b>	If skin irritation or rash occurs: Get medical advice
	<b>P337+P313</b>	If eye irritation persists get medical attention
<b>Hazards Not Otherwise Classified:</b>		

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

<u>Components</u>	<u>CAS #</u>	<u>%</u>	<u>Hazard Classification(s)</u>
None at reportable levels			

**4. FIRST AID MEASURES**

<b>Eyes:</b>	Flush with large amounts of water for 15 minutes. Get medical attention if symptoms persist.
<b>Inhalation:</b>	Inhalation of product should not occur, but if breathing becomes difficult, remove to fresh air and if symptoms persist, seek medical attention.
<b>Skin:</b>	Wash thoroughly with soap and water. Remove contaminated clothing and launder before re-use. Get medical attention if irritation develops and persists.

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.  
*Air Shield 52*

**5. FIRE FIGHTING MEASURES**

**Extinguishing Media:** Foam, carbon dioxide, water spray, dry chemical  
**Special Fire Fighting Procedures:** Firefighters should wear self-contained breathing apparatus.  
**Unusual Fire & Explosion Hazards:** None known.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal Protection:** Wear appropriate personal protection equipment as described in Section 8.  
**Environmental Protection:** Confine spill. Transfer liquid to containers for disposal. Place absorbents and diking materials in separate containers. Dispose of in accordance with local, state, and federal regulations.

**7. HANDLING AND STORAGE**

**Handling:** Wear appropriate personal protection equipment as described in Section 8. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. Avoid contact with skin, eyes, and clothing.  
**Storage:** Store in a cool dry area. Store between 34 and 110 degrees F.  
**Other Precautions:** None known.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

<u>Component</u>	<u>CAS #</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
None at reportable levels			

**Respiration Protection:** None normally required.  
**Eye Protection:** Chemical safety goggles with side shields.  
**Glove Protection:** Rubber or neoprene  
**Other Protective Equipment:** Eye wash station and safety shower are suggested.  
**Engineering Controls:** Good general ventilation is acceptable.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	White liquid	<b>Vapor Pressure:</b>	Not determined
<b>Odor:</b>	Acrylic	<b>Vapor Density:</b>	Not determined
<b>pH:</b>	8.0 – 9.0	<b>Relative Density:</b>	Not determined
<b>Melting/Freezing Point:</b>	32° F	<b>Solubility:</b>	Dispersible
<b>Initial Boiling Point and Boiling Range:</b>	212° F	<b>Auto-Ignition Temp.</b>	Not determined
<b>Flash Point:</b>	> 200° F	<b>Decomposition Temp:</b>	Not determined
<b>Evaporation Rate:</b>	Not determined	<b>Viscosity:</b>	< 15,000 cps
<b>Flammability:</b>	Non-combustible	<b>Non-Volatiles:</b>	~53%
<b>Upper/Lower Flammability Limits:</b>	Not determined	<b>VOC Content:</b>	Not determined

**10. STABILITY AND REACTIVITY**

**Reactivity:** Not available.  
**Chemical Stability:** Product is stable.  
**Possibility of Hazardous Reactions:** None known.  
**Conditions to Avoid:** None known.  
**Incompatibility (Materials to Avoid):** Strong oxidizing agents.  
**Hazardous Decomposition Products:** Carbon monoxide & carbon dioxide.

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.  
*Air Shield 52*

**11. TOXICOLOGY INFORMATION**

No toxicological information is available.

<u>Carcinogens</u> None	<u>CAS #</u>	<u>NTP</u>	<u>IARC Monographs</u>	<u>OSHA Regulated</u>
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**12. ECOLOGICAL INFORMATION**

No ecological information is available.

**13. DISPOSAL CONSIDERATION**

Discarded product is not considered a hazardous waste under RCRA, 40 CFR 261. Please dispose of in accordance with all local, state, and federal regulations.

**14. TRANSPORTATION INFORMATION**

<b>DOT Proper Shipping Name:</b>	Not regulated.	<b>DOT Hazard Class:</b>	N/A
<b>DOT Identification Number:</b>	N/A	<b>DOT Packing Group:</b>	N/A

**15. REGULATORY INFORMATION**

<b>OSHA Status:</b>	Hazardous under Federal OSHA Hazard Communication Standard 29 CFR 1910.1200					
<b>TSCA Status:</b>	All ingredients are listed.					
<b>SARA Title III:</b>						
<b>Section 311/312 Hazard Categories:</b>	<b>Immediate (Acute)</b> Yes	<b>Delayed (Chronic)</b> No	<b>Fire</b> No	<b>Reactive</b> No	<b>Sudden Release of Pressure</b> No	
				<b>CAS Number</b>	<b>Weight Percent</b>	
<b>Section 302 Extremely Hazardous Substances:</b>	None at levels greater than 1% (or 0.1% if carcinogenic)					
<b>Section 313: Toxic Chemicals:</b>	None at or above de minimus concentrations					
<b>CERCLA Reportable Quantity:</b>	None at concentrations greater than 1%					
<b>RCRA Status:</b>	If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)					

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.  
*Air Shield 52*

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**16. OTHER INFORMATION**

This bulletin cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information contained herein should be passed on to your customers or employees, as the case may be. Pioneer Chemical, Inc. must rely on the user to utilize the information we have supplied to develop work practice guidelines and employee instructional programs for the individual operation.

**DISCLAIMER OF LIABILITY**

The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist. Final determination of suitability of the chemical is the sole responsibility of the user. Users of any chemical should satisfy themselves that the conditions and methods of use assure that the chemical is used safely. No representations of warranties, either expressed or implied, of merchantability, fitness for a particular purpose or of any other nature are made herein with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

Nothing contained herein is to be construed as a recommendation for use in violation of any patents or of appropriate laws or regulations.



# MICRO POWDERS, INC.

580 White Plains Road • Tarrytown, NY 10591 • TEL 914-793-4058 • FAX 914-472-7098 • EMAIL [mpi@micropowders.com](mailto:mpi@micropowders.com)

## TECHNICAL DATA SHEET

### AQUABEAD® 525E

**AQUABEAD 525E** is a specialized wax emulsion formulated for aqueous stains, sealers, paints, and coatings. Comprised of a combination of paraffin and natural waxes, **AQUABEAD 525E** provides excellent initial and long lasting water beading as well as weather and moisture resistance. Water droplets actually roll off most surfaces due to the very high contact angle.

#### TYPICAL PROPERTIES

Appearance..... White to off white emulsion  
%Non-volatile..... 30.0% ± 1.0%  
Viscosity..... 500 cps. maximum  
pH range..... 10.0 - 11.0  
Odor..... Mildly ammoniacal

Levels of addition of **AQUABEAD 525E** range from 2% to 10% of total formula weight. Usage levels will be determined by formula solids, vehicle type and end use requirements.

**AQUABEAD 525E** is ideally suited for use in latex emulsion systems and can be easily stirred in using any type of mixing equipment.

**AQUABEAD 525E** will remain in a stable suspension in water based paints, stains, or coatings.

#### APPLICATIONS:

Aqueous paints, stains and coatings applied over wood, metal, masonry, pressboard or leather. Water reducible flexographic and gravure printing inks and coatings.

All ingredients contained in **AQUABEAD 525E** meet the requirements of various FDA regulations, including 21 CFR 175.300, 175.320, 176.170, 176.180, and 172.210 which permits its use in citrus food coating applications.

TSCA - All components are TSCA listed.

Rev. 2/93

The information contained herein is to the best of our knowledge true and correct and any suggestions are made without guarantee, express or implied, since the conditions of use are beyond our control. Micro Powders, Inc. disclaims any liability incurred in connection with the use of these data or suggestions. Nothing contained herein shall be construed as a recommendation to infringe on any existing patents covering any material or its use.

Certified to ISO 9001:2000

This product or its components do not contain any chemicals subject to any rules or orders under TSCA sections 4, 5, 6, 7, or 8(d).

CONFORMS TO THE FOLLOWING FDA SECTIONS:  
21 CFR 175.300; 175.320; 176.170 (paragraph [c] ); 176.180

CALIFORNIA PROP65 INFORMATION: Not Regulated.

STATE RIGHT TO KNOW INFORMATION:  
NJRTK or CAS # : NJRTK 80100348-5021P  
Refined Paraffin Wax CAS # 63231-60-7  
Vegetable Wax (Copernica Cerifera) CAS # 8015-86-9  
Emulsifiers CAS # N/A  
Ammonium Hydroxide (less than 1%) CAS # 1336-21-6

WHMIS CLASSIFICATION (CANADA): Not subject to WHMIS regulations.

INTERNATIONAL INVENTORY STATUS: This product or its components appear on the following international inventories:

EINECS (monomers); AICS; NICNAS; TCCL; ECL; MITI; PICCS; IECSC; TSCA; DSL

SARA TITLE III: This product is subject to SARA Title III reporting?  
Section 311/312 - Immediate/Acute Health (irritant): YES  
Section 302 - Contains an extremely hazardous substance: NO  
Section 313 - This product does not contain any toxic chemical listed under Sec. 313 of the Emergency Planning and Community Right-To-Know Act of 1986.

CLEAN WATER ACT - Priority Pollutants: Contains no known priority pollutants at concentrations greater than 0.1%.

HEAVY METAL ANALYSIS (Typical) in PPM  
Pb Cd Ba Ag Sb Hg Cr As Se Al Cu Ni Zn  
Not Determined (certified to conform to CONEG Regulations)

===== SECTION 16 - DISCLAIMER =====

QUALITY ASSURANCE PROGRAM CERTIFIED TO ISO-9001:2000

THE DATA SET FORTH IN THIS SDS ARE TYPICAL VALUES (NOT SPECIFICATIONS) BASED ON INFORMATION PROVIDED BY THE SUPPLIERS OF THE RAW MATERIALS AND CHEMICALS USED IN THE MANUFACTURE OF THE AFOREMENTIONED PRODUCT. MICRO POWDERS, INC. MAKES NO WARRANTY WITH RESPECT TO THE ACCURACY OF THE INFORMATION PROVIDED BY THEIR SUPPLIERS AND DISCLAIMS ALL LIABILITY OF RELIANCE THEREOF. MICRO POWDERS, INC. WARRANTS ONLY THAT ITS PRODUCTS CONFORM WITH THEIR PUBLISHED SPECIFICATIONS AND NO OTHER EXPRESS WARRANTY IS MADE WITH REGARD THERETO. WE DO NOT GUARANTEE FAVORABLE RESULTS AND WE ASSUME NO LIABILITY IN CONNECTION WITH THE USE OF THESE PRODUCTS. THEY ARE ALL INTENDED FOR USE BY PERSONS HAVING TECHNICAL SKILL AND KNOWLEDGE, AT THEIR OWN DISCRETION AND RISK.

ISSUE DATE : 7/26/2007

SUPERCEDES : 6/1/2007

REASON FOR CHANGE: Section 9 - Physical State revised

ODOR : Typical Wax Odor  
VAPOR PRESSURE : NIL  
VAPOR DENSITY : Heavier than air.  
BOILING POINT : Not Applicable  
MELTING POINT : Not Applicable  
FLASH POINT : Not Applicable  
DENSITY : 0.94 g/cc  
PH : 9.0 - 10.5  
VISCOSITY : 500 cps @ 25 C  
% VOLATILES : 67 (as water)

===== SECTION 10 - STABILITY AND REACTIVITY =====

STABILITY: Stable at normal conditions.

CONDITIONS TO AVOID: Extreme heat, sparks, and open flame.

INCOMPATIBILITY (AVOID CONTACT WITH): Strong oxidizing agents and amines.

HAZARDOUS DECOMPOSITION PRODUCTS AND/OR BY PRODUCTS:  
Fumes, smoke, carbon dioxide, carbon monoxide and combustible gases may be generated.

HAZARDOUS POLYMERIZATION: Should Not Occur

===== SECTION 11 - TOXICOLOGICAL INFORMATION =====

IMMEDIATE (ACUTE) EFFECTS:  
No data developed.

DELAYED (SUBCHRONIC & CHRONIC) EFFECTS:  
No data developed.

OTHER DATA:  
No other data developed.

===== SECTION 12 - ECOLOGICAL INFORMATION =====

ECOLOGICAL PROFILE:  
No data have been developed on this subject. These polymeric products are not soluble in water. They are not considered biodegradable.

===== SECTION 13 - DISPOSAL CONSIDERATIONS =====

WASTE DISPOSAL METHOD: Assume conformity with applicable disposal regulations.  
Dispose of absorbed material at approved incineration or chemical landfill waste disposal site.

RCRA:  
Is the unused product a RCRA hazardous waste if discarded? No.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

===== SECTION 14 - SPECIAL SHIPPING INFORMATION =====

Printing Ink Components Class 55. DOT Regulated: Non-Hazardous.

===== SECTION 15 - REGULATORY INFORMATION =====

REACH: Registration and compliance pending.  
Micro Powders is aware of the REACH legislation and is actively pursuing registration of the raw materials purchased and used in our products as "Downstream Users." Action items that take effect on June 1, 2007 include the entry into force of REACH. The REACH Articles that go into force on this date are Article 32, Article 67 and Article 115. This product or its components comply with these articles.

T.S.C.A.: This product or its components are listed on the TSCA Inventory.

**SPECIAL FIREFIGHTING PROCEDURES:**

Wear self-contained breathing apparatus and protective clothing approved by NIOSH. Watch footing on floors and stairs because of possible melting and spreading of material. Use spray to keep containers cool.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

Closed containers may rupture (due to build up of pressure) when exposed to extreme heat. Cool drums exposed to flames with water spray. Container may burn and leak in heat of fire.

\*\*\*\*\* SECTION 6 - ACCIDENTAL RELEASE MEASURES \*\*\*\*\*

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Do not let spilled or leaking material enter watercourse. May be toxic to aquatic life. Absorb with oil-dri or similar inert material. Sweep or scrape up and containerize. Rinse affected area thoroughly with water.

See the Regulatory Information section (#15) regarding reporting requirements.

\*\*\*\*\* SECTION 7 - HANDLING AND STORAGE \*\*\*\*\*

**SPECIAL HANDLING AND STORAGE:**

**NORMAL HANDLING:** (Always wear recommended personal protective equipment.)

Avoid breathing fumes from heating operations. Avoid spillage which can cause very slippery conditions on floors. Use good personal hygiene and housekeeping. Keep from freezing.

**STORAGE RECOMMENDATIONS:**

Avoid excessive heat. Do not store near strong oxidizing agents and amines.  
**KEEP FROM FREEZING.**

\*\*\*\*\* SECTION 8 - EXPOSURE CONTROLS/ PERSONAL PROTECTION \*\*\*\*\*

**ENGINEERING CONTROLS:**

Use adequate ventilation during heating processes or if dusty conditions prevail when handling. For storage and ordinary handling, general ventilation is adequate. Provide readily available eye wash stations.

**RESPIRATORY PROTECTION:** No special requirements under normal use conditions. Wear properly fitted NIOSH/MSHA approved respirator whenever exposure to vapor/mist is likely and where ventilation is inadequate.

**VENTILATION:** Face velocity greater than 60 cfm (adequate to capture wax dust or fumes).

**SKIN PROTECTION:** Use impervious gloves to avoid repeated/prolonged skin contact with material. Other protective garments as necessary.

**EYE PROTECTION:** Chemical goggles.

**OTHER PROTECTIVE EQUIPMENT OR CLOTHING:** As needed to prevent repeated/prolonged contact.

**WORK / HYGIENIC PRACTICES:** Wash skin thoroughly with soap and warm water after handling and before smoking, eating or applying makeup. If clothes become contaminated, change to clean clothing. Do not wear contaminated clothing until properly laundered.

**EXPOSURE GUIDELINES**

Powdered forms may generate nuisance particulates upon handling: ACGIH TLV = 10 mg/m<sup>3</sup>.  
OSHA PEL 5mg/m<sup>3</sup>.

\*\*\*\*\* SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES \*\*\*\*\*

**APPEARANCE** : Milky  
**PHYSICAL STATE** : Liquid

**HEALTH HAZARDS (ACUTE & CHRONIC):**

**ACUTE EFFECTS:** Not Determined.

**CHRONIC EFFECTS:** No delayed, subchronic or chronic test data are known.

**N.T.P. CARCINOGEN:** No    **I.A.R.C. CARCINOGEN:** No    **OSHA REGULATED:** No

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** May irritate people with skin problems, asthma and lung diseases. Susceptible individuals may have an allergic reaction.

\*\*\*\*\* SECTION 3 - COMPOSITION / INFORMATION \*\*\*\*\*

COMPONENTS	CAS NUMBER	OSHA PEL
Refined Paraffin Wax	CAS # 63231-60-7	
Vegetable Wax (Copernica Cerifera)	CAS # 8015-86-9	
Emulsifiers	CAS # N/A	
Ammonium Hydroxide (less than 1%)	CAS # 1336-21-6	5mg/m3 (dust)

Trace impurities and additional material names not listed above may also appear in Regulatory Information section (#15) towards the end of the MSDS. These materials may be listed for local "Right to Know" compliance and for other reasons.

\*\*\*\*\* SECTION 4 - FIRST AID MEASURES \*\*\*\*\*

**IF IN EYES:** Flush with copious amounts of water for at least 15 minutes. If irritation persists, consult a physician.

**IF ON SKIN:** For skin irritation, wash skin with soap and water and use emollient skin cream.

**IF INHALED:** In case of inhalation or suspected inhalation, move the patient at once to fresh air and call a physician. Keep patient absolutely quiet and start oxygen inhalation through suitable equipment. If breathing has stopped or is labored give assisted respiration (e.g. mouth-to-mouth). Supplemental oxygen may be indicated. Move patient to fresh air.

**IF INGESTED:** If swallowed, call a physician immediately. Induce vomiting or remove stomach contents by gastric suction only as directed by medical personnel. Never give anything by mouth to an unconscious person.

**INSTRUCTION FOR PHYSICIANS :**

No specific advice. Treat according to symptoms present.

\*\*\*\*\* SECTION 5 - FIRE FIGHTING MEASURES \*\*\*\*\*

**FLAMMABLE PROPERTIES**

**FLASH POINT** : Not Applicable  
**METHOD USED** : ASTM D-92 COC  
**AUTO IGNITION** : Not Determined

**FLAMMABLE LIMITS BY VOLUME % IN AIR**

**LOWER** : Not Determined  
**UPPER** : Not Determined

**OSHA FLAMMABILITY CLASS** : Non combustible liquid.

**EXTINGUISHING MEDIA:** Carbon Dioxide, dry chemical or fine water spray. Avoid water stream on molten burning material as it may scatter and spread the fire.

Z525



# MICRO POWDERS, INC.

580 WHITE PLAINS ROAD • TARRYTOWN, NY 10691  
TEL 914-793-4058 • FAX 914-472-7098 • EMAIL mpi@micropowders.com

## SAFETY DATA SHEET

This SDS complies with REACH and GHS regulations as of the date revised.

----- SECTION 1 - IDENTIFICATION OF SUBSTANCE AND MANUFACTURER -----

PRODUCT NAME: AquaBead 525E

MSDS NUMBER : AB-525E

MANUFACTURER'S NAME: Micro Powders, Inc.  
ADDRESS : 580 White Plains Road  
Tarrytown, NY 10591

CHEMTREC PHONE : 800-424-9300      DATE PRINTED : 7/26/2007  
INFORMATION PHONE : 914-793-4058      NAME OF PREPARER : Warren Pushaw

----- SECTION 2 - HAZARDS IDENTIFICATION -----

\*\*\*\*\*  
EMERGENCY OVERVIEW

This material is an aqueous liquid and as such does not represent a fire hazard or immediate health hazard when properly handled. Refer to the sections below concerning exposure risks and symptoms.

\*\*\*\*\*

HMIS CODES:            H P R P  
                          1 0 0 C

**INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE:** The risk of exposure to hazardous concentrations of vapor under normal working conditions in a well ventilated space is minimal. However, conditions such as spraying, or sudden release of hot liquid, which generate an aerosol, mists or fog should be avoided. Inhalation of aerosol, mist or fog may cause harm if inhaled. Inhalation of dust may cause respiratory irritation.

**EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE:** Particulates may cause mechanical eye irritation. Flush eyes with copious amounts of water for at least 15 minutes.

**SKIN CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE:** Mild dermal irritant. Exposure may lead to itching, scaling, drying and irritation of skin.

**INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE:** Generally non toxic unless large quantities are ingested.

AQUASLIP(TM) 952



Material Safety Data Sheet  
AQUASLIP(TM) 952

Prepared according to 29CFR 1910.1200.

1	Chemical Product and Company Identification
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*The Lubrizol Corporation  
29400 Lakeland Boulevard  
Wickliffe, Ohio 44092  
Tel: (440) 943-4200*

<b>Product Trade Name</b>	AQUASLIP(TM) 952
<b>CAS Number</b>	Not applicable for mixtures.
<b>Synonyms</b>	None.
<b>Generic Chemical Name</b>	Mixture.
<b>Product Type</b>	Packaging
<b>Preparation/Revision Date</b>	26 May 2012
<b>Transportation Emergency Phone No.</b>	FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)
<b>MSDS No.</b>	31664718-1223525-502231-102103

2	Hazards Identification
---	------------------------

<b>Appearance</b>	Translucent liquid.
<b>Odor</b>	Mild
<b>Principal Hazards</b>	Warning <ul style="list-style-type: none"> <li>• Harmful if inhaled.</li> <li>• Component(s) known to cause chronic human health effects.</li> <li>• May cause eye irritation.</li> <li>• May cause skin irritation.</li> </ul>
<b>Target Organs:</b>	Blood

See Section 11 for complete health hazard information.

3	Composition/Information on Ingredients
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**Hazardous Ingredients**

Butyl cellosolve	111-76-2	From 1 to 4.9 percent	N/E
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(N/E) - None established

4	First Aid Measures
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<b>Eyes</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.
<b>Skin</b>	Wash with soap and water. Remove contaminated clothing. If skin irritation occurs, get medical attention.
<b>Inhalation</b>	Remove exposed person to fresh air if adverse effects are observed.
<b>Oral</b>	Treat symptomatically. Get medical attention.
<b>Additional Information</b>	Note to physician: Treat symptomatically.

5	Fire Fighting Measures
---	------------------------

<b>Flash Point</b>	>= 100 °C, 212 °F PMCC (Minimum)
<b>Extinguishing Media</b>	CO <sub>2</sub> , dry chemical, foam, water spray, water fog.
<b>Firefighting Procedures</b>	Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may be ineffective fighting fires. Use water to cool containers exposed to fire.
<b>Unusual Fire &amp; Explosion Hazards</b>	Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional information.



# AQUASLIP(TM) 952

Viscosity	12.5 Centipoise (25 °C)
Odor Threshold	Not determined.
Boiling Point	~ 100 °C, ~ 212 °F(Typical)
Pour Point Temperature	Not determined.
Melting / Freezing Point	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	Stability and Reactivity
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<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	Strong acids. Alkalis. Strong oxidizing agents.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids.
<b>Conditions to Avoid</b>	Do not freeze.

11	Toxicological Information
----	---------------------------

-- ACUTE EXPOSURE --

<b>Eye Irritation</b>	Weak to moderate eye irritant. Does not meet EU R36 criteria. Based on data from similar materials. Vapors may cause irritation.
<b>Skin Irritation</b>	May cause mild skin irritation. Does not meet Canadian D2B or EU R38 criteria. Based on data from similar materials. Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, and cracking of the skin.
<b>Respiratory Irritation</b>	If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract. Based on data from similar materials.
<b>Dermal Toxicity</b>	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.
<b>Inhalation Toxicity</b>	The LCS0 (1 hr.) in rats for vapors of this material is > 200 mg/l. Based on data from components or similar materials. High concentrations may cause headaches, dizziness, weakness, irritability and other behavioral changes, nausea, and vomiting.
<b>Oral Toxicity</b>	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Ingestion of this material may cause headache, dizziness, uncoordination, and general weakness. Ingestion may cause red blood cell hemolysis and possible liver and kidney injury.
<b>Dermal Sensitization</b>	No data available to indicate product or components may be a skin sensitizer.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

-- CHRONIC EXPOSURE --

<b>Chronic Toxicity</b>	Repeated overexposure to butyl cellosolve may cause hemolysis of the red blood cells leading to possible liver and kidney damage.
<b>Carcinogenicity</b>	The National Toxicology Program (NTP) completed a two year inhalation chronic toxicity/carcinogenicity study that indicated butyl cellosolve has some evidence of carcinogenic activity in male and female mice, equivocal evidence in female rats and no evidence in male rats. The relevance of this data to human workplace exposure has not been established.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive Toxicity</b>	Reproductive effects were seen in laboratory animals exposed to butyl cellosolve only at doses that produced significant toxicity to the parental animals.
<b>Teratogenicity</b>	Butyl cellosolve causes fetotoxicity in lab animals at doses which are maternally toxic.

-- ADDITIONAL INFORMATION --

<b>Other</b>	Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Human red blood cells have been shown to be significantly less sensitive to hemolysis than those of rodents and rabbits.
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12	Ecological Information
----	------------------------

-- ENVIRONMENTAL TOXICITY --

<b>Freshwater Fish Toxicity</b>	Not determined.
<b>Freshwater Invertebrates Toxicity</b>	Not determined.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

-- ENVIRONMENTAL FATE --

# AQUASLIP(TM) 952

**Biodegradation** Adequate data is not available to estimate the biodegradation potential of this material.  
**Bioaccumulation** 25% or greater of the components display no potential to bioconcentrate.  
**Soil Mobility** Not determined.

13	<b>Disposal Considerations</b>
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**Waste Disposal** This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14	<b>Transport Information</b>
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ICAO/IATA I	Not regulated.
ICAO/IATA II	Not regulated.
IMDG	Not regulated.
IMDG EMS Fire	Not applicable.
IMDG EMS Spill	Not applicable.
IMDG MFAG	Not applicable.
MARPOL Annex II	Not determined.
USCG Compatibility	Not determined.
U.S. DOT Bulk	Not regulated.
DOT NAERG	Not applicable.
U.S. DOT (Intermediate)	Not regulated.
U.S. DOT Intermediate NAERG	Not applicable.
U.S. DOT Non-Bulk	Not regulated.
U.S. DOT Non-Bulk NAERG	Not applicable.
Canada	Not regulated.
Mexico	Not regulated.
Bulk Quantity	85000 KG, 187391 lbs.
Intermediate Quantity	11000 KG, 24251 lbs.
Non-Bulk Quantity	400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	<b>Regulatory Information</b>
----	-------------------------------

-- Global Chemical Inventories --

<b>USA</b>	All components of this material are on the US TSCA Inventory or are exempt.
<b>Other TSCA Reg.</b>	Section 8D (2-Butoxyethanol).
<b>EU</b>	To obtain information on the REACH compliance status of this product, please visit <a href="http://Lubrizol.com/REACH">Lubrizol.com/REACH</a> , or e-mail us at <a href="mailto:REACH_MSDS_INQUIRIES@Lubrizol.com">REACH_MSDS_INQUIRIES@Lubrizol.com</a>
<b>Japan</b>	All components are in compliance with the Chemical Substances Control Law of Japan.
<b>Australia</b>	This product requires notification before sale in Australia.
<b>New Zealand</b>	May require notification before sale under New Zealand regulations.
<b>Canada</b>	All components are in compliance with the Canadian Environmental Protection Act and are present on the Domestic Substances List.
<b>Switzerland</b>	All components are in compliance with the Environmentally Hazardous Substances Ordinance in Switzerland.
<b>Korea</b>	All components are in compliance in Korea.
<b>Philippines</b>	All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).
<b>China</b>	All components of this product are listed on the Inventory of Existing Chemical Substances in China.
<b>Taiwan</b>	May require notification before sale in Taiwan.

-- Other U.S. Federal Regulations --

<b>SARA Ext. Haz. Subst.</b>	This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.									
<b>SARA Section 313</b>	2.4 % Glycol ether									
<b>SARA 311 Classifications</b>	<table border="1"> <tr><td>Acute Hazard</td><td>Yes</td></tr> <tr><td>Chronic Hazard</td><td>Yes</td></tr> <tr><td>Fire Hazard</td><td>No</td></tr> <tr><td>Reactivity Hazard</td><td>No</td></tr> </table>	Acute Hazard	Yes	Chronic Hazard	Yes	Fire Hazard	No	Reactivity Hazard	No	
Acute Hazard	Yes									
Chronic Hazard	Yes									
Fire Hazard	No									
Reactivity Hazard	No									
<b>CERCLA Hazardous Substances</b>	None known.									

-- State Regulations --

**AQUASLIP(TM) 952**  
 Cal. Prop. 65

This product contains chemical(s) known to the state of California to cause cancer and/or birth defects. Call 440-943-4200 for additional information.

**- Product Registrations -**

**U.S. Fuel Registration** Not applicable.  
**Finnish Registration Number** Not Registered  
**Swedish Registration Number** Not Registered  
**Norwegian Registration Number** Not Registered  
**Danish Registration Number** Not Registered  
**Swiss Registration Number** Not Registered  
**Italian Registration Number** Not Registered

**- Other / International -**

**Miscellaneous Regulatory Information** Not determined.

16	Other Information
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**US NFPA Codes**

Health	Fire	Reactivity	Special
1	1	0	N/E

(N/E) - None established

**HMIS Codes**

Health	Fire	Reactivity
1*	1	0

**Precautionary Labels**

- Warning.
- Harmful if inhaled.
  - Component(s) known to cause chronic human health effects.
  - May cause eye irritation.
  - May cause skin irritation.

**Revision Indicators**

Section: 5 Flash point. Changed: 26 May 2012  
 Section: 9 Flash point. Changed: 26 May 2012

*As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.*

# MATERIAL SAFETY DATA SHEET



**Bayer MaterialScience**

**Bayer MaterialScience LLC**  
Product Safety & Regulatory Affairs  
100 Bayer Road  
Pittsburgh, PA 15205-9741  
USA

## TRANSPORTATION EMERGENCY

CALL CHEMTREC: (800) 424-9300  
INTERNATIONAL: (703) 527-3887

## NON-TRANSPORTATION

Emergency Phone: Call Chemtrec  
Information Phone: (800) 662-2927

### 1. Product and Company Identification

**Product Name:** BAYMEDIX FD103  
**Material Number:** 81217645

### 2. Hazards Identification

#### Emergency Overview

**Color:** White **Form:** liquid **Odor:** slight inherent odour.  
Product poses little or no hazard if spilled. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Irritating gases/fumes may be given off during burning or thermal decomposition.

#### Potential Health Effects

**Primary Routes of Entry:** Skin Contact, Eye Contact

**Medical Conditions Aggravated by Exposure:** None known.

#### HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

##### General Effects of Exposure

##### Acute Effects of Exposure

**For Product:** BAYMEDIX FD103

Not expected to cause any adverse acute health effects.

##### Chronic Effects of Exposure

**For Product:** BAYMEDIX FD103

Not expected to cause any adverse chronic health effects.

##### Carcinogenicity:

No Carcinogenic substances as defined by IARC, NTP and/or OSHA

### 3. Composition/Information on Ingredients

#### Hazardous components

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

#### OTHER INGREDIENTS

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
0.1 - 1%	Acetone	67-64-1

The above potentially hazardous ingredient(s) are contained at levels below disclosure requirements and are provided for informational purposes only.

### 4. First aid measures

#### Eye contact

In case of contact, flush eyes with plenty of lukewarm water. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Get medical attention if irritation develops.

#### Skin contact

In case of skin contact, wash affected areas with soap and water. Get medical attention if irritation develops. Thoroughly clean shoes before reuse. Wash clothing before reuse.

#### Inhalation

If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.

#### Ingestion

If ingested, do not induce vomiting unless directed to do so by medical personnel. Get medical attention.

### 5. Firefighting measures

**Suitable extinguishing media:** Carbon dioxide (CO<sub>2</sub>), Dry chemical, Foam, water spray for large fires.

#### Special Fire Fighting Procedures

Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture.

### 6. Accidental release measures

#### Spill and Leak Procedures

Dike or dam spilled material and control further spillage, if possible. Prevent from entering open drains and waterways. Cover spill with inert material (e. g., dry sand or earth) and collect for proper disposal. Ventilate area to remove vapors or dust.

## 7. Handling and storage

### Storage temperature:

**minimum:** 5 °C (41 °F)  
**maximum:** 40 °C (104 °F)

### Storage period

6 Months: after receipt of material by customer

### Handling/Storage Precautions

Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling. Keep container closed when not in use. Protect from freezing.

### Further Info on Storage Conditions

Store separate from food products. Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard 29 CFR 1910.1200.

## 8. Exposure controls/personal protection

Country specific exposure limits have not been established or are not applicable

### Acetone (67-64-1)

US. ACGIH Threshold Limit Values  
Time Weighted Average (TWA): 500 ppm  
US. ACGIH Threshold Limit Values  
Short Term Exposure Limit (STEL): 750 ppm  
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)  
PEL: 1,000 ppm, 2,400 mg/m<sup>3</sup>

### Industrial Hygiene/Ventilation Measures

General dilution and local exhaust as necessary to control airborne vapors, mists, dusts and thermal decomposition products below appropriate airborne concentration standards/guidelines. Thermal processing operations should be ventilated to control gases and fumes given off during processing. Curing ovens must be ventilated to prevent the build up of explosive atmospheres and to prevent off gases from entering the work place.

### Respiratory protection

None required under normal conditions of use., NIOSH approved air-supplied respirator during die cleaning, high temperature processing or when thermal decomposition is suspected.

### Hand protection

Permeation resistant gloves., Butyl rubber gloves., Nitrile rubber gloves.

### Eye protection

Safety glasses with side-shields

### Skin and body protection

Permeation resistant clothing, Gloves, long sleeved shirts and pants.

### Additional Protective Measures

Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product.

## 9. Physical and chemical properties

<b>Form:</b>	liquid
<b>Color:</b>	White
<b>Odor:</b>	slight inherent odour
<b>pH:</b>	ca. 7.4 (Determined in a 10 % aqueous solution)
<b>Boiling point/boiling range:</b>	ca. 100 °C (212 °F) (DIN 53171)
<b>Flash point:</b>	(DIN EN ISO 2719) No flash point up to initial boiling point.
<b>Density:</b>	ca. 1.05 g/cm <sup>3</sup> @ 20 °C (68 °F) (DIN 51757)
<b>Auto-ignition temperature:</b>	ca. 415 °C (779 °F) (DIN 51794)
<b>Viscosity, dynamic:</b>	ca. 226 mPa.s @ 20 °C (68 °F) (DIN 53019)
<b>Pour point:</b>	ca. 3 °C (37.4 °F) (ISO 3016)

## 10. Stability and reactivity

### Hazardous Reactions

Hazardous polymerisation does not occur.

### Stability

Stable

### Materials to avoid

Water reactives

### Conditions to avoid

Protect from freezing.

### Hazardous decomposition products

By Fire and Thermal Decomposition: Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke.

## 11. Toxicological information

### Toxicity Data for BAYMEDIX FD103

#### Toxicity Note

No data available for this product.

## 12. Ecological information

### Ecological Data for BAYMEDIX FD103

#### Additional Ecotoxicological Remarks

No data available for this product.

## 13. Disposal considerations

### Waste Disposal Method

Waste disposal should be in accordance with existing federal, state and local environmental control laws.

### Empty Container Precautions

Recondition or dispose of empty container in accordance with governmental regulations.

#### 14. Transport information

##### Land transport (DOT)

Non-Regulated

##### Sea transport (IMDG)

Non-Regulated

##### Air transport (ICAO/IATA)

Non-Regulated

#### 15. Regulatory information

##### United States Federal Regulations

OSHA Hazcom Standard Rating: Non-Hazardous

US. Toxic Substances Control Act: This product is excluded from TSCA regulation by Section 3 (2)(B)(vi) when used for FDA application.

US. EPA CERCLA Hazardous Substances (40 CFR 302):

##### Components

None

SARA Section 311/312 Hazard Categories:

Non-hazardous under Section 311/312

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):

##### Components

None

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:

##### Components

None

##### US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261)

Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

##### State Right-To-Know Information

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

##### Weight percent

>=1%

##### Components

Polyurethane Resin

##### CAS-No.

CAS# is a trade secret

>=1%

Water

7732-18-5

**New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous Substances Lists:**

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
0.1 - 1%	Acetone	67-64-1

**California Prop. 65:**

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

**16. Other information**

**NFPA 704M Rating**

Health	0
Flammability	1
Reactivity	0
Other	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

**HMIS Rating**

Health	0
Flammability	1
Physical Hazard	0

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

\* = Chronic Health Hazard

The method of hazard communication for Bayer MaterialScience LLC is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by Bayer MaterialScience LLC as a customer service.

Contact person: Product Safety Department  
Telephone: (412) 777-2835  
MSDS Number: 112000049178  
Version Date: 04/17/2013  
Report version: 1.0

This information is furnished without warranty, express or implied. This information is believed to be accurate to the best knowledge of Bayer MaterialScience LLC. The information in this MSDS relates only to the specific material designated herein. Bayer MaterialScience LLC assumes no legal responsibility for use of or reliance upon the information in this MSDS.

# MATERIAL SAFETY DATA SHEET



**Bayer MaterialScience LLC**  
Product Safety & Regulatory Affairs  
100 Bayer Road  
Pittsburgh, PA 15205-9741  
USA

## TRANSPORTATION EMERGENCY

CALL CHEMTREC: (800) 424-9300  
INTERNATIONAL: (703) 527-3887

## NON-TRANSPORTATION

Emergency Phone: Call Chemtrec  
Information Phone: (800) 662-2927

### 1. Product and Company Identification

**Product Name:** BAYMEDIX FP520  
**Material Number:** 81598096  
**Chemical Family:** Aliphatic Polyisocyanate

### 2. Hazards Identification

#### Emergency Overview

**Warning Color:** Yellow **Form:** liquid **Odor:** almost odourless.  
Toxic gases/fumes may be given off during burning or thermal decomposition. Closed container may forcibly rupture under extreme heat or when contents have been contaminated with water. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Causes respiratory tract irritation. May cause allergic respiratory reaction. Harmful if inhaled. Respiratory sensitizer. Lung damage and respiratory sensitization may be permanent. Causes skin irritation. May cause allergic skin reaction. Skin sensitizer. Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction. Causes eye irritation. May cause lung damage.

#### Potential Health Effects

**Primary Routes of Entry:** Skin Contact, Inhalation, Eye Contact

**Medical Conditions Aggravated by Exposure:** Skin Allergies, Eczema, Asthma, Respiratory disorders

### HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

#### Inhalation

##### Acute Inhalation

**For Product:** BAYMEDIX FP520

Diisocyanate or polyisocyanate vapors or mist at concentrations above the exposure limits or guidelines can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) with symptoms of runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing difficulty). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the exposure limits or guidelines with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the exposure limits or guidelines may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity

pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

#### **Chronic Inhalation**

**For Product:** BAYMEDIX FP520

As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to diisocyanates or polyisocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to diisocyanates or polyisocyanates at levels well below the exposure limits or guidelines. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be delayed up to several hours after exposure. Extreme asthmatic reactions can be life threatening. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Sensitization can be permanent. Chronic overexposure to diisocyanates has also been reported to cause lung damage (including fibrosis, decrease in lung function) that may be permanent.

#### **Skin**

##### **Acute Skin**

**For Product:** BAYMEDIX FP520

Causes irritation with symptoms of reddening, itching, and swelling. Can cause sensitization. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove.

##### **Chronic Skin**

**For Product:** BAYMEDIX FP520

Prolonged contact can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates.

#### **Eye**

##### **Acute Eye**

**For Product:** BAYMEDIX FP520

Causes irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor may cause irritation with symptoms of burning and tearing.

##### **Chronic Eye**

**For Product:** BAYMEDIX FP520

Prolonged vapor contact may cause conjunctivitis.

#### **Ingestion**

##### **Acute Ingestion**

**For Product:** BAYMEDIX FP520

May cause irritation; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

#### **Carcinogenicity:**

No Carcinogenic substances as defined by IARC, NTP and/or OSHA

### **3. Composition/Information on Ingredients**

#### **Hazardous components**

Residual diisocyanate monomer content:, <0.20%

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
>=95%	Aliphatic Polyisocyanate based on Hexamethylene Diisocyanate (HDI)	CAS# is a trade secret
<0.2%	Hexamethylene-1,6-Diisocyanate	822-06-0

#### 4. First aid measures

##### Eye contact

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Use lukewarm water if possible. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Then remove contact lenses, if easily removable, and continue eye irrigation for not less than 15 minutes. Get medical attention if irritation develops.

##### Skin contact

Immediately remove contaminated clothing and shoes. Wash off with soap and water. Use lukewarm water if possible. Wash contaminated clothing before reuse. For severe exposures, immediately get under safety shower and begin rinsing. Get medical attention if irritation develops and persists.

##### Inhalation

Move to an area free from further exposure. Get medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop and may be immediate or delayed up to several hours. Extreme asthmatic reactions can be life threatening.

##### Ingestion

Do NOT induce vomiting. Wash mouth out with water. Do not give anything by mouth to an unconscious person. Get medical attention.

##### Notes to physician

Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation as needed. Workplace vapors could produce reversible corneal epithelial edema impairing vision. Skin: This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn. Ingestion: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the compound. Inhalation: Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate.

#### 5. Firefighting measures

**Suitable extinguishing media:** Dry chemical, Carbon dioxide (CO<sub>2</sub>), Foam, water spray for large fires.

##### Special Fire Fighting Procedures

Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Exposure to heated diisocyanate can be extremely dangerous.

##### Unusual Fire/Explosion Hazards

Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO<sub>2</sub> formed). Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between

water and hot diisocyanate can be vigorous.

## 6. Accidental release measures

### Spill and Leak Procedures

Evacuate non-emergency personnel. Isolate the area and prevent access. Remove ignition sources. Notify management. Put on protective equipment. Control source of the leak. Ventilate. Contain the spill to prevent spread into drains, sewers, water supplies, or soil. Call ChemTrec at 800-424-9300 or 703-527-3887 for assistance and advice. Major Spill or Leak (Standing liquid): To minimize vapor, cover the spillage with fire fighting foam (AFFF). Released material may be pumped into closed, but not sealed, metal container for disposal. Process can generate heat. Minor Spill or Leak (Wet surface): Cover spill area with suitable absorbent material (Kitty Litter, Oil-Dri®, etc). Saturate absorbent material with neutralization solution and mix. Wait 15 minutes. Collect material in open-head metal containers. Repeat applications of decontamination solution, with scrubbing, followed by absorbent until the surface is decontaminated. Check for residual surface contamination. Swype® test kits have been used for this purpose. Apply lid loosely and allow containers to vent for 72 hours to let carbon dioxide (CO<sub>2</sub>) escape.

### Additional Spill Procedures/Neutralization

Neutralization solutions:

- (1) Colorimetric Laboratories Inc. (CLI) decontamination solution.
- (2) A mixture of 75% water, 20% non-ionic surfactant (e.g. Plurafac SL-62, Tergitol TMN-10) and 5% n-propanol.
- (3) A mixture of 80% water, 20% non-ionic surfactant (e.g. Plurafac SL-62, Tergitol TMN-10).
- (4) A mixture of 90% water, 3-8% ammonium hydroxide or concentrated ammonia, and 2% liquid detergent.

Bayer requires that CHEMTREC be immediately notified (800-424-9300) when this product is unintentionally released from its container during its course of distribution, regardless of the amount released. Distribution includes transportation, storage incidental to transportation, loading and unloading. Such notification must be immediate and made by the person having knowledge of the release.

## 7. Handling and storage

### Storage temperature:

minimum: 0 °C (32 °F)  
maximum: 30 °C (86 °F)

### Storage period

6 Months @ 25 °C (77 °F): after receipt of material by customer

### Handling/Storage Precautions

Do not breathe vapors, mists, or dusts. Use adequate ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

### Further Info on Storage Conditions

Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard 29 CFR 1910.1200. Store separate from food products.

## 8. Exposure controls/personal protection

### Hexamethylene-1,6-Diisocyanate (822-06-0)

US. ACGIH Threshold Limit Values  
Time Weighted Average (TWA): 0.005 ppm  
Bayer Exposure Limit  
Ceiling Limit Value: 0.02 ppm

### Industrial Hygiene/Ventilation Measures

Good industrial hygiene practice dictates that worker protection should be achieved through engineering controls, such as ventilation, whenever feasible. When such controls are not feasible to achieve full protection, the use of respirators and other personal protective equipment is mandated. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Curing ovens must be ventilated to prevent emissions into the workplace. If oven off-gases are not vented properly (i.e. they are released into the work area), it is possible to be exposed to airborne monomeric HDI.

### Respiratory protection

A respirator that is recommended or approved for use in isocyanate-containing environments (air-purifying or fresh air-supplied) may be necessary for spray applications or other situations such as high temperature use which may produce inhalation exposures. A supplied-air respirator (either positive pressure or continuous flow-type) is recommended. Before an air-purifying respirator can be used, air monitoring must be performed to measure airborne concentrations of HDI monomer and HDI polyisocyanate. Specific conditions under which air-purifying respirators can be used are outlined in the following sections. Observe OSHA regulations for respirator use (29 CFR 1910.134). **SPRAY APPLICATION:** A. Good industrial hygiene practice dictates that when isocyanate-based coatings are spray applied, some form of respiratory protection should be worn. During the spray application of coatings containing this product the use of a supplied-air (either positive pressure or continuous flow-type) respirator is mandatory when ONE OR MORE of the following conditions exists: -the airborne isocyanate concentrations are not known; or -the airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); or -the airborne polyisocyanate (polymeric, oligomeric) concentrations exceed 5 mg/m<sup>3</sup> averaged over 8 hours or 10 mg/m<sup>3</sup> averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits); or -operations are performed in a confined space (See OSHA Confined Space Standard, 29 CFR 1910.146). A properly fitted air-purifying (combination organic vapor and particulate) respirator, proven by test to be effective in isocyanate-containing spray paint environments, and used in accordance with all recommendations made by the manufacturer, can be used when ALL of the following conditions are met: -The airborne isocyanate monomer concentrations are known to be below 0.05 ppm averaged over eight (8) hours (10 times 8 hour TWA exposure limit); and -the airborne polyisocyanate (polymeric, oligomeric) concentrations are known to be below 5 mg/m<sup>3</sup> averaged over 8 hours or 10 mg/m<sup>3</sup> averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits) and - a NIOSH-certified End of Service Life Indicator or a change schedule based upon objective information or data is used to ensure that cartridges are replaced before the end of their service life. In addition, prefilters should be changed whenever breathing resistance increases due to particulate buildup. **NON-SPRAY OPERATIONS:** A. During non-spray operations such as mixing, batch-making, brush or roller application, etc., at elevated temperatures (for example, heating of material or application to a hot substrate), it is possible to be exposed to airborne isocyanate vapors. Therefore, when the coatings system will be applied in a non-spray manner, a supplied-air (either positive pressure or continuous flow-type) respirator is mandatory when ONE OR MORE of the following conditions exists: - the airborne isocyanate concentrations are not known; or - the airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); or - the airborne polyisocyanate (polymeric, oligomeric) concentrations exceed 5 mg/m<sup>3</sup> averaged over 8 hours or 10 mg/m<sup>3</sup> averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits); or - operations are

performed in a confined space (See OSHA Confined Space Standard, 29 CFR 1910.146). A properly fitted air-purifying (combination organic vapor and particulate) respirator, proven by test to be effective in isocyanate-containing paint environments, and used in accordance with all recommendations made by the manufacturer, can be used when ALL of the following conditions are met: -the airborne concentrations of the isocyanate monomer are below 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); and - the airborne polyisocyanate (polymeric, oligomeric) concentrations are known to be below 5 mg/m<sup>3</sup> averaged over eight (8) hours or 10 mg/m<sup>3</sup> averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits) and - a NIOSH-certified End of Service Life Indicator or a change schedule based upon objective information or data is used to ensure that cartridges are replaced before the end of their service life. In addition, prefilters should be changed whenever breathing resistance increases due to particulate buildup.

#### **Hand protection**

Gloves should be worn., Nitrile rubber gloves., Butyl rubber gloves., Neoprene gloves

#### **Eye protection**

When directly handling liquid product, eye protection is required. Examples of eye protection include a chemical safety goggle, or chemical safety goggle in combination with a full face shield when there is a greater risk of splash.

#### **Skin and body protection**

Avoid all skin contact. Depending on the conditions of use, cover as much of the exposed skin area as possible with appropriate clothing to prevent skin contact., Gloves, long sleeved shirts and pants.

#### **Medical Surveillance**

All applicants who are assigned to an isocyanate work area should undergo a pre-placement medical evaluation. A history of eczema or respiratory allergies such as hay fever, are possible reasons for medical exclusion from isocyanate areas. Applicants who have a history of adult asthma should be restricted from work with isocyanates. Applicants with a history of prior isocyanate sensitization should be excluded from further work with isocyanates. A comprehensive annual medical surveillance program should be instituted for all employees who are potentially exposed to diisocyanates. Once a worker has been diagnosed as sensitized to any isocyanate, no further exposure can be permitted. Refer to the Bayer pamphlet (Medical Surveillance Program for Isocyanate Workers) for additional guidance.

#### **Additional Protective Measures**

Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product. Follow all label instructions.

### **9. Physical and chemical properties**

<b>Form:</b>	liquid
<b>Color:</b>	Yellow
<b>Odor:</b>	almost odourless
<b>Boiling point/boiling range:</b>	not applicable, decomposition
<b>Flash point:</b>	> 250 °C (482 °F) (DIN EN 22719)
<b>Density:</b>	ca. 1.16 g/cm <sup>3</sup> @ 20 °C (68 °F) (DIN EN ISO 2811)
<b>Auto-ignition temperature:</b>	ca. 465 °C (869 °F) (DIN 51794)
<b>Viscosity, dynamic:</b>	ca. 2,800 mPa.s @ 23 °C (73.4 °F) (DIN EN ISO 3219/A.3)
<b>pour point:</b>	ca. -15 °C (5 °F)

### **10. Stability and reactivity**

#### **Hazardous Reactions**

Contact with moisture, other materials that react with isocyanates, or temperatures above 350 F (177 C), may cause polymerization

**Stability**

Stable under normal conditions of use and storage.

**Materials to avoid**

Water, Amines, Strong bases, Alcohols, Copper alloys

**Conditions to avoid**

Heat, flames and sparks. Protect from freezing.

**Hazardous decomposition products**

By Fire and High Heat: Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke., Hydrogen cyanide, Isocyanate, Isocyanic Acid, Other undetermined compounds

**11. Toxicological information****Toxicity Data for BAYMEDIX FP520****Acute oral toxicity**

LD50: > 2,000 mg/kg (Rat)

**Skin irritation**

rabbit, OECD Test Guideline 404, Exposure Time: 4 h, Slightly irritating

**Eye irritation**

rabbit, OECD Test Guideline 405, non-irritant

**Sensitisation**

Buehler Test: non-sensitizer (Guinea pig, OECD Test Guideline 406)

Based on a similar product.

inhalation: non-sensitizer (Guinea pig)

Based on a similar product.

Maximisation Test (GPMT): sensitizer (Guinea pig)

Based on a similar product.

**Mutagenicity**

Genetic Toxicity in Vitro:

Ames: negative

**12. Ecological information****Ecological Data for BAYMEDIX FP520****Biodegradation**

2 %, Exposure time: 28 d, Not readily biodegradable.

**Acute and Prolonged Toxicity to Fish**

LC50: 28.3 mg/l (Zebra fish (Brachydanio rerio), 96 h)

Based on a similar product.

**Acute Toxicity to Aquatic Invertebrates**

EC50: >= 100 mg/l (Water flea (Daphnia magna), 45 h)

Based on a similar product.

**Toxicity to Aquatic Plants**

EC50: > 100 mg/l, (Green algae (Desmodesmus subspicatus), 72 h)

Based on a similar product.

**Toxicity to Microorganisms**

EC50: > 10,000 mg/l, (Activated sludge microorganisms, 3 h)

Based on a similar product.

**13. Disposal considerations**

**Waste Disposal Method**

Waste disposal should be in accordance with existing federal, state and local environmental control laws. Incineration is the preferred method.

**Empty Container Precautions**

Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal.

**14. Transport information**

Land transport (DOT)

Non-Regulated

Sea transport (IMDG)

Non-Regulated

Air transport (ICAO/IATA)

Non-Regulated

**15. Regulatory information**

United States Federal Regulations

**OSHA Hazcom Standard Rating:** Hazardous

**US. Toxic Substances Control Act:** This product is excluded from TSCA regulation by Section 3 (2)(B)(vi) when used for FDA application.

**US. EPA CERCLA Hazardous Substances (40 CFR 302):**

Components

None

**SARA Section 311/312 Hazard Categories:**

Acute Health Hazard, Chronic Health Hazard

**US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):**

Components

None

**US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III  
Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:**

**Components**

None

**State Right-To-Know Information**

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

**Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:**

**Weight percent**

**Components**

**CAS-No.**

≥95%

Aliphatic Polyisocyanate based on  
Hexamethylene Diisocyanate (HDI)

CAS# is a trade secret

**New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous  
Substances Lists:**

**Weight percent**

**Components**

**CAS-No.**

<0.2%

Hexamethylene-1,6-Diisocyanate

822-06-0

**MA Right to Know Extraordinarily Hazardous Substance List:**

**Weight percent**

**Components**

**CAS-No.**

85 - 90 ppm

Dibutyl Phosphate

107-66-4

**California Prop. 65:**

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

**16. Other information**

**NFPA 704M Rating**

Health	2
Flammability	1
Reactivity	1
Other	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

**HMIS Rating**

Health	2*
Flammability	1
Physical Hazard	1

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

\* = Chronic Health Hazard

The method of hazard communication for Bayer MaterialScience LLC is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by Bayer MaterialScience LLC as a customer service.

The handling of products containing reactive HDI polyisocyanate/prepolymer and/or monomeric HDI requires appropriate protective measures referred to in this MSDS. These products are therefore

recommended only for use in industrial or trade (commercial) applications. They are not suitable for use in Do-It-Yourself applications.

Contact person: Product Safety Department  
Telephone: (412) 777-2835  
MSDS Number: 112000051542  
Version Date: 04/17/2014  
Report version: 1.3

This information is furnished without warranty, express or implied. This information is believed to be accurate to the best knowledge of Bayer MaterialScience LLC. The information in this MSDS relates only to the specific material designated herein. Bayer MaterialScience LLC assumes no legal responsibility for use of or reliance upon the information in this MSDS.

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006  
(REACH)



**Trade name :** Bemicoll X13-08

**Revision date :** 25-01-2013

**Date of print :** 25-01-2013

**Version :**

1.0.0

### 1. Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Bemicoll X13-08

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

##### Relevant identified uses

Adhesive

##### Uses advised against

Consumer uses

#### 1.3 Details of the supplier of the safety data sheet

##### Supplier (manufacturer/importer/only representative/downstream user/distributor)

SCHMITS NEDERLAND BV

**Street :** Bedrijvenpark Twente 48

**Postal code/city :** NL-7602 KB ALMELO

**E-mail :** info@schmits.nl

**Telephone :** +31(0)546-574060

**Information contact :** qc@schmits.nl

#### 1.4 Emergency Telephone Number

+31(0)546-574060

### 2. Hazards identification

#### 2.1 Classification of the substance or mixture

This mixture is not classified as dangerous according to 1999/45/EC.

**Classification according to Directive 67/548/EEC or 1999/45/EC**

None.

#### 2.2 Label elements

None.

#### 2.3 Other hazards

None.

### 3. Composition/information on ingredients

#### 3.2 Mixtures

**Hazardous ingredients**

None.

### 4. First aid measures

#### 4.1 Description of first aid measures

##### General information

When in doubt or if symptoms are observed, get medical advice.

##### After inhalation

**Safety Data Sheet**  
according to Regulation (EC) No. 1907/2006  
(REACH)



**Trade name :** Bemicol X13-08  
**Revision date :** 25-01-2013  
**Date of print :** 25-01-2013

**Version :** 1.0.0

Provide fresh air.

**In case of skin contact**

Rinse with water.

**After eye contact**

Rinse immediately carefully and thoroughly with eye-bath or water.

**After ingestion**

Rinse mouth immediately and drink plenty of water.

**4.2 Most important symptoms and effects, both acute and delayed**

None.

**4.3 Indication of any immediate medical attention and special treatment needed**

None.

**5. Firefighting measures**

**5.1 Extinguishing media**

**Suitable extinguishing media**

Water mist, Foam, Extinguishing powder, Carbon dioxide.

**Unsuitable extinguishing media**

High power water jet.

**5.2 Special hazards arising from the substance or mixture**

**Hazardous combustion products**

None known.

**5.3 Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing.

**6. Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**

**Protective equipment**

No special environmental measures are necessary.

**6.2 Environmental precautions**

Do not allow to enter into surface water or drains.

**6.3 Methods and material for containment and cleaning up**

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

**6.4 Reference to other sections**

See protective measures under point 7 and 8.

**7. Handling and storage**

**7.1 Precautions for safe handling**

No special measures are necessary.

**7.2 Conditions for safe storage, including any incompatibilities**

**Technical measures and storage conditions**

**Safety Data Sheet**  
according to Regulation (EC) No. 1907/2006  
(REACH)



**Trade name :** Bemicoll X13-08

**Revision date :** 25-01-2013

**Version :**

1.0.0

**Date of print :** 25-01-2013

Keep container tightly closed in a cool, well-ventilated place.

**Packaging materials**

Suitable container/equipment material: stainless steel and polyethylene (PE).

**Hints on storage assembly**

**Storage class :** 12

**Storage class (TRGS 510) :** 12

**Further information on storage conditions**

**Recommended storage temperature :** 5 - 30 °C.

**Protect against :** Frost.

**7.3 Specific end use(s)**

None.

**8. Exposure controls/personal protection**

**8.1 Control parameters**

Does not contain substances above concentration limits fixing an occupational exposure limit.

**8.2 Exposure controls**

**Appropriate engineering controls**

See chapter 7. No additional measures necessary.

**Personal protective equipment**

**Eye / face protection**

Use safety glasses.

**Skin protection**

Wear suitable working clothes.

**Hand protection**

Use protective gloves.

**Respiratory protection**

Usually no personal respiratory protection necessary.

**General health and safety measures**

Avoid contact with skin, eyes and clothes.

**9. Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

**Safety relevant basis data**

<b>Physical state :</b>					paste
<b>Colour :</b>					white-beige
<b>Odour :</b>					characteristic
<b>Melting point / melting range :</b>		±			0 °C
<b>Boiling temperature / boiling range : ( 1013 hPa )</b>		±			100 °C
<b>Flash point :</b>					not applicable
<b>Auto-ignition temperature :</b>					not applicable
<b>Flammability (solid, gas) :</b>					not applicable
<b>Explosive properties :</b>					none
<b>Density :</b>	( 20 °C )	±			1 g/cm <sup>3</sup>
<b>Water solubility :</b>	( 20 °C )				miscible
<b>pH value :</b>		±			8

**Safety Data Sheet**  
according to Regulation (EC) No. 1907/2006  
(REACH)



**Trade name :** Bemicoll X13-08

**Revision date :** 25-01-2013

**Date of print :** 25-01-2013

**Version :**

1.0.0

**Viscosity :** ( 20 °C ) ± 14000 mPa.s  
**Oxidising properties :** none

**9.2 Other information**

None.

**10. Stability and reactivity**

**10.1 Reactivity**

None.

**10.2 Chemical stability**

Stable under normal conditions of use.

**10.3 Possibility of hazardous reactions**

None.

**10.4 Conditions to avoid**

None.

**10.5 Incompatible materials**

None known.

**10.6 Hazardous decomposition products**

Under efficient and purposive use there are no hazardous decomposition products.

**11. Toxicological information**

**11.1 Information on toxicological effects**

**Irritant and corrosive effects**

**Primary irritation to the skin**

Not irritating.

**Irritation to eyes**

Slightly irritant but not relevant for classification.

**Irritation to respiratory tract**

Not irritating.

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

**Carcinogenicity**

No indication of human carcinogenicity.

**Germ cell mutagenicity/Genotoxicity**

No indications of human germ cell mutagenicity exist.

**Reproductive toxicity**

No indications of human reproductive toxicity exist.

**Overall Assessment on CMR properties**

This substance does not meet the criteria for classification as CMR category 1A or 1B according to CLP.

**12. Ecological information**

**12.1 Toxicity**

No toxic effects are known for this product.

**12.2 Persistence and degradability**

The product is biodegradable.

**Safety Data Sheet**  
according to Regulation (EC) No. 1907/2006  
(REACH)

CHEMICAL  
**SCHMITS**  
SOLUTIONS



**Trade name :** Bemicoll X13-08

**Revision date :** 25-01-2013

**Date of print :** 25-01-2013

**Version :**

1.0.0

**12.3 Bioaccumulative potential**

No indication of bioaccumulation potential.

**12.4 Mobility in soil**

If product enters soil, it will be mobile and may contaminate groundwater.

**12.5 Results of PBT and vPvB assessment**

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

**12.6 Other adverse effects**

None.

**12.7 Further ecological information**

None.

**13. Disposal considerations**

**13.1 Waste treatment methods**

Recycle according to official regulations.

**Product/Packaging disposal**

**Waste treatment options**

**Appropriate disposal / Product**

Dispose of waste according to applicable legislation.

**Appropriate disposal / Package**

Contaminated packages must be completely emptied and can be re-used following proper cleaning.

**14. Transport information**

**14.1 UN number**

No dangerous good in sense of this transport regulation.

**14.2 UN proper shipping name**

No dangerous good in sense of this transport regulation.

**14.3 Transport hazard class(es)**

No dangerous good in sense of this transport regulation.

**14.4 Packing group**

No dangerous good in sense of this transport regulation.

**14.5 Environmental hazards**

No dangerous good in sense of this transport regulation.

**14.6 Special precautions for user**

None.

**15. Regulatory information**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**EU legislation**

**Other regulations (EU)**

Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work

**National regulations**

**Safety Data Sheet**  
according to Regulation (EC) No. 1907/2006  
(REACH)



**Trade name :** Bemicol X13-08

**Revision date :** 25-01-2013

**Date of print :** 25-01-2013

**Version :**

1.0.0

**Technische Anleitung Luft (TA-Luft)**

Weight fraction (Number 5.2.5. I) : < 5 %

**Water hazard class (WGK)**

Class : 1 (Slightly hazardous to water) Classification according to VwVwS

**15.2 Chemical safety assessment**

Chemical safety assessments for substances in this preparation were not carried out.

**16. Other information**

**16.1 Indication of changes**

None.

**16.2 Abbreviations and acronyms**

None.

**16.3 Key literature references and sources for data**

None.

**16.4 Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]**

**Classification according to Regulation (EC) No. 1272/2008 [CLP]**

None.

**16.5 Relevant R-, H- and EUH-phrases (Number and full text)**

None.

**16.6 Training advice**

None.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

# BLUESTAR SILICONES

Page: 1

## Material Safety Data Sheet

RHODORSIL TCS 7534 A

Date Prepared: 11/18/09

Supersedes Date: 9/12/07

### 1. PRODUCT AND COMPANY DESCRIPTION

Bluestar Silicones  
911 E. White Street  
Rock Hill, SC US

**Emergency Phone Numbers:**

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT  
CONTACT: CHEMTREC (800-424-9300 within the United States or  
703-527-3887 for international collect calls).

**For Product Information:**

803-329-5260

**Chemical Name or Synonym:**

NON-CURING PART OF A ROOM TEMPERATURE VULCANIZING SILICONE ELASTOMER

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Reg Number	OSHA Hazard	Percentage
POLYORGANOSILOXANES	*****	N	
CALCIUM CARBONATE	471-34-1	Y	10 - 30
POLYMETHYLHYDROGENSILOXANES	69013-23-6	Y	3 - 7
VINYL TRIMETHOXY SILANE	2768-02-7	Y	0.5 - 1.5
METHANOL EMITTED DURING CURING	67-56-1	Y	< 1

### 3. HAZARDS IDENTIFICATION

#### A. EMERGENCY OVERVIEW:

**Physical Appearance and Odor:**

milky white viscous liquid, faint odor.

**Warning Statements:**

CAUTION! FLAMMABLE HYDROGEN GAS MAY BE RELEASED DURING STORAGE AND ON CONTACT WITH WATER, ALCOHOLS, BASES, ACIDS AND SOME METALLIC SALTS. VAPORS EMITTED DURING CURING ARE TOXIC IF INHALED, SWALLOWED OR ABSORBED THROUGH SKIN.

#### B. POTENTIAL HEALTH EFFECTS:

**Acute Eye:**

Non-irritating. May cause foreign body irritation only.

**Acute Skin:**

Non-irritating. Low acute dermal toxicity.

**Acute Inhalation:**

Inhalation not likely.

**Acute Ingestion:**

Low acute oral toxicity.

**Chronic Effects:**

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

**4. FIRST AID MEASURES****FIRST AID MEASURES FOR ACCIDENTAL:****Eye Exposure:**

In case of contact, immediately absorb excess with clean absorbent cloth or cotton. Then, hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek medical attention if irritation develops or persists or if visual changes occur.

**Skin Exposure:**

Immediately wipe excess material off skin with a dry cloth; then wash skin with plenty of soap and water. Seek medical attention if irritation develops or persists.

**Inhalation:**

Inhalation is not an expected route of exposure. If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention if respiratory irritation or distress continues.

**Ingestion:**

NEVER attempt to induce vomiting. Consult a doctor if necessary. Rinse mouth out with water.

**MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:**

No specific information found.

**NOTES TO PHYSICIAN:**

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Treat symptomatically. No specific antidote available.

**5. FIRE FIGHTING MEASURES****FIRE HAZARD DATA:**

**Flash Point:**  
140 C (284 F). Flammability Class: WILL BURN.

**Method Used:**  
Closed cup

**Flammability Limits (vol/vol%):**

<b>Lower:</b>	<b>Upper:</b>
4	75

**Extinguishing Media:**  
Recommended: dry chemical, foam, carbon dioxide.

**Special Fire Fighting Procedures:**  
Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Cool containers exposed to fire with water.

**Unusual Fire and Explosion Hazards:**  
Product will burn under fire conditions. Small amounts of hydrogen gas, which is flammable and can form explosive mixtures with air, may be released during storage and on contact with water, acids, bases, amines and common metals. This product has a flash point as indicated above. However it does not sustain combustion as determined by a test method specified in 49 CFR 173 - Appendix H to Part 173 Method for Sustained Combustibility. Storage practices should be in accordance with local fire code requirements.

**Hazardous Decomposition Materials (Under Fire Conditions):**

formaldehyde  
oxides of carbon  
silica

**Autoignition Temperature:**  
400 C (752 F)

**6. ACCIDENTAL RELEASE MEASURES**

**Evacuation Procedures and Safety:**  
Wear appropriate protective gear for the situation. See Personal Protection information in Section 8. CAUTION: Spilled material may make the floor slippery. Do not leave traces of product on floors, ladders, etc., as this may present a slipping hazard.

**Containment of Spill:**  
Follow procedure described below under Cleanup and Disposal of Spill.

## RHODORSIL TCS 7534 A

**Cleanup and Disposal of Spill:**

Absorb with an inert absorbent. Scrape up and place in appropriate closed container (see Section 7: Handling and Storage). Clean up residual material with an appropriate solvent like paint thinner or mineral spirits, provided that there is good ventilation and no sources of ignition.

**Environmental and Regulatory Reporting:**

Do not flush to drain.

**7. HANDLING AND STORAGE****Minimum/Maximum Storage Temperatures:**

10 to 40 C (50 to 104 F)

**Handling:**

Avoid breathing vapors and mists. Avoid direct or prolonged contact with skin and eyes. Use nonsparking tools and grounded/bonded equipment and containers when transferring.

**Storage:**

Store in tightly closed containers. Store in an area that is dry, well-ventilated, away from combustible material, away from ignition sources, away from incompatible materials (see Section 10. Stability and Reactivity).

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Introductory Remarks:**

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

This product can form formaldehyde vapors when heated to temperatures above 150 degrees C in the presence of air. Formaldehyde is a potential cancer hazard, a known skin and respiratory sensitizer, and an irritant to the eyes, nose, throat, skin, and digestive system. Safe handling conditions may be maintained by keeping vapor concentrations within the OSHA Permissible Exposure Limit for formaldehyde.

**Exposure Guidelines:**

Exposure limits represent regulated or recommended worker breathing zone concentrations measured by validated sampling and analytical methods, meeting the regulatory requirements. The following limits apply to this material, where, if indicated, S=skin and C=ceiling limit:

**METHANOL EMITTED DURING CURING**

	Notes	TWA	STEL
ACGIH	S	200 ppm	250 ppm
OSHA	S	200 ppm	325 mg/cu m
OSHA	S	260 mg/cu m	250 ppm

**Engineering Controls:**

Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: general area dilution/exhaust ventilation.

**Respiratory Protection:**

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

For reasonably foreseeable industrial end uses of this material, respiratory protection should not be necessary.

**Eye/Face Protection:**

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

It is generally regarded as good practice to wear a minimum of safety glasses with side shields when working in industrial environments.

**Skin Protection:**

Skin contact should be minimized through use of gloves and suitable long-sleeved clothing (i.e., shirts and pants). Consideration must be given both to durability as well as permeation resistance.

**Work Practice Controls:**

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

- (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- (3) Wash exposed skin promptly to remove accidental splashes or contact

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with this material.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

**Physical Appearance:**  
milky white viscous liquid.

**Odor:**  
faint odor.

**pH:**  
Not Applicable

**Specific Gravity:**  
1.12 at 25 C (77 F).

**Water Solubility:**  
slowly hydrolyses

**Melting Point Range:**  
Not Available

**Boiling Point Range:**  
Not Available

**Vapor Pressure:**  
Not Available

**Vapor Density:**  
Not Available

**Viscosity:**  
viscosity (centipoises) : 40000 cps at 25 C (77 F).

## 10. STABILITY AND REACTIVITY

**Chemical Stability:**  
This material is stable under normal handling and storage conditions described in Section 7.

**Conditions To Be Avoided:**  
combustible materials  
heat  
open flame  
spark  
static electricity  
water

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extreme humidity

**Materials/Chemicals To Be Avoided:**

moisture  
water  
strong bases  
strong acids  
strong oxidizing agents  
alcohols  
amines  
metal salts

**Decomposition Temperature Range:**

> 200 C (392 F)

**The Following Hazardous Decomposition Products Might Be Expected:**

**Decomposition Type: hydrolysis**

hydrogen

**Decomposition Type: thermal**

dimethylcyclosiloxanes  
methylphenylcyclosiloxanes

**Decomposition Type: oxidative/thermal**

formaldehyde

**Hazardous Polymerization Will Not Occur.**

**Avoid The Following To Inhibit Hazardous Polymerization:**

not applicable

**II. TOXICOLOGICAL INFORMATION**

**Acute Eye Irritation:**

No test data found for product.

**Acute Skin Irritation:**

No test data found for product.

**Acute Dermal Toxicity:**

No test data found for product.

**Acute Respiratory Irritation:**

No test data found for product.

**Acute Inhalation Toxicity:**

No test data found for product.

**Acute Oral Toxicity:**

No test data found for product.

**Chronic Toxicity:**

This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicological Information:**  
No data found for product.

**Chemical Fate Information:**  
No data found for product.

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Method:**  
Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

**Container Handling and Disposal:**  
Any containers or equipment used should be decontaminated immediately after use.

EPA Hazardous Waste - NO

## 14. TRANSPORTATION INFORMATION

**Transportation Status:** IMPORTANT! Statements below provide additional data on listed DOT classification.

The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

This product does not sustain combustion as determined by a test method specified in 49 CFR 173 - Appendix H to Part 173 Method for Sustained Combustibility.

US Department of Transportation

**Shipping Name:**  
NOT REGULATED

## 15. REGULATORY INFORMATION

**Inventory Status**

Inventory	Status
UNITED STATES (TSCA)	Y
CANADA (DSL)	Y
EUROPE (EINECS/ELINCS)	P
AUSTRALIA (AICS)	Y
JAPAN (MITI)	N
SOUTH KOREA (KECL)	Y

Y = All ingredients are on the inventory.

E = All ingredients are on the inventory or exempt from listing.

P = One or more ingredients fall under the polymer exemption or are on the no longer polymer list. All other ingredients are on the inventory or exempt from listing.

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

**FEDERAL REGULATIONS****Inventory Issues:**

All functional components of this product are listed on the TSCA Inventory.

**SARA Title III Hazard Classes:**

Fire Hazard	- NO
Reactive Hazard	- YES
Release of Pressure	- NO
Acute Health Hazard	- YES
Chronic Health Hazard	- NO

**SARA 313 Chemicals**

METHANOL EMITTED DURING CURING ( <1%)

**SARA Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances**

Ingredient	CERCLA/SARA RQ	SARA EHS TPQ
METHANOL EMITTED DURING CURING	5000 lbs	

**STATE REGULATIONS:**

This product does not contain any components that are regulated under California Proposition 65.

**16. OTHER INFORMATION****National Fire Protection Association Hazard Ratings--NFPA(R):**

- 1 Health Hazard Rating--Slight
- 1 Flammability Rating--Slight
- 1 Instability Rating--Slight

**National Paint & Coating Hazardous Materials Identification System--HMIS(R):**

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1 Health Hazard Rating--Slight  
1 Flammability Rating--Slight  
1 Reactivity Rating--Slight

**Reason for Revisions:**

Change and/or addition made to Warning Statements in Section 3, Section 4, Section 5, Exposure Limits in Section 8, Section 15, HMIS Ratings in Section 16, NFPA Ratings in Section 16.

**Key Legend Information:**

ACGIH - American Conference of Governmental Industrial Hygienists  
OSHA - Occupational Safety and Health Administration  
TLV - Threshold Limit Value  
PEL - Permissible Exposure Limit  
TWA - Time Weighted Average  
STEL - Short Term Exposure Limit  
NTP - National Toxicology Program  
IARC - International Agency for Research on Cancer  
ND - Not determined  
Bluestar - Bluestar Silicones Established Exposure Limits

**Disclaimer:**

The information herein is given in good faith but no warranty, expressed or implied, is made.

**\*\*End Of MSDS Document\*\***

# BLUESTAR SILICONES

Page: 1

## Material Safety Data Sheet

RHODORSIL TCS 7534 B

Date Prepared: 11/18/09

Supersedes Date: 9/12/07

### 1. PRODUCT AND COMPANY DESCRIPTION

Bluestar Silicones  
911 E. White Street  
Rock Hill, SC US

**Emergency Phone Numbers:**

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT  
CONTACT: CHEMTREC (800-424-9300 within the United States or  
703-527-3887 for international collect calls).

**For Product Information:**

803-329-5260

**Chemical Name or Synonym:**

CURING AGENT PART OF A ROOM TEMPERATURE VULCANIZING SILICONE ELASTOMER

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Reg Number	OSHA Hazard	Percentage
POLYMETHYLVINYLSILOXANES	*****	N	
PLATINUM COMPLEX	*****	N	

### 3. HAZARDS IDENTIFICATION

**A. EMERGENCY OVERVIEW:**

**Physical Appearance and Odor:**

clear viscous liquid, slight odor.

**Warning Statements:**

Based on currently available data, this product does not meet the regulatory definition of a hazardous substance. However, good industrial hygiene practices should be used in handling it.

**B. POTENTIAL HEALTH EFFECTS:**

**Acute Eye:**

---

Non-irritating. May cause foreign body irritation only.

**Acute Skin:**

Low acute dermal toxicity.

**Acute Inhalation:**

Inhalation not likely.

**Acute Ingestion:**

Low acute oral toxicity.

**Chronic Effects:**

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

**4. FIRST AID MEASURES****FIRST AID MEASURES FOR ACCIDENTAL:****Eye Exposure:**

In case of contact, immediately absorb excess with clean absorbent cloth or cotton. Then, hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek medical attention if irritation develops or persists or if visual changes occur.

**Skin Exposure:**

Immediately wipe excess material off skin with a dry cloth; then wash skin with plenty of soap and water. Seek medical attention if irritation develops or persists.

**Inhalation:**

Inhalation is not an expected route of exposure. If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention if respiratory irritation or distress continues.

**Ingestion:**

NEVER attempt to induce vomiting. Consult a doctor if necessary. Rinse mouth out with water.

**MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:**

No specific information found.

**NOTES TO PHYSICIAN:**

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Treat symptomatically. No specific antidote available.

**5. FIRE FIGHTING MEASURES**

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**FIRE HAZARD DATA:****Flash Point:**

140 C (284 F). Flammability Class: WILL BURN.

**Method Used:**

AFNOR T 60103 (EEC closed cup)

**Flammability Limits (vol/vol%):****Lower:**  
2**Upper:**  
12**Extinguishing Media:**

Recommended: dry chemical, foam, carbon dioxide.

**Special Fire Fighting Procedures:**

Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Cool containers exposed to fire with water.

**Unusual Fire and Explosion Hazards:**

Product will burn under fire conditions. This product has a flash point as indicated above. However it does not sustain combustion as determined by a test method specified in 49 CFR 173 - Appendix H to Part 173 Method for Sustained Combustibility. Storage practices should be in accordance with local fire code requirements.

**Hazardous Decomposition Materials (Under Fire Conditions):**formaldehyde  
oxides of carbon  
silica**Autoignition Temperature:**

&gt; 400 C (752 F)

**6. ACCIDENTAL RELEASE MEASURES****Evacuation Procedures and Safety:**

Wear appropriate protective gear for the situation. See Personal Protection information in Section 8. CAUTION: Spilled material may make the floor slippery. Do not leave traces of product on floors, ladders, etc., as this may present a slipping hazard.

**Containment of Spill:**

Follow procedure described below under Cleanup and Disposal of Spill.

**Cleanup and Disposal of Spill:**

Absorb with an inert absorbent. Scrape up and place in appropriate closed container (see Section 7: Handling and Storage). Clean up residual material with an appropriate solvent like paint thinner or mineral spirits, provided that there is good ventilation and no sources of ignition.

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**Environmental and Regulatory Reporting:**  
Do not flush to drain.

## 7. HANDLING AND STORAGE

**Minimum/Maximum Storage Temperatures:**  
10 to 40 C (50 to 104 F)

**Handling:**  
Avoid breathing vapors and mists. Avoid direct or prolonged contact with skin and eyes.

**Storage:**  
Store in tightly closed containers. Store in an area that is dry, well-ventilated.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Introductory Remarks:**

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

This product can form formaldehyde vapors when heated to temperatures above 150 degrees C in the presence of air. Formaldehyde is a potential cancer hazard, a known skin and respiratory sensitizer, and an irritant to the eyes, nose, throat, skin, and digestive system. Safe handling conditions may be maintained by keeping vapor concentrations within the OSHA Permissible Exposure Limit for formaldehyde.

**Exposure Guidelines:**

No exposure limits were found for this product or any of its ingredients.

**Engineering Controls:**

Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: general area dilution/exhaust ventilation.

**Respiratory Protection:**

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

For reasonably foreseeable industrial end uses of this material, respiratory protection should not be necessary.

**Eye/Face Protection:**

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

It is generally regarded as good practice to wear a minimum of safety glasses with side shields when working in industrial environments.

**Skin Protection:**

Skin contact should be minimized through use of gloves and suitable long-sleeved clothing (i.e., shirts and pants). Consideration must be given both to durability as well as permeation resistance.

**Work Practice Controls:**

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

- (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- (3) Wash exposed skin promptly to remove accidental splashes or contact with this material.

**3. PHYSICAL AND CHEMICAL PROPERTIES**

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

**Physical Appearance:**  
clear viscous liquid.

**Odor:**  
slight odor.

**pH:**  
Not Applicable

**Specific Gravity:**  
0.995 at 25 C (77 F).

**Water Solubility:**

insoluble

**Melting Point Range:**  
Not Available

**Boiling Point Range:**  
Not Available

**Vapor Pressure:**  
< 0.01 mmHg at 20 C (68 F)

**Vapor Density:**  
Not Available

**Viscosity:**  
viscosity (centipoises) : 60000 cps at 25 C (77 F).

## 10. STABILITY AND REACTIVITY

**Chemical Stability:**  
This material is stable under normal handling and storage conditions described in Section 7.

**Conditions To Be Avoided:**  
combustible materials  
heat  
open flame  
spark  
static electricity

**Materials/Chemicals To Be Avoided:**  
strong bases  
strong acids  
strong oxidizing agents

**Decomposition Temperature Range:**  
< 200 C (392 F)

**The Following Hazardous Decomposition Products Might Be Expected:**

**Decomposition Type: thermal**  
dimethylcyclosiloxanes  
methylphenylcyclosiloxanes

**Decomposition Type: oxidative/thermal**  
formaldehyde

**Hazardous Polymerization Will Not Occur.**

**Avoid The Following To Inhibit Hazardous Polymerization:**  
not applicable

## 11. TOXICOLOGICAL INFORMATION

**Acute Eye Irritation:**  
No test data found for product.

**Acute Skin Irritation:**  
No test data found for product.

**Acute Dermal Toxicity:**  
The following data is for similar or related products.

**Toxicological Information and Interpretation**  
LD50 - lethal dose 50% of test species, > 2000 mg/kg, rat.

**Acute Respiratory Irritation:**  
No test data found for product.

**Acute Inhalation Toxicity:**  
No test data found for product.

**Acute Oral Toxicity:**  
The following data is for similar or related products.

**Toxicological Information and Interpretation**  
LD50 - lethal dose 50% of test species, > 2000 mg/kg, rat.

**Chronic Toxicity:**  
This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicological Information:**  
No data found for product.

**Chemical Fate Information:**  
No data found for product.

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Method:**  
Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

**Container Handling and Disposal:**  
Any containers or equipment used should be decontaminated immediately

after use.

EPA Hazardous Waste - NO

#### 14. TRANSPORTATION INFORMATION

**Transportation Status:** IMPORTANT! Statements below provide additional data on listed DOT classification.

The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

This product does not sustain combustion as determined by a test method specified in 49 CFR 173 - Appendix H to Part 173 Method for Sustained Combustibility.

**US Department of Transportation**

**Shipping Name:**

NOT REGULATED

#### 15. REGULATORY INFORMATION

##### Inventory Status

Inventory	Status
UNITED STATES (TSCA)	Y
CANADA (DSL)	Y
EUROPE (EINECS/ELINCS)	P
AUSTRALIA (AICS)	Y
JAPAN (MITI)	N
SOUTH KOREA (KECL)	Y

Y = All ingredients are on the inventory.

E = All ingredients are on the inventory or exempt from listing.

P = One or more ingredients fall under the polymer exemption or are on the no longer polymer list. All other ingredients are on the inventory or exempt from listing.

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

##### FEDERAL REGULATIONS

##### Inventory Issues:

All functional components of this product are listed on the TSCA Inventory.

##### SARA Title III Hazard Classes:

Fire Hazard - NO

Reactive Hazard - NO  
Release of Pressure - NO  
Acute Health Hazard - NO  
Chronic Health Hazard - NO

**STATE REGULATIONS:**

This product does not contain any components that are regulated under California Proposition 65.

**16. OTHER INFORMATION****National Fire Protection Association Hazard Ratings--NFPA(R):**

0 Health Hazard Rating--Minimal  
1 Flammability Rating--Slight  
0 Instability Rating--Minimal

**National Paint & Coating Hazardous Materials Identification System--HMIS(R):**

0 Health Hazard Rating--Minimal  
1 Flammability Rating--Slight  
0 Reactivity Rating--Minimal

**Reason for Revisions:**

Change and/or addition made to Section 4, Section 5.

**Key Legend Information:**

ACGIH - American Conference of Governmental Industrial Hygienists  
OSHA - Occupational Safety and Health Administration  
TLV - Threshold Limit Value  
PEL - Permissible Exposure Limit  
TWA - Time Weighted Average  
STEL - Short Term Exposure Limit  
NTP - National Toxicology Program  
IARC - International Agency for Research on Cancer  
ND - Not determined  
Bluestar - Bluestar Silicones Established Exposure Limits

**Disclaimer:**

The information herein is given in good faith but no warranty, expressed or implied, is made.

**\*\*End Of MSDS Document\*\***

**BYK-348**

Version 5

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Print Date 08/03/2012

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : BYK-348  
Product Use Description : Silicone Surfactants  
  
Company : BYK USA Inc.  
524 South Cherry Street  
Wallingford CT 06492  
  
Prepared by : J.Nole, Safety; M.McCutcheon, Regulatory  
Telephone : (203) 265-2086  
Visit our web site : [www.byk.com](http://www.byk.com)  
E-mail address : [ehs.byk.usa@altana.com](mailto:ehs.byk.usa@altana.com)  
Emergency telephone number : CHEMTREC 800-424-9300

**SECTION 2. HAZARDS IDENTIFICATION****Emergency Overview**

Form : liquid  
Colour : light brown  
Odour : not significant

**OSHA Regulatory Status**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR1910.1200)

**Potential Health Effects**

Eyes : Contact may cause irritation.  
Skin : Contact may cause irritation.  
Ingestion : Ingestion may irritate the digestive tract.  
Inhalation : High concentrations of heated vapors may irritate the respiratory tract and mucous membranes.  
  
Chronic Exposure : Inhalation (300 ppm)/ingestion (1600 mg/kg) dosages of Octamethylcyclotetrasiloxane has caused liver weight increases in laboratory animals. Liver weight changes via inhalation were reversible. A reproductive study (rats, inhalation: 700 ppm/70 days) showed a statistically significant reduction in mean litter size and implantation sites. The relevance of this data to humans is uncertain.  
  
Aggravated Medical Condition : None expected  
Primary Routes of Entry : Skin contact  
Skin absorption

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Inhalation  
Eyes  
Ingestion

**Carcinogenicity:**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**Environmental Effects**

Environmental Effects : No information available.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS****Chemical nature**

Polyether modified siloxane

**Hazardous components**

Component	CAS-No.	Weight percent
Polyglycol	-	10.00 - 30.00
Octamethylcyclotetrasiloxane	556-67-2	0.10 - 1.00

**SECTION 4. FIRST AID MEASURES****First aid procedures**

Inhalation : Remove to fresh air. Administer artificial respiration if necessary. Get medical aid as soon as possible.

Skin contact : Remove contaminated clothing. Wash thoroughly with soap and water.

Eye contact : Immediately flush with plenty of water for at least 20 minutes.

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- Get medical aid.
- Ingestion** : Do not induce vomiting; aspiration hazard. Dilute with 1-2 glasses of water. Get medical aid. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into lungs.
- Notes to physician**
- Risks** : No information available.

**SECTION 5. FIREFIGHTING MEASURES****Flammable properties**

- Flash point** : > 100 °C (> 212.00 °F)  
Method: 49 (Pensky-Martens)
- Ignition temperature** : > 200 °C (> 392.00 °F)
- Suitable extinguishing media** : Foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical
- Unsuitable extinguishing media** : No information available.
- Special protective equipment for firefighters** : In the event of fire, wear self-contained breathing apparatus.
- Specific hazards during firefighting** : Cool closed containers exposed to fire with water spray.  
Will not explode on mechanical impact.
- Hazardous decomposition products due to incomplete combustion.** : Carbon oxides  
silicone compounds  
formaldehyde
- Further information** : Keep away from heat and sources of ignition.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions** : Eliminate all sources of ignition. Wear protective equipment: safety glasses, gloves and an appropriate respirator.
- Environmental precautions** : Prevent spilled material from entering the ground, water and/or air by using appropriate containment methods.
- Methods for containment** : Stop leak. Dike and contain spill.

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Methods for cleaning up : Pump into salvage tanks and/or absorb with suitable material.  
Use sparkless shovels to remove material.

Additional advice : No further information is available.

**SECTION 7. HANDLING AND STORAGE**

**Handling**

Handling : Avoid contact with skin and eyes.  
Handle as an industrial chemical.  
Keep container tightly closed.  
Keep away from oxidizing agents.

**Storage**

Advice on common storage : Keep in a dry, cool and well-ventilated place.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Exposure Guidelines**

Contains no substances with occupational exposure limit values.

**Engineering measures**

Engineering measures : Use with local exhaust ventilation.

**Personal protective equipment**

Eye protection : Safety Glasses

Hand protection : Neoprene gloves

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : Not necessary.  
If handling heated or misted product in a poorly ventilated area, wear a properly fitted respirator (NIOSH) during exposure.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.  
Clean long legged, long sleeved work clothes.  
If splashing is possible, wear chemically resistant protective clothing.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Form	: liquid
Colour	: light brown
Odour	: not significant
Odor Threshold	: no data available
Flash point	: > 100 °C (> 212.00 °F) Method: 49 (Pensky-Martens)
Ignition temperature	: > 200 °C (> 392.00 °F)
Lower explosion limit	: no data available
Upper explosion limit	: no data available
pH	: no data available
Freezing point	: no data available
Boiling point	: no data available
Vapour pressure	: < 1.0000000 hPa at 20 °C (68.00 °F) Method: calculated
Evaporation rate	: no data available
Density	: 1.0550 g/cm3 at 20 °C (68.00 °F)Method: DIN EN ISO 2811-3
Bulk density	: not applicable
Water solubility	: completely miscible
Partition coefficient: n-octanol/water	: no data available
Viscosity, kinematic	: at 20 °C (68.00 °F) no data available  at 40 °C (104.00 °F) no data available
Relative vapor density	: no data available

**SECTION 10. STABILITY AND REACTIVITY**

Conditions to avoid	: None known.
Materials to avoid	: Strong oxidizing agents
Hazardous decomposition products	: None expected
Chemical stability	: Stable; polymerization will not occur

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**SECTION 11. TOXICOLOGICAL INFORMATION**

- Acute oral toxicity (Product) : no data available
- Acute oral toxicity (Component) : Component: - Polyglycol  
LD50  
no data available
- Component: 556-67-2 Octamethylcyclotetrasiloxane  
LD50 rat  
Dose: 1,540 mg/kg
- Acute dermal toxicity (Component) : Component: - Polyglycol  
no data available
- Component: 556-67-2 Octamethylcyclotetrasiloxane  
LD50 rabbit  
Dose: 754 mg/kg
- Acute inhalation toxicity (Component) : Component: - Polyglycol  
LC50  
no data available
- Component: 556-67-2 Octamethylcyclotetrasiloxane  
LC50  
no data available
- Skin irritation (Product) : no data available
- Skin irritation (Component) : Component: - Polyglycol  
rabbit  
Result: Moderate skin irritation
- Component: 556-67-2 Octamethylcyclotetrasiloxane  
rabbit  
Result: slight irritation
- Eye irritation (Product) : no data available
- Eye irritation(Component) : Component: - Polyglycol  
rabbit  
Result: Eye irritation
- Component: 556-67-2 Octamethylcyclotetrasiloxane  
rabbit  
Result: Mild eye irritation
- Sensitisation (Product) : no data available

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Further information (Product) : no data available

**SECTION 12. ECOLOGICAL INFORMATION**

Additional ecological information (Product) : There is no data available for this product.

**SECTION 13. DISPOSAL CONSIDERATIONS**

Further information : Dispose of in accordance with applicable local/municipal, state/provincial and federal regulations.

**SECTION 14. TRANSPORT INFORMATION**

Container sizes: 55 gallon drums, 5 or 6-gallon pails, 2oz/16oz samples)

DOT Not dangerous goods

IATA Not dangerous goods

IMDG\_US Not dangerous goods

**SECTION 15. REGULATORY INFORMATION**

**HMS Classification** : Health hazard: 1  
Chronic Health Hazard: 1  
Flammability: 1  
Reactivity: 0  
PPI:B

**National Fire Protection Association (NFPA) Class** : IIIB

**Emergency Planning Community Right-To-Know (EPCRA)**

**SARA 302 Components** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

If listed below, this product contains toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

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**SARA 313 Components** : Not applicable %

**SARA 311/312 Hazards** : Chronic Health Hazard

**Toxic Substances Control Act (TSCA)**

**TSCA Status** : We certify that all of the components of this product are either listed on the TSCA Inventory or are not subject to the notification requirements per 40 CFR 720 30(h).

**Section 4 / 12(b)** : Not applicable

**Clean Air Act & Related Information**

**Non-volatile (Wt)** : 96 - 100 %  
Method: 51 (60min/105°C/ 1g)  
DIN EN ISO 3251

**Ozone Depleting Substances** : Not applicable.

Non-volatile information is not a specification.

**Hazardous Air Pollutants**

If not listed above, this product does not contain HAPs at 1% or 0.1% or greater. Refer to Section 3 for HAP weight percentage.

**Resource Conservation and Recovery Act**

**EPA Hazardous Waste Code(s)** : Not applicable.

**State Laws**

**Massachusetts Right To Know Components** : No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components** : Polyglycol

**New Jersey Right To Know Components** : Polyglycol

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**New Jersey Trade Secret  
Registry Number for the  
product (NJ TSNR)** : 800963-5048

**California Prop. 65  
Components** : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**CONEG Heavy Metal:** We certify that this product does not contain Lead, Mercury, Cadmium or hexavalent chromium in the sum concentration of 100 ppm by weight or greater.

**Canadian Environmental Protection Act**

**Domestic Substances List  
DSL Status** : We certify that all of the components of this product are listed on the DSL.

**WHMIS Classification** : D2A

**SECTION 16. OTHER INFORMATION**

**Further information**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



**Safety Data Sheet****Material:** DEHESIVE® EM 427

Version: 2.0 (US)

Date of print: 06/08/2015

Date of last alteration: 05/27/2015

**1. Product and company identification****1.1 Identification of the substance or preparation:**

**Commercial product name:** DEHESIVE® EM 427  
**Use of substance / preparation** Industrial.  
Paper and foil coating

**1.2 Company/undertaking identification:**

**Manufacturer/distributor:** Wacker Chemie AG  
Hanns-Seidel-Platz 4  
81737 München  
Germany

**Customer information:** Wacker Chemical Corporation  
3301 Sutton Road  
Adrian, Michigan 49221-9397  
USA  
InfoLine:  
Tel (517) 264-8240, Fax (517) 264-8740  
Hours of operation:  
Monday - Friday, 8 am to 5 pm (eastern standard time)  
Corporate website: www.wacker.com

**Emergency telephone no. (24h):** (517) 264-8500  
**Transportation emergency:** (800) 424-9300 (CHEMTREC, USA)  
(703) 527-3887 (CHEMTREC, international)

This SDS was prepared by the Regulatory Affairs and Product Safety Department (RAPS) of Wacker Chemical Corporation.

**2. Hazards Identification****2.1 Classification of the substance or mixture**

**Classification (GHS):**  
Not a hazardous substance or mixture.

**2.2 Label elements**

**Labelling (GHS):**  
No labeling according to GHS required.

**Reportable ingredients for labelling:**

Vinyl acetate/vinyl alcohol copolymer

Polydimethylsiloxane vinyl terminated

Water

**2.3 Other hazards**

No data available.

**3. Composition/information on ingredients****3.1 Chemical characterization (preparation)****Chemical characteristics**

Polydimethylsiloxane with vinyl groups (emulsion in water)

**3.2 Information on Ingredients:**

This material does not contain any reportable hazardous ingredients.

Substances listed in the Subsections "HAPS" and "California Proposition 65 Carcinogens / Reproductive Toxins" that are not listed in this section are only present at quantities below 0.1% for California Proposition 65 listed toxins or below 1% for non-carcinogenic HAPS or they are inextricably bound in the product.

**Safety Data Sheet**Material: **DEHESIVE® EM 427**

Version: 2.0 (US)

Date of print: 06/08/2015

Date of last alteration: 05/27/2015

**4. First-aid measures****4.1 General information:**

Get medical attention if irritation occurs or if breathing becomes difficult. Remove contaminated clothing and shoes.

**4.2 After inhalation**

If inhaled remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen.

**4.3 After contact with the skin**

For skin contact, immediately wipe away excess material. Use a waterless hand cleaner to remove as much of the remaining material as possible. Wash with soap and water.

**4.4 After contact with the eyes**

If contact with eyes, immediately hold eyelids apart and flush with plenty of water for at least 15 min.

**4.5 After swallowing**

For ingestion, if conscious, give several glasses of water but do not induce vomiting. If vomiting does occur, give additional fluids.

**4.6 Advice for the physician**

Treat symptomatically.

**5. Fire-fighting measures****5.1 Flammable properties:**

Property:	Value:	Method:
Flash point.....	not applicable	
Boiling point / boiling range .....	100 °C (212 °F) at 1013 hPa	
Lower explosion limit (LEL) .....	not applicable	
Upper explosion limit (UEL).....	not applicable	
Ignition temperature .....	not applicable	

**5.2 Fire and explosion hazards:**

This material does not present any unusual fire or explosion hazards.

**5.3 Recommended extinguishing media:**

Material does not burn. Water may be used to cool tanks and structures adjacent to the fire.

**5.4 Unsuitable extinguishing media:**

None.

**5.5 Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases**

not applicable

**5.6 Fire fighting procedures:**

Full turn-out gear and Self Contained Breathing Apparatus (SCBA) should be worn when fighting large fires.

**6. Accidental release measures****6.1 Precautions:**

Secure the area. Obtain appropriate PPE, supplies, and equipment prior to attempting any response.

HAZWOPER PPE Level: D

**6.2 Containment:**

Use loose absorbant material or prefabricated socks to dike around small quantities of spilled material (incidental spills). Cover openings to underground drains and sewers. If safe to do so, stop the leak at its source.

Spills of material which could reach surface waters must be reported to the United States Coast Guard National Response Center's toll free phone number (800) 424-8802.

## Safety Data Sheet

Material: DEHESIVE® EM 427

Version: 2.0 (US)

Date of print: 06/08/2015

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### 6.3 Methods for cleaning up

Silicone fluids are slippery; spills are a safety hazard. Apply sand or other inert granular material to improve traction. Liquids may be recovered using suction devices or pumps. If flammable, only air driven or properly rated electrical equipment should be used. Use absorbant materials to pick up residual liquids.

## 7. Handling and storage

### 7.1 General Information:

Always stir well before use.

### 7.2 Handling

**Precautions for safe handling:**

Keep container closed when not in use. Spilled substance increases risk of slipping.

**Precautions against fire and explosion:**

No special precautions against fire and explosion required.

### 7.3 Storage

**Conditions for storage rooms and vessels:**

Protect against frost.

**Advice for storage of incompatible materials:**

none known

**Further information for storage:**

Store in the original container. Store in a warm temperature regulated area to prevent freezing during cold weather conditions. Protect against sun.

**Minimum temperature allowed during storage and transportation:** 0 °C (32 °F)

Do not allow this material to freeze.

## 8. Exposure controls and personal protection

### 8.1 Engineering controls

**Ventilation:**

Use with adequate ventilation.

**Local exhaust:**

No special ventilation required.

### 8.2 Associate substances with specific control parameters such as limit values

none known

### 8.3 Personal protection equipment (PPE)

**Respiratory protection:**

Respiratory protection is not normally required.

**Hand protection:**

Any liquid-tight rubber or vinyl gloves.

**Eye protection:**

Safety glasses with side shields or chemical safety goggles.

**Other protective clothing or equipment:**

Additional protective clothing or equipment is not normally required. Provide eye bath and safety shower.

### 8.4 General hygiene and protection measures:

Avoid contact with eyes, skin and clothing. Do not eat, drink or smoke when handling. Follow standard industrial hygiene practices when using this material. Wash thoroughly after handling.

**Safety Data Sheet**

Material: DEHESIVE® EM 427

Version: 2.0 (US)

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Date of last alteration: 05/27/2015

**9. Physical and chemical properties****9.1 Appearance**

Physical state / form ..... : fluid - emulsion  
Colour ..... : milky white  
Odour ..... : characteristic

**9.2 Safety parameters**

Property:	Value:	Method:
Melting point / melting range .....	not applicable	
Boiling point / boiling range .....	100 °C (212 °F) at 1013 hPa	
Flash point.....	not applicable	
Ignition temperature .....	not applicable	
Lower explosion limit (LEL) .....	not applicable	
Upper explosion limit (UEL).....	not applicable	
Vapour pressure.....	not determined	
Density .....	0.99 g/cm <sup>3</sup> at 25 °C (77 °F)	
Water solubility / miscibility.....	completely miscible	
pH-Value .....	5 - 7 at 25 °C (77 °F) (1 g/l H <sub>2</sub> O)	
Viscosity (dynamic) .....	300 mPa.s	

**9.3 Further information**

Corrosive to Steel or Aluminum ..... : Not corrosive to steel or aluminum.

**10. Stability and reactivity****10.1 General information:**

Stable under normal conditions of use.

**10.2 Conditions to avoid**

Although this product is not expected to react with commonly used materials of construction and process equipment, it is advised that any rubber or plastic items such as hoses and gaskets be tested prior to large scale processing to ensure there is no degradation of performance or durability. Protect against frost.

**10.3 Materials to avoid**

acids , basic substances (e.g. alkalis, ammonia, amines) .

**10.4 Hazardous decomposition products**

Measurements have shown the formation of small amounts of formaldehyde at temperatures above about 150 °C (302 °F) through oxidation.

**10.5 Further information:**

Hazardous polymerization cannot occur.

**11. Toxicological information****11.1 Information on toxicological effects****12. Ecological information****12.1 Additional information**

According to our present knowledge no data known.

**13. Disposal considerations****13.1 Product disposal****Recommendation:**

Material that cannot be used or chemically reprocessed should be disposed of at an approved facility in accordance with any applicable governmental regulations. State and local regulations may be more stringent than Federal regulations.

**Safety Data Sheet**

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**13.2 Packaging disposal****Recommendation:**

Uncleaned containers should not be reused to hold another material due to the potential for reaction between residual product and incompatible materials. Uncleaned packaging should be treated with the same precautions as the material. After emptying contaminated containers may be cleansed and recycled.

**14. Transport information****14.1 US DOT & CANADA TDG SURFACE**

Valuation ..... : Not regulated for transport

Other Information..... : Protect from freezing, when exposed to cold temperatures approaching 0 °C (32 °F) or below.

**14.2 Transport by sea IMDG-Code**

Valuation ..... : Not regulated for transport

**14.3 Air transport ICAO-TI/IATA-DGR**

Valuation ..... : Not regulated for transport

**15. Regulatory information****15.1 U.S. Federal regulations****TSCA inventory status and TSCA information:**

This material or its components are listed on or are in compliance with the requirements of the TSCA Chemical Substance Inventory.

**TSCA 12(b) Export Notification:**

This material does not contain any TSCA 12(b) regulated chemicals.

**CERCLA Regulated Chemicals:**

This material does not contain any CERCLA regulated chemicals.

**SARA 302 EHS Chemicals:**

This material does not contain any SARA extremely hazardous substances.

**SARA 311/312 Hazard Class:**

This product does not present any SARA 311/312 hazards.

**SARA 313 Chemicals:**

This material does not contain any SARA 313 chemicals above de minimus levels.

**HAPS (Hazardous Air Pollutants):**

This material does not contain any hazardous air pollutants.

**15.2 U.S. State regulations****California Proposition 65 Carcinogens:**

This material does not contain any chemicals known to the state of California to cause cancer.

**California Proposition 65 Reproductive Toxins:**

This material does not contain any chemicals known to the State of California to cause reproductive effects.

**Massachusetts Substance List:**

This material contains no listed components.

**New Jersey Right-to-Know Hazardous Substance List:**

This material contains no listed components.

**Pennsylvania Right-to-Know Hazardous Substance List:**

This material contains no listed components.

**15.3 Canadian regulations**

This product has been classified in accordance with the Hazard criteria of the CPR and the SDS contains all the information required by the CPR.

**Safety Data Sheet**Material: **DEHESIVE® EM 427**

Version: 2.0 (US)

Date of print: 06/08/2015

Date of last alteration: 05/27/2015

**WHMIS Hazard Classes:**

None.

**DSL Status:**

This material or its components are listed on the Canadian Domestic Substances List.

**Non-DSL Chemicals:**

This material does not contain any non-DSL chemicals.

**Canadian Ingredient Disclosure List:**

This material contains no listed components.

**15.4 Details of international registration status**

Relevant information about individual substance inventories, where available, is given below.

South Korea (Republic of Korea).....	<b>ECL</b> (Existing Chemicals List): This product is listed in, or complies with, the substance inventory.
Japan.....	<b>ENCS</b> (Handbook of Existing and New Chemical Substances): This product is listed in, or complies with, the substance inventory.
Australia .....	<b>AICS</b> (Australian Inventory of Chemical Substances): This product is listed in, or complies with, the substance inventory.
People's Republic of China.....	<b>IECSC</b> (Inventory of Existing Chemical Substances in China): This product is listed in, or complies with, the substance inventory.
Canada.....	<b>DSL</b> (Domestic Substance List): This product is listed in, or complies with, the substance inventory.
Philippines .....	<b>PICCS</b> (Philippine Inventory of Chemicals and Chemical Substances): This product is listed in, or complies with, the substance inventory.
United States of America (USA).....	<b>TSCA</b> (Toxic Substance Control Act Chemical Substance Inventory): This product is listed in, or complies with, the substance inventory.
European Economic Area (EEA).....	<b>REACH</b> (Regulation (EC) No 1907/2006):

General note: the registration obligations for substances imported into the EEA or manufactured within the EEA by the supplier mentioned in section 1 are fulfilled by the said supplier. The registration obligations for substances imported into the EEA by customers or other downstream users must be fulfilled by the latter.

**16. Other information****16.1 Additional information:**

This Safety Data Sheet (SDS) meets the requirements of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200). This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by the CPR. This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief accurate and reliable as of the date compiled. However, no representation, warranty or guarantee expressed or implied, is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information. Nothing herein shall be construed as a recommendation for uses which infringe valid patents or as extending a license under valid patents. This SDS provides selected regulatory information on this product, including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.

Vertical lines in the left-hand margin indicate changes compared with the previous version.

All deliveries are subject to the WACKER SILICONES Health Care Policy, which is available at [www.wacker.com](http://www.wacker.com).

**16.2 Glossary of Terms:**

ACGIH - American Conference of Governmental Industrial Hygienists  
DOT - Department of Transportation  
hPa - Hectopascals  
mPa\*s - Milli Pascal-Seconds  
OSHA - Occupational Safety and Health Administration  
PEL - Permissible Exposure Limit

ppm - Parts per Million  
SARA - Superfund Amendments and Reauthorization Act  
STEL - Short Term Exposure Limit  
TSCA - Toxic Substances Control Act  
TWA - Time Weighted Average  
WHMIS - Canadian Workplace Hazardous Materials Identification System

**Safety Data Sheet**

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**Material:** DEHESIVE® EM 427

Version: 2.0 (US)

Date of print: 06/08/2015

Date of last alteration: 05/27/2015

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<b>Flash point determination methods</b> .....	<b>Common name</b>
ASTM D56.....	Tagliabue (Tag) closed cup
ASTM D92, DIN 51376, ISO 2592 .....	Cleveland open cup
ASTM D93, DIN 51758, ISO 2719 .....	Pensky-Martens closed cup
ASTM D3278, DIN 55680, ISO 3679 .....	Setaflash or Rapid closed cup
DIN 51755.....	Abel-Pensky closed cup

**16.3 Conversion table:**

Pressure:.....: 1 hPa \* 0.75 = 1 mm Hg = 1 torr; 1 bar = 1000 hPa  
Viscosity:.....: 1 mPa\*s = 1 centipoise (cP)





## Experimental Product

1	Chemical Product and Company Identification
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*Lubrizol Advanced Materials, Inc.  
207 Telegraph Dr.  
Gastonia, NC 28056  
Telephone: (704) 915-4118*

**Product Trade Name** DLR134204C  
**CAS Number** Not applicable for mixtures.  
**Synonyms** None.  
**Generic Chemical Name** Mixture.  
**Product Type** Non Skid Transportation  
**Preparation/Revision Date** 04 March 2013

**MSDS No.** 0001

2	Hazards Identification
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**Appearance** White to off white liquid.  
**Odor** Acrid  
**Principal Hazards** Caution.  
 May cause eye irritation.

See Section 11 for complete health hazard information.

3	Composition/Information on Ingredients
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**Hazardous Ingredients** This material contains no ingredients requiring disclosure under regulatory hazard criteria for this jurisdiction. See Section 11 for additional details.

4	First Aid Measures
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**Eyes** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.  
**Skin** Wash with soap and water. Get medical attention if irritation develops.  
**Inhalation** Remove exposed person to fresh air if adverse effects are observed.  
**Oral** Treat symptomatically. Get medical attention.  
**Additional Information** Note to physician: Treat symptomatically.

5	Fire Fighting Measures
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**Flash Point** Not applicable.  
**Extinguishing Media** Water spray, dry chemical, foam. CO2 may be ineffective on large fires.  
**Firefighting Procedures** Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.  
**Unusual Fire & Explosion Hazards** Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional information.

6	Accidental Release Measures
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**Spill Procedures** Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

7	Handling and Storage
<b>Pumping Temperature</b> <b>Maximum Handling Temperature</b> <b>Handling Procedures</b>	Not determined. Not determined. Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.
<b>Maximum Storage Temperature</b> <b>Storage Procedures</b>	Not determined. Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.
<b>Maximum Loading Temperature</b>	Not determined.
8	Exposure Controls/Personal Protection
<b>Exposure Limits</b>	None established
<b>Other Exposure Limits</b>	None known.
<b>Engineering Controls</b>	Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.
<b>Gloves Procedures</b>	Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.
<b>Eye Protection</b>	Safety Glasses.
<b>Respiratory Protection</b>	Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.
<b>Clothing Recommendation</b>	No special clothing requirement.
9	Physical and Chemical Properties
<b>Flash Point</b>	Not applicable.
<b>Upper Flammable Limit</b>	Not determined.
<b>Lower Flammable Limit</b>	Not determined.
<b>Autoignition Point</b>	Not determined.
<b>Explosion Data</b>	Material does not have explosive properties.
<b>Vapor Pressure</b>	~ 18 mm Hg (20 °C)
<b>pH</b>	7.5 - 8.5
<b>Specific Gravity</b>	1.04 (20 °C)
<b>Bulk Density</b>	~ 8.7 Lb/gal, ~ 1.04 Kg/L
<b>Water Solubility</b>	Dispersible.
<b>Percent Solid</b>	~ 48% By Weight
<b>Percent Volatile</b>	52% By Weight
<b>Volatile Organic Compound</b>	Not determined.
<b>Vapor Density</b>	< 1 Air=1
<b>Evaporation Rate</b>	< 1 Butyl acetate=1
<b>Odor</b>	Acrid
<b>Appearance</b>	White to off white liquid.
<b>Viscosity</b>	< 400 Centipoise (20 °C)
<b>Odor Threshold</b>	Not determined.
<b>Boiling Point</b>	~ 100 °C, ~ 212 °F(Typical)
<b>Pour Point Temperature</b>	Not determined.
<b>Melting / Freezing Point</b>	~ 0 °C, ~ 32 °F
<p><i>The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.</i></p>	
10	Stability and Reactivity
<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	Acids. Bases. Strong oxidizing agents.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion

conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. Nitrogen oxides. Acrylate monomers

**Conditions to Avoid**

Do not freeze.

11	Toxicological Information
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**– ACUTE EXPOSURE –**

<b>Eye Irritation</b>	May cause eye irritation. Does not meet Canadian D2B or EU R36 criteria. Based on data from components or similar materials. Vapors may cause irritation.
<b>Skin Irritation</b>	Not expected to be a primary skin irritant. Based on data from components or similar materials. Repeated or prolonged skin contact may cause irritation.
<b>Respiratory Irritation</b>	If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract. Based on data from components or similar materials.
<b>Dermal Toxicity</b>	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.
<b>Inhalation Toxicity</b>	Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid inhalation of mists or vapors.
<b>Oral Toxicity</b>	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Ingestion of this material may cause gastrointestinal irritation.
<b>Dermal Sensitization</b>	No data available to indicate product or components may be a skin sensitizer.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

**– CHRONIC EXPOSURE –**

<b>Chronic Toxicity</b>	No data available to indicate product or components present at greater than 1% are chronic health hazards.
<b>Carcinogenicity</b>	No data available to indicate any components present at greater than 0.1% may present a carcinogenic hazard.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive Toxicity</b>	No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
<b>Teratogenicity</b>	No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

**– ADDITIONAL INFORMATION –**

<b>Other</b>	No other health hazards known.
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12	Ecological Information
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**– ENVIRONMENTAL TOXICITY –**

<b>Freshwater Fish Toxicity</b>	The acute LC50 is 10 - 100 mg/L based on component data.
<b>Freshwater Invertebrates Toxicity</b>	Not determined.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

**– ENVIRONMENTAL FATE –**

<b>Biodegradation</b>	Adequate data is not available to estimate the biodegradation potential of this material.
<b>Bioaccumulation</b>	25% or greater of the components display no potential to bioconcentrate.
<b>Soil Mobility</b>	Not determined.

13	Disposal Considerations
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<b>Waste Disposal</b>	This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.
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14	Transport Information
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<b>ICAO/IATA I</b>	Not regulated.
<b>ICAO/IATA II</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IMDG EMS Fire</b>	Not applicable.
<b>IMDG EMS Spill</b>	Not applicable.
<b>IMDG MFAG</b>	Not applicable.
<b>MARPOL Annex II</b>	Not determined.
<b>USCG Compatibility</b>	Not determined.

**DLR134204C**

U.S. DOT Bulk Not regulated.  
 DOT NAERG Not applicable.  
 U.S. DOT (Intermediate) Not regulated.  
 U.S. DOT Intermediate NAERG Not applicable.  
 U.S. DOT Non-Bulk Not regulated.  
 U.S. DOT Non-Bulk NAERG Not applicable.  
 Canada Not regulated.  
 Mexico Not regulated.  
 Bulk Quantity 85000 KG, 187391 lbs.  
 Intermediate Quantity 11000 KG, 24251 lbs.  
 Non-Bulk Quantity 400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	Regulatory Information
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**-- Global Chemical Inventories --**

**USA** All components of this material are on the US TSCA Inventory or are exempt.

**Other TSCA Reg.** None known.

**EU** To obtain information on the REACH compliance status of this product, please visit [Lubrizol.com/REACH](http://Lubrizol.com/REACH), or e-mail us at [REACH\\_MSDS\\_INQUIRIES@Lubrizol.com](mailto:REACH_MSDS_INQUIRIES@Lubrizol.com)

**Japan** May require notification in Japan.

**Australia** May require notification before sale under Australian regulations.

**New Zealand** May require notification before sale under New Zealand regulations.

**Canada** May require notification before sale under Canadian regulations.

**Switzerland** May require notification before sale in Switzerland.

**Korea** May require notification before sale in Korea.

**Philippines** May require notification before sale under Philippines Republic Act 6969.

**China** This product may require notification in China.

**Taiwan** May require notification before sale in Taiwan.

**-- Other U.S. Federal Regulations --**

**SARA Ext. Haz. Subst.** This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

**SARA Section 313** This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.

**SARA 311 Classifications**

Acute Hazard	No
Chronic Hazard	No
Fire Hazard	No
Reactivity Hazard	No

**CERCLA Hazardous Substances** None known.

**-- State Regulations --**

**Cal. Prop. 65** This product does not intentionally contain any chemicals known by the State of California to cause cancer and/or birth defects. Moreover, we do not routinely analyze its products for impurities which may be such chemicals.

**-- Product Registrations --**

**U.S. Fuel Registration** Not applicable.

**Finnish Registration Number** Not Registered

**Swedish Registration Number** Not Registered

**Norwegian Registration Number** Not Registered

**Danish Registration Number** Not Registered

**Swiss Registration Number** Not Registered

**Italian Registration Number** Not Registered

**-- Other / International --**

**Miscellaneous Regulatory Information** Not determined.

16	Other Information
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<b>US NFPA Codes</b>	<b>Health</b>	<b>Fire</b>	<b>Reactivity</b>	<b>Special</b>
	1	1	0	NE

DLR134204C

(NE) - None established

**HMIS Codes**

Health	Fire	Reactivity
1	1	0

**Precautionary Labels**

Caution.  
• May cause eye irritation.

**Revision Indicators**

This MSDS has no revisions since 4 March 2013

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*Users Responsibility/Disclaimer of Liability: The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.*





## Experimental Product

## 1 Chemical Product and Company Identification

*Lubrizol Advanced Materials, Inc.  
207 Telegraph Dr.  
Gastonia, NC 28056  
Telephone: (704) 915-4118*

**Product Trade Name** DLR144346-31  
**CAS Number** Not applicable for mixtures.  
**Synonyms** Latex.  
**Generic Chemical Name** Compound  
**Product Type** Acrylic  
**Preparation/Revision Date** 04 March 2013  
**MSDS No.** 0001

## 2 Hazards Identification

**Appearance** White viscous liquid.  
**Odor** Slight Ammonia  
**Principal Hazards** Caution.  
 May cause eye irritation.

See Section 11 for complete health hazard information.

## 3 Composition/Information on Ingredients

**Hazardous Ingredients** This material contains no ingredients requiring disclosure under regulatory hazard criteria for this jurisdiction. See Section 11 for additional details.

## 4 First Aid Measures

**Eyes** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.  
**Skin** Wash with soap and water. Get medical attention if irritation develops.  
**Inhalation** Remove exposed person to fresh air if adverse effects are observed.  
**Oral** Treat symptomatically. Get medical attention.  
**Additional Information** Note to physician: Treat symptomatically.

## 5 Fire Fighting Measures

**Flash Point** Not applicable.  
**Extinguishing Media** Water spray, dry chemical, foam. CO2 may be ineffective on large fires.  
**Firefighting Procedures** Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.  
**Unusual Fire & Explosion Hazards** Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional information.

## 6 Accidental Release Measures

**Spill Procedures** Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

7	Handling and Storage
Pumping Temperature	Not determined.
Maximum Handling Temperature	Not determined.
Handling Procedures	Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.
Maximum Storage Temperature	Not determined.
Storage Procedures	Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.
Maximum Loading Temperature	Not determined.
8	Exposure Controls/Personal Protection
Exposure Limits	None established
Other Exposure Limits	None known.
Engineering Controls	Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.
Gloves Procedures	Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.
Eye Protection	Safety Glasses.
Respiratory Protection	Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.
Clothing Recommendation	No special clothing requirement.
9	Physical and Chemical Properties
Flash Point	Not applicable.
Upper Flammable Limit	Not determined.
Lower Flammable Limit	Not determined.
Autoignition Point	Not determined.
Explosion Data	Material does not have explosive properties.
Vapor Pressure	~ 18 mm Hg (20 °C)
pH	8.0-9.0
Specific Gravity	1.04 (20 °C)
Bulk Density	~ 8.7 Lb/gal, ~ 1.04 Kg/L
Water Solubility	Dispersible.
Percent Solid	~ 48% By Weight
Percent Volatile	49 - 52% By Weight
Volatile Organic Compound	Not determined.
Vapor Density	< 1 Air= 1
Evaporation Rate	< 1 Butyl acetate= 1
Odor	Acrid
Appearance	White viscous liquid.
Viscosity	12,000 Centipoise (20 °C)
Odor Threshold	Not determined.
Boiling Point	~ 100 °C, ~ 212 °F(Typical)
Pour Point Temperature	Not determined.
Melting / Freezing Point	~ 0 °C, ~ 32 °F
<i>The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.</i>	
10	Stability and Reactivity
Stability	Material is normally stable at moderately elevated temperatures and pressures.
Decomposition Temperature	Not determined.
Incompatibility	Acids. Bases. Strong oxidizing agents.
Polymerization	Will not occur.
Thermal Decomposition	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion



## Experimental Product

## 1 Chemical Product and Company Identification

*Lubrizol Advanced Materials, Inc.  
207 Telegraph Dr.  
Gastonia, NC 28056  
Telephone: (704) 915-4118*

Product Trade Name DLR144346-31  
CAS Number Not applicable for mixtures.  
Synonyms Latex.  
Generic Chemical Name Compound  
Product Type Acrylic  
Preparation/Revision Date 04 March 2013  
MSDS No. 0001

## 2 Hazards Identification

Appearance White viscous liquid.  
Odor Slight Ammonia  
Principal Hazards Caution.  
May cause eye irritation.

See Section 11 for complete health hazard information.

## 3 Composition/Information on Ingredients

Hazardous Ingredients This material contains no ingredients requiring disclosure under regulatory hazard criteria for this jurisdiction. See Section 11 for additional details.

## 4 First Aid Measures

Eyes Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.  
Skin Wash with soap and water. Get medical attention if irritation develops.  
Inhalation Remove exposed person to fresh air if adverse effects are observed.  
Oral Treat symptomatically. Get medical attention.  
Additional Information Note to physician: Treat symptomatically.

## 5 Fire Fighting Measures

Flash Point Not applicable.  
Extinguishing Media Water spray, dry chemical, foam. CO2 may be ineffective on large fires.  
Firefighting Procedures Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.  
Unusual Fire & Explosion Hazards Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional information.

## 6 Accidental Release Measures

Spill Procedures Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

## 7 Handling and Storage

<b>Pumping Temperature</b>	Not determined.
<b>Maximum Handling Temperature</b>	Not determined.
<b>Handling Procedures</b>	Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.
<b>Maximum Storage Temperature</b>	Not determined.
<b>Storage Procedures</b>	Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.
<b>Maximum Loading Temperature</b>	Not determined.

## 8 Exposure Controls/Personal Protection

<b>Exposure Limits</b>	None established
<b>Other Exposure Limits</b>	None known.
<b>Engineering Controls</b>	Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.
<b>Gloves Procedures</b>	Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.
<b>Eye Protection</b>	Safety Glasses.
<b>Respiratory Protection</b>	Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.
<b>Clothing Recommendation</b>	No special clothing requirement.

## 9 Physical and Chemical Properties

<b>Flash Point</b>	Not applicable.
<b>Upper Flammable Limit</b>	Not determined.
<b>Lower Flammable Limit</b>	Not determined.
<b>Autoignition Point</b>	Not determined.
<b>Explosion Data</b>	Material does not have explosive properties.
<b>Vapor Pressure</b>	~ 18 mm Hg (20 °C)
<b>pH</b>	8.0-9.0
<b>Specific Gravity</b>	1.04 (20 °C)
<b>Bulk Density</b>	~ 8.7 Lb/gal, ~ 1.04 Kg/L
<b>Water Solubility</b>	Dispersible.
<b>Percent Solid</b>	~ 48% By Weight
<b>Percent Volatile</b>	49 - 52% By Weight
<b>Volatile Organic Compound</b>	Not determined.
<b>Vapor Density</b>	< 1 Air=1
<b>Evaporation Rate</b>	< 1 Butyl acetate=1
<b>Odor</b>	Acrid
<b>Appearance</b>	White viscous liquid.
<b>Viscosity</b>	12,000 Centipoise (20 °C)
<b>Odor Threshold</b>	Not determined.
<b>Boiling Point</b>	~ 100 °C, ~ 212 °F(Typical)
<b>Pour Point Temperature</b>	Not determined.
<b>Melting / Freezing Point</b>	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

<b>10</b>	<b>Stability and Reactivity</b>
<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	Acids. Bases. Strong oxidizing agents.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion

conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. Nitrogen oxides. Acrylate monomers

**Conditions to Avoid**

Do not freeze.

11	Toxicological Information
----	---------------------------

– ACUTE EXPOSURE –

<b>Eye Irritation</b>	May cause eye irritation. Does not meet Canadian D2B or EU R36 criteria. Based on data from components or similar materials. Vapors may cause irritation.
<b>Skin Irritation</b>	Not expected to be a primary skin irritant. Based on data from components or similar materials. Repeated or prolonged skin contact may cause irritation.
<b>Respiratory Irritation</b>	If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract. Based on data from components or similar materials.
<b>Dermal Toxicity</b>	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.
<b>Inhalation Toxicity</b>	Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid inhalation of mists or vapors.
<b>Oral Toxicity</b>	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Ingestion of this material may cause gastrointestinal irritation.
<b>Dermal Sensitization</b>	No data available to indicate product or components may be a skin sensitizer.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

– CHRONIC EXPOSURE –

<b>Chronic Toxicity</b>	No data available to indicate product or components present at greater than 1% are chronic health hazards.
<b>Carcinogenicity</b>	No data available to indicate any components present at greater than 0.1% may present a carcinogenic hazard.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive Toxicity</b>	No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
<b>Teratogenicity</b>	No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

– ADDITIONAL INFORMATION –

<b>Other</b>	No other health hazards known.
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12	Ecological Information
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– ENVIRONMENTAL TOXICITY –

<b>Freshwater Fish Toxicity</b>	The acute LC50 is 10 - 100 mg/L based on component data.
<b>Freshwater Invertebrates Toxicity</b>	Not determined.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

– ENVIRONMENTAL FATE –

<b>Biodegradation</b>	Adequate data is not available to estimate the biodegradation potential of this material.
<b>Bioaccumulation</b>	25% or greater of the components display no potential to bioconcentrate.
<b>Soil Mobility</b>	Not determined.

13	Disposal Considerations
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<b>Waste Disposal</b>	This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.
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14	Transport Information
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<b>ICAO/IATA I</b>	Not regulated.
<b>ICAO/IATA II</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IMDG EMS Fire</b>	Not applicable.
<b>IMDG EMS Spill</b>	Not applicable.
<b>IMDG MFAG</b>	Not applicable.
<b>MARPOL Annex II</b>	Not determined.
<b>USCG Compatibility</b>	Not determined.

**DLR144346-31**

U.S. DOT Bulk	Not regulated.
DOT NAERG	Not applicable.
U.S. DOT (intermediate)	Not regulated.
U.S. DOT Intermediate NAERG	Not applicable.
U.S. DOT Non-Bulk	Not regulated.
U.S. DOT Non-Bulk NAERG	Not applicable.
Canada	Not regulated.
Mexico	Not regulated.
Bulk Quantity	85000 KG, 187391 lbs.
Intermediate Quantity	11000 KG, 24251 lbs.
Non-Bulk Quantity	400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

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**Regulatory Information**

**– Global Chemical Inventories –**

<b>USA</b>	All components of this material are on the US TSCA Inventory or are exempt.
<b>Other TSCA Reg.</b>	None known.
<b>EU</b>	To obtain information on the REACH compliance status of this product, please visit <a href="http://Lubrizol.com/REACH">Lubrizol.com/REACH</a> , or e-mail us at <a href="mailto:REACH_MSDS_INQUIRIES@Lubrizol.com">REACH_MSDS_INQUIRIES@Lubrizol.com</a>
<b>Japan</b>	May require notification in Japan.
<b>Australia</b>	May require notification before sale under Australian regulations.
<b>New Zealand</b>	May require notification before sale under New Zealand regulations.
<b>Canada</b>	May require notification before sale under Canadian regulations.
<b>Switzerland</b>	May require notification before sale in Switzerland.
<b>Korea</b>	May require notification before sale in Korea.
<b>Philippines</b>	May require notification before sale under Philippines Republic Act 6969.
<b>China</b>	This product may require notification in China.
<b>Taiwan</b>	May require notification before sale in Taiwan.

**– Other U.S. Federal Regulations –**

<b>SARA Ext. Haz. Subst.</b>	This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.								
<b>SARA Section 313</b>	This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.								
<b>SARA 311 Classifications</b>	<table border="0"> <tr> <td>Acute Hazard</td> <td>No</td> </tr> <tr> <td>Chronic Hazard</td> <td>No</td> </tr> <tr> <td>Fire Hazard</td> <td>No</td> </tr> <tr> <td>Reactivity Hazard</td> <td>No</td> </tr> </table>	Acute Hazard	No	Chronic Hazard	No	Fire Hazard	No	Reactivity Hazard	No
Acute Hazard	No								
Chronic Hazard	No								
Fire Hazard	No								
Reactivity Hazard	No								
<b>CERCLA Hazardous Substances</b>	None known.								

**– State Regulations –**

<b>Cal. Prop. 65</b>	This product does not intentionally contain any chemicals known by the State of California to cause cancer and/or birth defects. Moreover, we do not routinely analyze its products for impurities which may be such chemicals.
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**– Product Registrations –**

<b>U.S. Fuel Registration</b>	Not applicable.
<b>Finnish Registration Number</b>	Not Registered
<b>Swedish Registration Number</b>	Not Registered
<b>Norwegian Registration Number</b>	Not Registered
<b>Danish Registration Number</b>	Not Registered
<b>Swiss Registration Number</b>	Not Registered
<b>Italian Registration Number</b>	Not Registered

**– Other / International –**

<b>Miscellaneous Regulatory Information</b>	Not determined.
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**Other Information**

**US NFPA Codes**

<b>Health</b>	<b>Fire</b>	<b>Reactivity</b>	<b>Special</b>
1	0	0	N/E

DLR144346-31

(N/E) - None established

**HMIS Codes**

Health	Fire	Reactivity
1	0	0

**Precautionary Labels**

Caution.  
1 May cause eye irritation.

**Revision Indicators**

This MSDS has no revisions since 22 July 2014

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*Users Responsibility/Disclaimer of Liability: The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.*



**1. PRODUCT AND COMPANY IDENTIFICATION**Company

Arkema Inc.  
900 First Avenue  
King of Prussia, Pennsylvania 19406

Arkema Coating Resins

Customer Service Telephone Number: (877) 331-6696  
(Monday through Friday, 8:00 AM to 5:00 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300  
(24 hrs., 7 days a week)  
Medical: Rocky Mountain Poison Center: (866) 767-5089  
(24 hrs., 7 days a week)

Product Information

Product name: ENCOR 9176  
Synonyms: Not available  
Molecular formula: Complex mixture  
Chemical family: Polymer latex  
Product use: Binder, For Industrial Use Only.

**2. HAZARDS IDENTIFICATION**Emergency Overview

Color: white  
Physical state: liquid  
Form: aqueous dispersion  
Odor: slightly acrylic

\*Classification of the substance or mixture:  
Not a hazardous substance or mixture.

GHS-LabelingSupplemental Hazard Statements:

Processing may release vapors and/or fumes which cause eye, skin and respiratory tract irritation.

Supplemental information:Potential Health Effects:

The product, in the form supplied, is not anticipated to produce significant adverse human health effects. Contains high molecular weight polymer(s). Effects due to processing releases: Irritating to eyes, respiratory system and skin.

Prolonged or repeated exposure may cause: headache, drowsiness, nausea, weakness, (severity of effects)

depends on extent of exposure).

**Other:**

Handle in accordance with good industrial hygiene and safety practice. Dried product may stick to the skin causing irritation upon removal. This product may release fume and/or vapor of variable composition depending on processing time and temperature.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS-No.	Wt/Wt	GHS Classification**
Styrene-acrylate based polymer	Proprietary*	>= 60 - <= 100 %	Not classified
Water	7732-18-5	>= 30 - < 60 %	Not classified

\*The specific chemical identity is withheld because it is trade secret information of Arkema Inc.

\*\*For the full text of the H-Statements mentioned in this Section, see Section 16.

**4. FIRST AID MEASURES**

**Inhalation:**

If inhaled, remove victim to fresh air.

**Skin:**

In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eyes:**

Immediately flush eye(s) with plenty of water.

**Ingestion:**

If swallowed, DO NOT induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

**5. FIREFIGHTING MEASURES**

**Extinguishing media (suitable):**

Water spray, Carbon dioxide (CO2), Foam, Dry chemical

**Protective equipment:**

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

**Further firefighting advice:**

Fire fighting equipment should be thoroughly decontaminated after use.

**Fire and explosion hazards:**

When burned, the following hazardous products of combustion can occur:

Carbon oxides

Hazardous organic compounds

**6. ACCIDENTAL RELEASE MEASURES****In case of spill or leak:**

Prevent further leakage or spillage if you can do so without risk. Ventilate the area. Avoid generation of vapors. Contain and collect spillage with non-combustible absorbent material such as clean sand, earth, diatomaceous earth or non-acidic clay and place into suitable properly labeled containers for prompt disposal. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

**7. HANDLING AND STORAGE****Handling****General information on handling:**

Avoid breathing processing vapor or mist.

Handle in accordance with good Industrial hygiene and safety practices. These practices include avoiding unnecessary exposure and removal of material from eyes, skin, and clothing.

**Storage****General information on storage conditions:**

Keep in a dry, cool place. This material is not hazardous under normal storage conditions; however, material should be stored in closed containers, in a secure area to prevent container damage and subsequent spillage. Store in upright position only. Keep container closed when not in use.

**Storage stability – Remarks:**

Stable under normal conditions. May coagulate if frozen at 0°C (32°F). Material may develop bacteria odor on long term storage.

**Storage incompatibility – General:**

May cause coagulation:

Acids

Multivalent metal salts

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Airborne Exposure Guidelines:****Engineering controls:**

Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

**Respiratory protection:**

Avoid breathing processing vapor or mist. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components and substances released during processing. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

**Skin protection:**

Processing of this product releases vapors or fumes which may cause skin irritation. Minimize skin contamination by following good industrial hygiene practice. Wearing protective gloves is recommended. Wash hands and contaminated skin thoroughly after contact with processing fumes or vapors. When handling this material, gloves of the following type(s) should be worn: neoprene, nitrile, polyvinylchloride, butyl-rubber, chlorinated polyethylene, polyethylene (PE) and ethyl vinyl alcohol laminate (EVAL). Wash thoroughly after handling.

**Eye protection:**

Use good industrial practice to avoid eye contact. Processing of this product releases vapors or fumes which may cause eye irritation. Where eye contact may be likely, wear chemical goggles and have eye flushing equipment available.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Color:</b>	white
<b>Physical state:</b>	liquid
<b>Form:</b>	aqueous dispersion
<b>Odor:</b>	slightly acrylic
<b>Odor threshold:</b>	No data available
<b>Flash point</b>	Not applicable
<b>Auto-ignition temperature:</b>	Not applicable
<b>Lower flammable limit (LFL):</b>	No data available
<b>Upper flammable limit (UFL):</b>	No data available

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<b>pH:</b>	estimated 7.5 - 9.0
<b>Density:</b>	0.9982 g/cm <sup>3</sup> (68 °F (20 °C)) (data for Water (7732-18-5))
<b>Specific Gravity (Relative density):</b>	estimated 0.95 - 1.10 Water=1 (liquid)
<b>Vapor pressure:</b>	17.500 mmHg (68 °F (20 °C)) (data for Water (7732-18-5))
<b>Vapor density:</b>	0.6 kg/m <sup>3</sup> (data for Water (7732-18-5))
<b>Boiling point/boiling range:</b>	212 °F (100 °C) (data for Water (7732-18-5))
<b>Freezing point:</b>	32 °F (0 °C) (data for Water (7732-18-5))
<b>Evaporation rate:</b>	No data available
<b>Solubility in water:</b>	miscible
<b>Viscosity, dynamic:</b>	estimated < 1,000 mPa.s
<b>Oil/water partition coefficient:</b>	No data available
<b>Thermal decomposition</b>	No data available
<b>Flammability:</b>	See GHS Classification in Section 2

**10. STABILITY AND REACTIVITY****Stability:**

This material is chemically stable under normal and anticipated storage, handling and processing conditions.

**Hazardous reactions:**

Hazardous polymerization does not occur.

**Materials to avoid:**

May cause coagulation:

Acids

Multivalent metal salts

**Conditions / hazards to avoid:**

See HANDLING AND STORAGE section of this MSDS for specified conditions. See Hazardous Decomposition Products below.

**Hazardous decomposition products:**

Thermal decomposition giving flammable and toxic products

Acrylates

Methacrylates

Carbon oxides

Hazardous organic compounds

**11. TOXICOLOGICAL INFORMATION**

Data on this material and/or its components and/or a similar material are summarized below.

Data for ENCOR 9176

Acute toxicity

**Oral:**

May be harmful if swallowed. (rat) LD50 > 2,000 mg/kg. (data for a similar material)

**Dermal:**

May be harmful in contact with skin. (rat) LD50 > 2,000 mg/kg. (data for a similar material)

Data for Styrene-acrylate based polymer (Proprietary)

Other information

The information presented is from representative materials in this chemical class. The results may vary depending on the test substance.

Effects due to processing releases or residual monomer:

Possible cross sensitization with other acrylates and methacrylates

**12. ECOLOGICAL INFORMATION**

Chemical Fate and Pathway

No data are available.

Ecotoxicology

Data on this material and/or its components and/or a similar material are summarized below.

Data for ENCOR 9176

Aquatic toxicity data:

Practically nontoxic. LC50 > 100 mg/l (dispersion, data for a similar material)

**13. DISPOSAL CONSIDERATIONS**

**Waste disposal:**

Where possible recycling is preferred to disposal or incineration. If recycling is not an option, incinerate or dispose of in accordance with federal, state, and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

**14. TRANSPORT INFORMATION**

**US Department of Transportation (DOT):** not regulated

**International Maritime Dangerous Goods Code (IMDG):** not regulated

**15. REGULATORY INFORMATION**

**Chemical Inventory Status**

EU. EINECS	EINECS	Does not conform
United States TSCA Inventory	TSCA	This product complies with TSCA Inventory requirements.
Canadian Domestic Substances List (DSL)	DSL	All components of this product are on the Canadian DSL.
China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC (CN)	Conforms to
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	Does not conform
Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	Does not conform
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	Does not conform
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	Does not conform
Australia Inventory of Chemical Substances (AICS)	AICS	Conforms to

**United States – Federal Regulations**

**SARA Title III – Section 302 Extremely Hazardous Chemicals:**

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

**SARA Title III - Section 311/312 Hazard Categories:**

No SARA Hazards

**SARA Title III – Section 313 Toxic Chemicals:**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):**

The components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity.

**United States – State Regulations**

**New Jersey Right to Know**

No components are subject to the New Jersey Right to Know Act.

**Pennsylvania Right to Know**

<u>Chemical Name</u>	<u>CAS-No.</u>
Styrene-acrylate based polymer	Proprietary
Water	7732-18-5

**California Prop. 65**

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive defects.

**16. OTHER INFORMATION**

**Latest Revision(s):**

Reference number:	00000063865
Date of Revision:	05/15/2015
Date Printed:	05/15/2015

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## Material Safety Data Sheet

SHAMROCK TECHNOLOGIES, INC.  
FOOT of PACIFIC STREET  
NEWARK, NJ 07114  
USA

CUSTOMER SERVICE: (800) 349-1822  
REGULATORY INFORMATION: (8:00 to 4:00) (973) 242-2999 ext. 235  
FAX: (732) 355-1995  
EMERGENCIES: CHEMTREC (800) 424-9300

### SECTION I: PRODUCT IDENTIFICATION

PRODUCT NAME:	<i>Hydropel QB</i>	WHMIS:	HMIS:	
PRODUCT CLASS:	<i>Hydrocarbon Wax Blend</i>	<i>Not WHMIS Controlled.</i>	HEALTH	<i>1</i>
CHEMICAL NAME:	<i>Mixture</i>		FLAMMABILITY	<i>1</i>
SYNONYMS:	<i>None</i>		REACTIVITY	<i>0</i>
CAS NUMBER:	<i>N/A Mixture</i>		PROTECTION	<i>F</i>

### SECTION II: HAZARDOUS INGREDIENTS

CAS NUMBER	COMPONENT	%	OSHA PEL	ACGIH TLV
	<i>None Known</i>			

### SECTION III: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: *White powder with a mild odor. Slippery when spilled.*

#### POTENTIAL HEALTH EFFECTS:

EYE: *May cause slight irritation*  
SKIN: *Repeated or prolonged exposure may cause skin irritation.*  
INGESTION: *Ingestion should be avoided.*  
INHALATION: *Irritating to the nose, throat and respiratory tract.*

CHRONIC EFFECTS: *None Known*  
CARCINOGEN: *NTP: Not Listed IARC: Not Listed OSHA: Not Listed*  
CONDITIONS AGGRAVATED: *None Known.*

### SECTION IV: FIRST AID MEASURES

EYE: *Flush eyes with water for at least 15 minutes. If irritation persists consult a physician.*  
SKIN: *Wash with soap and water. Seek medical attention if irritation develops or persists.  
A burn from molten material should be treated as a thermal burn. Hot material tends to cling to flesh, especially after solidifying. Cool as soon as possible. Seek medical attention.*  
INGESTION: *Do not induce vomiting. Seek medical attention.*  
INHALATION: *If exposed to excessive levels of dust or fumes from overheating, remove to fresh air and get medical attention if cough or other symptoms develop.*

ROUTES OF ENTRY: *Inhalation, Ingestion.*

### SECTION V: FIRE FIGHTING MEASURES

FLASH POINT and METHOD: *>93°C (>200°F)* FLAMMABILITY LIMITS: LEL: *N/A*  
UEL: *N/A*

EXTINGUISHING MEDIA: *Water fog, foam, dry chemical, and CO<sub>2</sub>*

FIRE & EXPLOSION HAZARDS: *Combustion generates hazardous fumes. Static charges may be generated by emptying packages.*

FIRE FIGHTING EQUIPMENT: *Use Self-Contained Breathing Apparatus and full protective equipment.*

## Hydropel QB

### SECTION VI: ACCIDENTAL RELEASE MEASURES

Sweep up material, avoid generating dust. If material is molten, attempt to confine the spill until the cooling material solidifies, then scrape up and dispose of properly. Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

### SECTION VII: HANDLING AND STORAGE

Fine powder/dust may cause eye or respiratory irritation. Use with adequate ventilation. Wash thoroughly after use.

### SECTION VIII: PERSONAL PROTECTION

**RESPIRATORY PROTECTION:** Wear a NIOSH/MSHA approved dust mask or respirator if airborne concentrations are not maintained below the Exposure Limits.

**EYE PROTECTION:** Wear ANSI approved (Z87.1) safety glasses with side shield, or goggles. Wear safety glasses and face shield when working with molten material.

**SKIN PROTECTION:** Wear impervious gloves and long sleeves to minimize skin contact. A burn from molten material should be treated as a thermal burn. Hot material tends to cling to flesh, especially after solidifying. Cool as soon as possible. Seek medical attention.

**ENGINEERING CONTROLS:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

**EXPOSURE GUIDELINES:** OSHA PEL: 15 mg/m<sup>3</sup> (Nuisance Dust) ACGIH TLV: 10 mg/m<sup>3</sup> (Dust)

### SECTION IX: PHYSICAL PROPERTIES

<b>APPEARANCE:</b>	White powder	<b>VAPOR PRESSURE (mmHg):</b>	N/A
<b>ODOR:</b>	Mild	<b>VAPOR DENSITY (Air = 1):</b>	N/A
<b>SOLUBILITY IN WATER:</b>	Insoluble	<b>BOILING POINT:</b>	N/A
<b>SPECIFIC GRAVITY:</b>	0.88	<b>pH:</b>	N/A
<b>MELT POINT:</b>	N/D	<b>% VOLATILE:</b>	N/A

### SECTION X: STABILITY AND REACTIVITY

**STABILITY:** Stable

**CONDITIONS TO AVOID:** Elevated temperatures; strong oxidizers.

**HAZARDOUS POLYMERIZATION:** Will not occur.

**DECOMPOSITION PRODUCTS:** CO, CO<sub>2</sub>.

### SECTION XI: TOXICOLOGICAL INFORMATION

No information available.

### SECTION XII: ECOLOGICAL INFORMATION

No data available. Not Water Soluble.

### SECTION XIII: DISPOSAL CONSIDERATIONS

Unused product is not a RCRA Waste. Dispose of in accordance with federal, state and local regulations and laws (contact local or state environmental agency for specific rules).

### SECTION XIV: TRANSPORT INFORMATION

Not a DOT Hazardous Material.

EMERGENCIES: CHEMTREC (800) 424-9300

## Hydropel QB

### **SECTION XV: REGULATORY INFORMATION**

Toxic Substances Control Act (TSCA): *All components are included in the Toxic Substances Control Act Chemical Substances Inventory.*

SARA Title III, Section 313 (40 CFR 372) Toxic Chemicals: *This product does not contain a chemical, which is listed in Section 313 at or above the "de minimis" level.*

Canadian Environmental Protection Act (CEPA) and Domestic Substance List (DSL): *All components of this product are included on the Canadian DSL.*

European Inventory of Existing Commercial Chemical Substances (EINECS): *All components of this product are included under EINECS. (monomer listed).*

**Risk & Safety Phrases:**

R Phrases *None*

S Phrases *None*

*This Product does not require a hazard warning label in accordance with directive 67/548/EC.*

California Proposition 65: *None Known.*

Australian Inventory of Chemical Substances (AICS): *All components of this product are included in the AICS Inventory.*

**New Jersey Right-To-Know:**

<u>Ingredients</u>	<u>CAS or Trade Secret Number</u>	<u>EINECS Number or Chemical Nature</u>
Hydrocarbon Wax	8002-74-2	232-315-6
Trade Secret	43124800-5132P	Non-Hazardous Wax

### **SECTION XVI: OTHER INFORMATION**

*N/A: Not Applicable*

*N/D: Not Determined*

*N/I: No Information*

*N/E: Not Established*

The information and recommendations contained in this Data Sheet are believed to be accurate and represent the best information currently available to us, but no warranty, guarantee or representation is made by Shamrock as to the absolute correctness or sufficiency of the information and recommendations in this Data Sheet; nor can it be assumed that all possible safety measures are contained in this Data Sheet or that other measures may not be required under varying circumstances.

**For Service in Europe Contact:**

**SHAMROCK TECHNOLOGIES, BVBA**  
**HEESTERVELDWEG 21**  
**B-3700 TONGEREN**  
**BELGIQUE**

**CUSTOMER SERVICE:**  
**REGULATORY INFORMATION:**  
**FAX:**

**+32 1245 8330**  
**(USA) +1 (973) 242-2999**  
**+32 1245 8340**



# MATERIAL SAFETY DATA SHEET



Bayer MaterialScience

**Bayer MaterialScience LLC**  
Product Safety & Regulatory Affairs  
100 Bayer Road  
Pittsburgh, PA 15205-9741  
USA

## TRANSPORTATION EMERGENCY

CALL CHEMTREC: (800) 424-9300  
INTERNATIONAL: (703) 527-3887

## NON-TRANSPORTATION

Emergency Phone: Call Chemtrec  
Information Phone: (800) 662-2927

### 1. Product and Company Identification

**Product Name:** IMPRANIL DL 1554  
**Material Number:** 80171293  
**Chemical Family:** Aqueous Polyester Polyurethane Dispersion containing Organic Solvent

### 2. Hazards Identification

#### Emergency Overview

**Caution Color:** Milky White **Form:** liquid thixotropic **Odor:** slight, solvent-like.  
May cause eye, skin, and respiratory tract irritation. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Irritating gases/fumes may be given off during burning or thermal decomposition. Vapors or mist may be a fire and explosion hazard when exposed to high temperature or ignition. Vapors may travel to areas away from work site before igniting/flashing back to vapor source. May affect nervous system. May cause brain damage.

#### Potential Health Effects

**Primary Routes of Entry:** Skin Contact, Eye Contact, Ingestion, Inhalation

**Medical Conditions Aggravated by Exposure:** Skin disorders, Respiratory disorders, Eye disorders

#### HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

##### Carcinogenicity:

No Carcinogenic substances as defined by IARC, NTP and/or OSHA

### 3. Composition/Information on Ingredients

#### Hazardous components

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

#### OTHER INGREDIENTS

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
0.1 - 1%	Acetone	67-64-1

The above potentially hazardous ingredient(s) are contained at levels below disclosure requirements and are provided for informational purposes only.

#### 4. First aid measures

##### Eye contact

In case of contact, flush eyes with plenty of lukewarm water. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Get medical attention if irritation develops.

##### Skin contact

In case of skin contact, wash affected areas with soap and water. Immediately remove contaminated clothing and shoes. Get medical attention if irritation develops.

##### Inhalation

If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if irritation develops.

##### Ingestion

If ingested, do not induce vomiting unless directed to do so by medical personnel. Get medical attention.

#### 5. Firefighting measures

**Suitable extinguishing media:** Carbon dioxide (CO<sub>2</sub>), Dry chemical, Foam, water spray for large fires.

##### Special Fire Fighting Procedures

Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture.

#### 6. Accidental release measures

##### Spill and Leak Procedures

Cover spill with inert material (e. g., dry sand or earth) and collect for proper disposal. Dike or dam spilled material and control further spillage, if possible. Prevent from entering open drains and waterways. Wash spill area with soap and water. Ventilate area to remove vapors or dust.

#### 7. Handling and storage

**Storage temperature:**  
**minimum:** 5 °C (41 °F)

maximum: 30 °C (86 °F)

**Storage period**

6 Months: after receipt of material by customer

**Handling/Storage Precautions**

Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling. Keep container closed when not in use. Avoid breathing dust, vapor, or mist. Avoid contact with eyes. Avoid contact with skin or clothing. Protect from freezing.

**Further Info on Storage Conditions**

Store separate from food products.

**8. Exposure controls/personal protection**

Country specific exposure limits have not been established or are not applicable

**Acetone (67-64-1)**

US. ACGIH Threshold Limit Values

Time Weighted Average (TWA): 500 ppm

US. ACGIH Threshold Limit Values

Short Term Exposure Limit (STEL): 750 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

PEL: 1,000 ppm, 2,400 mg/m<sup>3</sup>

**Industrial Hygiene/Ventilation Measures**

General dilution and local exhaust as necessary to control airborne vapors, mists, dusts and thermal decomposition products below appropriate airborne concentration standards/guidelines. Thermal processing operations should be ventilated to control gases and fumes given off during processing. Curing ovens must be ventilated to prevent the build up of explosive atmospheres and to prevent off gases from entering the work place.

**Respiratory protection**

None required under normal conditions of use., NIOSH approved air-supplied respirator during die cleaning, high temperature processing or when thermal decomposition is suspected.

**Hand protection**

Permeation resistant gloves., Butyl rubber gloves., Nitrile rubber gloves.

**Eye protection**

Chemical safety goggles or safety glasses with side-shields.

**Skin and body protection**

Permeation resistant clothing, Gloves, long sleeved shirts and pants.

**Additional Protective Measures**

Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product. Store separate from food products.

**9. Physical and chemical properties**

**Form:**

liquid

**Appearance:**

thixotropic

<b>Color:</b>	Milky White
<b>Odor:</b>	slight, solvent-like
<b>pH:</b>	ca. 7.7 (Determined in a 10 % aqueous solution)
<b>Boiling point/boiling range:</b>	ca. 86 °C (186.8 °F)
<b>Flash point:</b>	Not applicable (water based product), however, solid material will support combustion if water has been evaporated.
<b>Lower explosion limit:</b>	Not Established
<b>Upper explosion limit:</b>	Not Established
<b>Vapour pressure:</b>	Approximately 50 hPa @ 20 °C (68 °F) Approximately 161 hPa @ 50 °C (122 °F) Approximately 196 hPa @ 55 °C (131 °F)
<b>Density:</b>	ca. 1.1 g/cm <sup>3</sup> @ 20 °C (68 °F) (DIN 51757)
<b>Solubility in Water:</b>	miscible @ 15 °C (59 °F)
<b>Auto-ignition temperature:</b>	ca. 435 °C (815 °F) (DIN 51794)
<b>Viscosity, dynamic:</b>	Approximately 1,000 mPa.s @ 23 °C (73.4 °F) (DIN EN ISO 3219/A.3)
<b>pour point:</b>	Approximately 3 °C (37.4 °F) (DIN ISO 3016) similar to water

## 10. Stability and reactivity

### Hazardous Reactions

Hazardous polymerisation does not occur.

### Stability

Stable

### Materials to avoid

Water reactives

### Conditions to avoid

Protect from freezing.

### Hazardous decomposition products

By Fire and Thermal Decomposition: Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke, Isocyanate, Isocyanic Acid and other undetermined compounds., Hydrogen cyanide

## 11. Toxicological information

### Toxicity Data for IMPRANIL DL 1554

#### Acute oral toxicity

LD50: > 2,000 mg/kg (rat)

#### Skin irritation

rabbit, OECD Test Guideline 404, Exposure Time: 4 h, non-irritant

#### Eye irritation

rabbit, OECD Test Guideline 405, non-irritant

#### Sensitisation

Buehler Test: non-sensitizer (guinea pig, OECD Test Guideline 406)

#### Mutagenicity

Genetic Toxicity in Vitro:

Ames: negative  
Based on a similar product.

**12. Ecological information**

Ecological Data for IMPRANIL DL 1554

**13. Disposal considerations**

**Waste Disposal Method**  
Waste disposal should be in accordance with existing federal, state and local environmental control laws.

**Empty Container Precautions**  
Recondition or dispose of empty container in accordance with governmental regulations.

**14. Transport information**

Land transport (DOT)  
Non-Regulated

Sea transport (IMDG)  
Non-Regulated

Air transport (ICAO/IATA)  
Non-Regulated

**15. Regulatory information**

United States Federal Regulations

OSHA Hazcom Standard Rating: Non-Hazardous

US. Toxic Substances Control Act: Listed on the TSCA Inventory.

US. EPA CERCLA Hazardous Substances (40 CFR 302):

Components  
None

SARA Section 311/312 Hazard Categories:  
Acute Health Hazard

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III  
Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):

Components  
None

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III  
Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:

Components

None

**US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261)**

Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

**State Right-To-Know Information**

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

**Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:**

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
>=1%	Polyurethane Resin	CAS# is a trade secret
>=1%	Water	7732-18-5

**New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous Substances Lists:**

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
0.1 - 1%	Acetone	67-64-1

**California Prop. 65:**

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

**16. Other information**

**NEPA 704M Rating**

Health	1
Flammability	1
Reactivity	0
Other	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

**HMIS Rating**

Health	1
Flammability	1
Physical Hazard	0

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

\* = Chronic Health Hazard

The method of hazard communication for Bayer MaterialScience LLC is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by Bayer MaterialScience LLC as a customer service.

Contact person: Product Safety Department  
Telephone: (412) 777-2835

MSDS Number: 112000018773  
Version Date: 04/15/2014  
Report version: 1.20

This information is furnished without warranty, express or implied. This information is believed to be accurate to the best knowledge of Bayer MaterialScience LLC. The information in this MSDS relates only to the specific material designated herein. Bayer MaterialScience LLC assumes no legal responsibility for use of or reliance upon the information in this MSDS.

# MATERIAL SAFETY DATA SHEET



**Bayer MaterialScience**

**Bayer MaterialScience LLC**  
Product Safety & Regulatory Affairs  
100 Bayer Road  
Pittsburgh, PA 15205-9741  
USA

## TRANSPORTATION EMERGENCY

CALL CHEMTREC: (800) 424-9300  
INTERNATIONAL: (703) 527-3887

## NON-TRANSPORTATION

Emergency Phone: Call Chemtrec  
Information Phone: (800) 662-2927

### 1. Product and Company Identification

**Product Name:** IMPRANIL LP DSB 1069  
**Material Number:** 81368121  
**Chemical Family:** Aliphatic Polyurethane Resin Dispersion

### 2. Hazards Identification

#### Emergency Overview

**Color:** White **Form:** liquid **Odor:** slight inherent odour.  
Product poses little or no hazard if spilled. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Irritating gases/fumes may be given off during burning or thermal decomposition.

#### Potential Health Effects

**Primary Routes of Entry:** Skin Contact, Eye Contact

**Medical Conditions Aggravated by Exposure:** None known.

#### HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

##### General Effects of Exposure

##### Acute Effects of Exposure

**For Product:** IMPRANIL LP DSB 1069

Not expected to cause any adverse acute health effects.

##### Chronic Effects of Exposure

**For Product:** IMPRANIL LP DSB 1069

Not expected to cause any adverse chronic health effects.

##### Carcinogenicity:

No Carcinogenic substances as defined by IARC, NTP and/or OSHA

**3. Composition/Information on Ingredients**

**Hazardous components**

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

**4. First aid measures**

**Eye contact**

In case of contact, flush eyes with plenty of lukewarm water. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Get medical attention if irritation develops.

**Skin contact**

In case of skin contact, wash affected areas with soap and water. Get medical attention if irritation develops. Thoroughly clean shoes before reuse. Wash clothing before reuse.

**Inhalation**

If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.

**Ingestion**

If ingested, do not induce vomiting unless directed to do so by medical personnel. Get medical attention.

**5. Fire-fighting measures**

**Suitable extinguishing media:** Carbon dioxide (CO<sub>2</sub>), Dry chemical, Foam, water spray for large fires.

**Special Fire Fighting Procedures**

Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture.

**6. Accidental release measures**

**Spill and Leak Procedures**

Dike or dam spilled material and control further spillage, if possible. Prevent from entering open drains and waterways. Cover spill with inert material (e. g., dry sand or earth) and collect for proper disposal. Ventilate area to remove vapors or dust.

**7. Handling and storage**

**Storage temperature:**

**minimum:** 5 °C (41 °F)  
**maximum:** 40 °C (104 °F)

**Storage period**

6 Months: after receipt of material by customer

**Handling/Storage Precautions**

Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling. Keep container closed when not in use. Protect from freezing.

**Further Info on Storage Conditions**

Store separate from food products. Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard 29 CFR 1910.1200.

**8. Exposure controls/personal protection**

Country specific exposure limits have not been established or are not applicable

**Industrial Hygiene/Ventilation Measures**

Use local and general exhaust ventilation to control levels of exposure. Thermal processing operations should be ventilated to control gases and fumes given off during processing.

**Respiratory protection**

None required under normal conditions of use., NIOSH approved air-supplied respirator during die cleaning, high temperature processing or when thermal decomposition is suspected.

**Hand protection**

Permeation resistant gloves., Butyl rubber gloves., Nitrile rubber gloves.

**Eye protection**

Safety glasses with side-shields

**Skin and body protection**

Permeation resistant clothing, Gloves, long sleeved shirts and pants.

**Additional Protective Measures**

Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product.

**9. Physical and chemical properties**

<b>Form:</b>	liquid
<b>Color:</b>	White
<b>Odor:</b>	slight inherent odour
<b>pH:</b>	ca. 7 (Determined in a 10 % aqueous solution)
<b>Boiling point/boiling range:</b>	> 95 °C (> 203 °F) @ 1,013 hPa (DIN 53171)
<b>Flash point:</b>	(DIN EN ISO 2719) No flash point up to initial boiling point.
<b>Density:</b>	ca. 1 g/cm <sup>3</sup> @ 20 °C (68 °F) (DIN 51757)
<b>Autoignition temperature:</b>	ca. 425 °C (797 °F) (DIN 51794)
<b>Viscosity, dynamic:</b>	ca. 275 mPa.s @ 20 °C (68 °F) (DIN 53019)
<b>Pour point:</b>	ca. -2 °C (28.4 °F) (ISO 3016)

**10. Stability and reactivity****Hazardous Reactions**

Hazardous polymerisation does not occur.

**Stability**  
Stable

**Materials to avoid**  
Water reactives

**Conditions to avoid**  
Protect from freezing.

**Hazardous decomposition products**  
By Fire and Thermal Decomposition: Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke, Isocyanate, Isocyanic Acid and other undetermined compounds.

#### 11. Toxicological information

**Toxicity Data for** IMPRANIL LP DSB 1069

**Toxicity Note**  
No data available for this product.

#### 12. Ecological information

**Ecological Data for** IMPRANIL LP DSB 1069

**Additional Ecotoxicological Remarks**  
Ecotoxicological studies of the product are not available.

#### 13. Disposal considerations

**Waste Disposal Method**  
Waste disposal should be in accordance with existing federal, state and local environmental control laws.

**Empty Container Precautions**  
Recondition or dispose of empty container in accordance with governmental regulations.

#### 14. Transport information

**Land transport (DOT)**  
Non-Regulated

**Sea transport (IMDG)**  
Non-Regulated

**Air transport (ICAO/IATA)**  
Non-Regulated

## 15. Regulatory information

### United States Federal Regulations

**OSHA Hazcom Standard Rating:** Non-Hazardous

**US. Toxic Substances Control Act:** To the best of our knowledge, this material is not included in the Toxic Substances Control Act (TSCA) Inventory, and is defined as a new chemical substance which cannot be imported or manufactured for commercial purposes without complying with the Pre-manufacture Notice (PMN) requirements codified at 40CFR Part 720. Therefore, we are providing you a small quantity (as defined at 40CFR Part 720.36 (a) (1) ) of this product with the understanding it is to be used solely in the course of Research and Development (R&D), as defined in Section 5 (h) (3) of TSCA and 40 CFR Part 720.

**US. EPA CERCLA Hazardous Substances (40 CFR 302):**

**Components**

None

**SARA Section 311/312 Hazard Categories:**

Non-hazardous under Section 311/312

**US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):**

**Components**

None

**US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:**

**Components**

None

**US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261)**

Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

### **State Right-To-Know Information**

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

**Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:**

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
>=1%	Polyurethane Resin Dispersion	CAS# is a trade secret
>=1%	Water	7732-18-5

**California Prop. 65:**

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

**16. Other information**

**NFPA 704M Rating**

<b>Health</b>	0
<b>Flammability</b>	1
<b>Reactivity</b>	0
<b>Other</b>	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

**HMIS Rating**

<b>Health</b>	0
<b>Flammability</b>	1
<b>Physical Hazard</b>	0

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

\* = Chronic Health Hazard

The method of hazard communication for Bayer MaterialScience LLC is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by Bayer MaterialScience LLC as a customer service.

Contact person: Product Safety Department  
Telephone: (412) 777-2835  
MSDS Number: 112000025638  
Version Date: 04/27/2011  
Report version: 1.0

This information is furnished without warranty, express or implied. This information is believed to be accurate to the best knowledge of Bayer MaterialScience LLC. The information in this MSDS relates only to the specific material designated herein. Bayer MaterialScience LLC assumes no legal responsibility for use of or reliance upon the information in this MSDS.

# Material Safety Data Sheet

**HUNTSMAN**  
Enriching lives through innovation

## 1. Product and company identification

**Product name** : **JEFFSOL® PROPYLENE CARBONATE  
(JEFFSOL® PC)**

**MSDS #** 00019798

**Product use** : Solvent.

Huntsman International LLC  
P.O. Box 4980  
The Woodlands, TX 77387

**TELEPHONE NUMBERS**  
Transportation/Emergency  
**CHEMTREC: (800) 424-9300**  
Technical Information: (281) 719-7780  
E-MAIL: [MSDS@huntsman.com](mailto:MSDS@huntsman.com)

**Validation date** : 8/19/2010.

### In case of emergency

**Spills Leaks Fire or Exposure Call Chemtrec: (800) 424-9300**  
**In Mexico: 01 800 00 214 00**  
**In Columbia: 01 800 91 6012**

## 2. Hazards identification

**Physical state** : Liquid.

**Odor** : Faint odor.

**OSHA/HCS status** : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

**Emergency overview** : CAUTION!

**⚠ MAY CAUSE EYE IRRITATION. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. CONTAMINATION BY MOISTURE WILL RESULT IN A PRESSURE BUILD-UP IN SEALED CONTAINERS.**

Slightly irritating to the eyes. Avoid breathing vapor or mist. Avoid contact with eyes. Wash thoroughly after handling. Aspiration hazard if swallowed. Can enter lungs and cause damage.

**GENERAL INFORMATION** : Read the entire MSDS for a more thorough evaluation of the hazards.

## 3. Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Propylene carbonate	108-32-7	60 - 100

## 4 . First aid measures

<b>Eye contact</b>	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
<b>Skin contact</b>	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
<b>Inhalation</b>	Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
<b>Ingestion</b>	Wash out mouth with water. Move exposed person to fresh air. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.
<b>Notes to physician</b>	: No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.

## 5 . Fire-fighting measures

<b>Flash point</b>	: Closed cup: 135°C (275°F)
<b>Products of combustion</b>	: Decomposition products may include the following materials: carbon dioxide carbon monoxide
<b>Extinguishing media</b>	
<b>Suitable</b>	: Use an extinguishing agent suitable for the surrounding fire.
<b>Not suitable</b>	: None known.
<b>Special exposure hazards</b>	: In a fire or if heated, a pressure increase will occur and the container may burst. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
<b>Special protective equipment for fire-fighters</b>	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## 6 . Accidental release measures

<b>Personal precautions</b>	: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
<b>Environmental precautions</b>	: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
<b>Methods for cleaning up</b>	: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

## 7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## 8. Exposure controls/personal protection

Consult local authorities for acceptable exposure limits.

- Preventive Measures** : Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.
- Engineering controls** : Use local exhaust ventilation to maintain airborne concentrations below the TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operational procedures demand it. For guidance on engineering control measures refer to publications such as the ACGIH current edition of 'Industrial Ventilation, a manual of Recommended Practice.'
- Personal protection**
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

## 9. Physical and chemical properties

### General information

#### Appearance

- Physical state** : Liquid.
- Color** : Colorless.
- Odor** : Faint odor.
- Odor threshold** : Not available.

### Important health, safety and environmental information

- pH** : 7
- Boiling point** : 242°C (467.6°F)
- Melting point** : Not available.
- Flash point** : Closed cup: 135°C (275°F)

## 9 . Physical and chemical properties

Oxidizing properties	: Not available.
Vapor pressure	: 0.0031 kPa (0.023 mm Hg)
Relative density	: 1.2
Solubility	: Soluble in the following materials: cold water.
Octanol/water partition coefficient	: Not available.
Viscosity	: Kinematic: 0.016 cm <sup>2</sup> /s (1.6 cSt at 43.3°C)
Vapor density	: 3.5 [Air = 1]
Auto-ignition temperature	: 430°C (806°F)
VOC content	: VOC Exempt

## 10 . Stability and reactivity

Stability and reactivity	: The product is stable.
Incompatibility with various substances	: carbon monoxide, carbon dioxide, aldehydes, ketones, acids
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.
Hazardous decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide

## 11 . Toxicological information

### Toxicity data

#### Acute toxicity

Product/ingredient name	Test	Species	Result	Exposure
Propylene carbonate	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-

#### Chronic toxicity

Product/ingredient name	Test	Species	Result	Exposure
Propylene carbonate	Sub-chronic Oral	Rat - Male, Female	>5000 mg/kg	90 days

### Potential acute health effects

Ingestion	: <input checked="" type="checkbox"/> Aspiration hazard if swallowed. Can enter lungs and cause damage.
Inhalation	: No known significant effects or critical hazards.
Eyes	: Slightly irritating to the eyes.
Skin	: <input checked="" type="checkbox"/> No known significant effects or critical hazards.

### Potential chronic health effects

Target organs	: None known.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.

## 12 . Ecological information

### Aquatic ecotoxicity

<u>Product/ingredient name</u>	<u>Test</u>	<u>Result</u>	<u>Species</u>	<u>Exposure</u>
Propylene carbonate	DIN DIN 38412 Part 8	Acute EC50 25619 mg/L	Bacteria	16 hours
	OECD 202 <i>Daphnia</i> sp. Acute Immobilization Test and Reproduction Test	Acute EC50 >1000 mg/L Fresh water	Daphnia	48 hours Static
	OECD 201 Alga, Growth Inhibition Test	Acute EC50 >929 mg/L Fresh water	Algae	72 hours Static
	EU EC C.1 Acute Toxicity for Fish	Acute LC50 >1000 mg/L Fresh water	Fish	96 hours Semi-static

### Biodegradability

<u>Product/ingredient name</u>	<u>Test</u>	<u>Result</u>	<u>Dose</u>	<u>Inoculum</u>
Propylene carbonate	OECD 301B Ready Biodegradability - CO <sub>2</sub> Evolution Test	83.5 to 87.7 % - Readily - 29 days	20 mg/L Carbon dioxide production	-

<u>Product/ingredient name</u>	<u>Aquatic half-life</u>	<u>Photolysis</u>	<u>Biodegradability</u>
Propylene carbonate	-	-	Readily

### Bioaccumulative potential

<u>Product/ingredient name</u>	<u>LogP<sub>ow</sub></u>	<u>BCF</u>	<u>Potential</u>
Propylene carbonate	-0.41	-	low

**Environmental effects** : Readily biodegradable

## 13 . Disposal considerations

- Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## 14 . Transport information

**Transportation Emergency Number 1-800-424-9300 (CHEMTREC).**

## 14 . Transport information

Regulatory information	UN number	Proper shipping name	Class	PG*	Label	Additional information
DOT Classification	Not regulated.					-
TDG Classification	Not regulated.					-
IMDG Class	Not regulated.		-	-		-
IATA-DGR Class	Not regulated.		-	-		-

PG\* : Packing group

\*\*\*The transport regulations may change in the different countries. Check for the appropriate regulations in the country of transport or usage of this product.\*\*\*

## 15 . Regulatory information

### United States

HCS Classification : Not regulated.

U.S. Federal regulations : United States inventory (TSCA 8b): All components are listed or exempted.

CERCLA: Hazardous substances. : No ingredients listed.

SARA 313 : No ingredients listed.

This product does not contain nor is it manufactured with ozone depleting substances.

### California Prop 65

**WARNING:** This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Propylene oxide	Yes.	No.	No.	No.

### Canada

WHMIS (Canada) : Class D-2B: Material causing other toxic effects (Toxic).

CEPA (DSL) : All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations) and this MSDS (Material Safety Data Sheet) contains all the information required by the CPR.

## 16 . Other information

Label requirements :  MAY CAUSE EYE IRRITATION. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. CONTAMINATION BY MOISTURE WILL RESULT IN A PRESSURE BUILD-UP IN SEALED CONTAINERS.

## 16 . Other information

Hazardous Material Information System (U.S.A.) :

Health	1
Fire hazard	1
Reactivity	0

National Fire Protection Association (U.S.A.) :



Date of printing : 8/19/2010.

Date of issue : 19 August 2010

Date of previous issue : 6/24/2010.

### Notice to reader

*While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.*

**IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.**

**THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.**

*Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.*

**NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.**

### Trademarks:

JEFFSOL® is a registered trademark of Huntsman Petrochemical Corporation in one or more countries, but not all countries.

▣ Indicates information that has changed from previously issued version.



# MATERIAL SAFETY DATA SHEET

ELEMENTIS

SPECIALTIES

Revision date: 20-Sep-2011

Supersedes: 19-Aug-2009

MSDS Number: 10448

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product name:** DAPRO® DF 880

**Product Use Description:** Defoamer  
Anti-foaming agent

**Company/Undertaking Identification:**

Elementis Specialties, Inc. 329 Wyckoffs Mill Road Hightstown, NJ 08520 USA Tel: (609) 443-2000	Elementis UK Ltd. c/o Elementis GmbH Stolberger Str. 370 50933 Cologne, Germany Tel. +49 (0) 221 2923 2000
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**Emergency telephone number:** CHEMTREC Emergency Response Number: 1-800-424-9300 (1-703-527-3887)  
SGS Emergency Response Number: + 32 (0)3 575 55 55

Product\_Stewardship@elementis.com

## 2. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

**Appearance:** Liquid  
**Color:** Tan  
**Odor:** Slight

### WARNING

#### FLAMMABLE LIQUID

**Risk of serious damage to eyes**  
**May be harmful if swallowed or inhaled.**  
**May cause irritation of respiratory tract**  
**May cause skin irritation and/or dermatitis**  
**Vapours may cause drowsiness and dizziness**

#### Potential health effects:

**Eye contact:** Risk of serious damage to eyes. Signs and symptoms include burning, tearing, redness and swelling.

**Skin contact:** May cause skin irritation and/or dermatitis. Repeated exposure may cause skin dryness or cracking.

**Inhalation:** May cause irritation of respiratory tract. Vapors may cause drowsiness and dizziness.

**Ingestion:** May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Routes of exposure:** Inhalation, Skin, Ingestion

**Target Organs:** Eyes

See Sections 11 & 12 for additional toxicological and ecological information

**Environmental hazard:** See Section 12, below

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Hazardous Components

Components	CAS-No	Weight %
Stoddard solvent (< 0.1% Benzene)	8052-41-3	2.5 - 10%
n-Butanol	71-36-3	2.5 - 10%
Petroleum distillates, solvent dewaxed heavy paraffinic (DMSO extract <3%)	64742-65-0	25 - 50%
Refined light paraffinic distillates (< 3% DMSO)	64741-89-5	< 2.5%
Distillates petroleum, solvent-refined heavy paraffinic (< 3% DMSO)	64741-88-4	< 2.5%
White mineral oil (Petroleum)	8042-47-5	25 - 50%

This product is considered hazardous as defined under OSHA's Hazard Communication Standard (29 CFR 1910.1200).

### 4. FIRST AID MEASURES

**Inhalation:** IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen.

**Skin contact:** Wash off immediately with soap and plenty of water. If a person feels unwell or symptoms of skin irritation appear, consult a physician.

**Eye contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a specialist.

**Ingestion:** If swallowed, seek medical advice immediately and show this container or label. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

### 5. FIRE-FIGHTING MEASURES

**Flash Point:** 118 °F / 48 °C

**Flash Point Method:** ASTM D3278

<b>Autoignition temperature:</b>	Not selfigniting
<b>Explosive properties:</b>	LEL: 1.0 Vol% UEL: 6.0 Vol%
<b>Unusual Fire and Explosion Hazards:</b>	Emits toxic fumes under fire conditions.
<b>Reactivity Hazard:</b>	None known
<b>Suitable extinguishing media:</b>	Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical Sand
<b>Hazardous combustion products:</b>	Carbon monoxide, Carbon dioxide (CO2), Sulphur oxides (SOx).
<b>Special Fire Fighting Procedure:</b>	Wear self contained breathing apparatus for fire fighting if necessary

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions:</b>	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment.
<b>Environmental precautions:</b>	Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.
<b>Clean-up methods:</b>	Soak up with inert absorbent material and dispose of as hazardous waste. Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

## 7. HANDLING AND STORAGE

<b>Handling:</b>	Take precautionary measures against static discharges. Remove all sources of ignition. Avoid contact with skin, eyes and clothing. Avoid breathing mists, dusts, or vapors. Wash hands thoroughly after handling.
<b>Storage:</b>	Keep containers tightly closed in a cool, well-ventilated place. Keep product and empty container away from heat and sources of ignition.
<b>Additional Storage:</b>	Not required under normal use

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Engineering measures:</b>	Maintain adequate ventilation to keep hazardous ingredients below their PELs or TLVs. Use NIOSH/MSHA approved respirator whenever exposure limits exceeded.
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### Personal Protective Equipment

<b>Eye protection:</b>	Tightly fitting safety goggles
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- Skin and body protection:** Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place
- Respiratory protection:** In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit
- Hand protection:** Protective gloves, Neoprene gloves, Solvent-resistant gloves (butylrubber)
- Hygiene measures:** Handle in accordance with good industrial hygiene and safety practice.

### Exposure controls

Components	OEL - Long-term TWA	OES - Short-term STEL
Petroleum distillates, solvent dewaxed heavy paraffinic (DMSO extract <3%)	5 mg/m <sup>3</sup> (oil mist)	

Components	OSHA STEL	OSHA PEL	OSHA TWA	ACGIH STEL	ACGIH TWA
Stoddard solvent (< 0.1% Benzene)		2900 mg/m <sup>3</sup> 500 ppm	525 mg/m <sup>3</sup> 100 ppm		100 ppm
n-Butanol		300 mg/m <sup>3</sup> 100 ppm	300 mg/m <sup>3</sup> 100 ppm		20 ppm
Petroleum distillates, solvent dewaxed heavy paraffinic (DMSO extract <3%)				10 mg/m <sup>3</sup> (Oil mist, mineral)	5 mg/m <sup>3</sup> (Oil mist, mineral)
Refined light paraffinic distillates (< 3% DMSO)		5 mg/m <sup>3</sup>		10 mg/m <sup>3</sup>	
Distillates petroleum, solvent-refined heavy paraffinic (< 3% DMSO)		5 mg/m <sup>3</sup>	1600 mg/m <sup>3</sup> 400 ppm	10 mg/m <sup>3</sup>	
White mineral oil (Petroleum)					5 mg/m <sup>3</sup>

Components	OSHA Ceiling	ACGIH Ceiling	WEEL Ceiling
n-Butanol	150 mg/m <sup>3</sup> 50 ppm		

## 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance:** Liquid
- Color:** Tan
- Odor:** Slight
- Physical state:** Liquid
- Vapor pressure:** < 4.0 mm Hg
- Vapor density:** 2.55
- Boiling point/range:** > 342 °F / > 172 °C
- Solubility:** Water insoluble

<b>Specific Gravity:</b>	0.86
<b>Density:</b>	0.86 g/cm <sup>3</sup> @ 20°C
<b>Bulk density:</b>	7.2 lbs/gal
<b>Flash Point:</b>	118 °F / 48 °C
<b>Ignition temperature:</b>	842 °F / 450 °C
<b>Explosive properties:</b>	Vapors may form explosive mixtures with air
<b>Explosion limits:</b>	LEL: 0.6 Vol % UEL: 6.0 Vol %
<b>Solvent content:</b>	
<b>Percent Volatile:</b>	12.5 - 18 %
<b>Water content:</b>	~ 0.5 %
<b>Evaporation rate:</b>	< 1.0

## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable at normal conditions
<b>Conditions to avoid:</b>	Heat, flames and sparks
<b>Materials to avoid:</b>	Oxidizing agents
<b>Hazardous decomposition products:</b>	No decomposition if stored normally
<b>Possibility of Hazardous Reactions:</b>	Will not occur

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

Components	LC50/inhalation/4h/Rat	LD50/Dermal/Rat	LD50/Oral/Rat
Stoddard solvent (< 0.1% Benzene)	> 5500 mg/m <sup>3</sup>	> 3000 mg/kg (rabbit)	> 5000 mg/kg (rat)
n-Butanol	8000 mg/L	3400 mg/kg	790 mg/kg
Petroleum distillates, solvent dewaxed heavy paraffinic (DMSO extract <3%)	2.18 mg/L	> 2000 mg/kg (rabbit)	> 5000 mg/kg
Refined light paraffinic distillates (< 3% DMSO)	2.18 mg/L	> 2000 mg/kg (rabbit)	> 5000 mg/kg
Distillates petroleum, solvent-refined heavy paraffinic (< 3% DMSO)	2.18 mg/L	> 2000 mg/kg (rabbit)	> 5000 mg/kg

Components	LC50/inhalation/4hr/Rat	LD50/Dermal/Rat	LD50/Oral/Rat
White mineral oil (Petroleum)	> 5 mg/L	No data available	> 5000 mg/kg

**Local effects**

<b>Skin irritation:</b>	May cause skin irritation and/or dermatitis.
<b>Eye irritation:</b>	Causes burns. Risk of serious damage to eyes.
<b>Inhalation:</b>	May cause irritation of respiratory tract.
<b>Ingestion:</b>	May be harmful if swallowed, avoid ingestion. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
<b>Chronic toxicity:</b>	Long-term chronic toxicity studies to evaluate the carcinogenic potential of this product have not been conducted; See table and/or data, below, of individual components

**Specific effects**

Components	NTP	IARC	OSHA
Stoddard solvent (< 0.1% Benzene)		Group 3 - Unclassifiable as to carcinogenicity to humans	
White mineral oil (Petroleum)		Group 3- Unclassifiable as to carcinogenicity to humans	

**Carcinogenic effects:** Stoddard solvent has been reviewed by IARC. There is inadequate evidence for the carcinogenicity of petroleum solvents in humans. No data were available on the carcinogenicity of special boiling range solvents or white spirits in experimental animals. Therefore, the working group concluded that Petroleum solvents (stoddard solvent) are not classifiable as to their carcinogenicity to humans (Group 3).

**Target Organs:** Eyes

**12. ECOLOGICAL INFORMATION****Aquatic toxicity:**

Components	LC50/96hr/48hr/24hr	EC50/96hr/48hr/24hr	Bioaccumulation Concentration Factor	No Observable Effect Concentration/96hr/48hr/24hr (NOEC)
Stoddard solvent (< 0.1% Benzene)	> 1000 mg/L (fish)	> 1000 mg/L	No data available	No data available
n-Butanol	1730 mg/L (fathead minnow)	2337 mg/L (Daphnia magna; 48hr) 500 mg/L (Algae)	No data available	No data available

Components	LC50/96hr/48hr/24hr	EC50/96hr/48hr/24hr	Bioaccumulation Concentration Factor	No Observable Effect Concentration/96hr/48hr/24hr (NOEC)
Petroleum distillates, solvent dewaxed heavy paraffinic (DMSO extract <3%)	> 5000 mg/L (freshwater fish; 96hr)	1000 mg/L (Daphnia magna; 48hr)	No data available	No data available
Refined light paraffinic distillates (< 3% DMSO)	5000 mg/L (Oncorhynchus mykiss; 96hr)	1000 mg/L (Daphnia magna; 48hr)	No data available	No data available
Distillates petroleum, solvent-refined heavy paraffinic (< 3% DMSO)	5000 mg/L (Oncorhynchus mykiss; 96hr)	1000 mg/L (Daphnia magna; 48hr)	No data available	No data available
White mineral oil (Petroleum)	> 10 g/L (fresh water, fish)	No data available	No data available	No data available

**Persistence and degradability:** No data available

**Environmental Fate and Pathways:**

**Mobility:** No data available

**Biodegradability:** No data available

**Bioaccumulative potential:** No data available

**Physical / Chemical:** No data available

**BOD/COD:**

**COD-value:** No data available

**BOD5-value:** No data available

**13. DISPOSAL CONSIDERATIONS**

**Waste from residues / unused products:** Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of in accordance with Local and National regulations.

**RCRA Hazardous Waste:**

**RCRA:** Characteristic Waste - D001 (ignitable)

**14. TRANSPORT INFORMATION**

**U.S. Department of Transportation Ground (49 CFR):**

**Proper shipping name:** FLAMMABLE LIQUID, N.O.S. (BUTANOL, PETROLEUM DISTILLATES)  
**UN-No:** 1993  
**Packing group:** III  
**Hazard Class:** 3

**14. TRANSPORT INFORMATION**

Hazard Labels: 3  
 Marine pollutant: NO

**International Air Transportation (ICAO/IATA):**

Proper shipping name: 'FLAMMABLE LIQUID, N.O.S. (BUTANOL, PETROLEUM DISTILLATES)'  
 UN-No: 1993  
 Packing group: III  
 Hazard Class: 3  
 Hazard Labels: 3

**International Maritime Organization (IMO/IMDG):**

Proper shipping name: 'FLAMMABLE LIQUID, N.O.S. (BUTANOL, PETROLEUM DISTILLATES)'  
 UN-No: 1993  
 Packing group: III  
 Hazard Class: 3  
 Hazard Labels: 3  
 EmS: F-E, S-E  
 IMDG - Marine Pollutants: NO

**Surface Shipments in Europe (ADR/RID):**

ADR/RID: 3 Flammable liquids  
 Danger code (Kemler): 30  
 UN-No: 1993  
 Packing group: III  
 Hazard Class: 3  
 Hazard Labels: 3  
 Proper shipping name: 'FLAMMABLE LIQUID, N.O.S. (BUTANOL, PETROLEUM DISTILLATES)'

**15. REGULATORY INFORMATION****Heavy metals:**

Heavy metals content (ppm): Not applicable

**International Inventories**

TSCA/ (USA)	Listed	EINECS/ (EU)	Listed
DSL/ (CANADA)	Listed	NDSL/ (CANADA)	Not applicable
ENCS/ (JAPAN)	Not Listed	IECSC/ (CHINA)	Listed
PICCS/ (PHILLIPINES)	Listed	KECL (KOREA)	Listed
AICS/ (AUSTRALIA)	Listed	HSNO/ New Zealand:	Not Listed
NECSI/ (TAIWAN)	Listed		

U.S. RegulationsTSCA Section 12(b) Export Notification

This product does not contain chemicals that are required to be notified under the TSCA 12(b) Export Notification.

SARA Title III:

<b>Section 302 EHS:</b>	None	<b>Section 311/312:</b>	Fire Hazard, Acute Health Hazard
<b>Section 313:</b>	This product contains the following chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372):	n-Butanol (CAS # 71-36-3)	Listed

California Prop. 65:

Not listed

Canada

**WHMIS hazard class:** B3 Combustible liquid  
D2B Skin or Eye irritation

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

**16. OTHER INFORMATION**HMIS:

Health: 2  
Flammability: 2  
Reactivity: 0

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**This Material Safety Data Sheet** 2, 3, 5 - 9, 11, 12, 15  
**contains changes from the**  
**previous version in Sections:**

**Previous Revision Date:** 19-Aug-2009

**Key/Legend:**

N/A: Not applicable

N/D: Not determined

ppm: Parts per million

X: Listed

**Prepared by:** Product Stewardship

The data set forth in these sheets are based on information provided by the suppliers of the raw materials and chemicals used in the manufacture of the aforementioned product. ELEMENTIS SPECIALTIES makes no warranty with respect to the accuracy of the information provided by their suppliers, and disclaims all liability of reliance thereon. ELEMENTIS SPECIALTIES warrants only that its products conform with their published specifications, and no other express warranty is made with regards thereof. We do not guarantee favorable results, and we assume no liability in connection with the use of the products. They are intended for use by persons having technical skill and knowledge, at their own discretion and risk.



Prepared according to 29CFR 1910.1200.

1	Chemical Product and Company Identification
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**Lubrizol Advanced Materials, Inc.**  
**9911 Brecksville Road**  
**Cleveland, Ohio 44141-3247**  
**Telephone: (216) 447-5000**

<b>Product Trade Name</b>	MY4192M
<b>CAS Number</b>	Not applicable for mixtures.
<b>Synonyms</b>	None.
<b>Generic Chemical Name</b>	Mixture.
<b>Product Type</b>	Multipurpose.
<b>Preparation/Revision Date</b>	19 November 2014
<b>Transportation Emergency Phone No.</b>	FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)
<b>MSDS No.</b>	24444614-2515431-2124421-102103

2	Hazards Identification
---	------------------------

<b>Appearance</b>	Gray liquid.
<b>Odor</b>	Mild ammonia
<b>Principal Hazards</b>	Caution. <ul style="list-style-type: none"> <li>• May cause eye irritation.</li> <li>• May cause skin irritation.</li> <li>• May cause respiratory tract irritation.</li> <li>• Contains components which may cause cancer.</li> <li>• May cause chronic health effects.</li> </ul>

**Target Organs:** Liver Thyroid

See Section 11 for complete health hazard information.

3	Composition/Information on Ingredients
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**Hazardous Ingredients**

Comp	CAS No.	Percentage (by wt.)	Carcinogen
Decabromodiphenyl oxide	1163-19-5	19.8%	N/E
Antimony trioxide	1309-64-4	9.9%	IARC Suspect Carcinogen
Carbon black	1333-86-4	From 1 to 4.9 percent	IARC Suspect Carcinogen

(N/E) - None established

4	First Aid Measures
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<b>Eyes</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.
<b>Skin</b>	Wash with soap and water. Remove contaminated clothing. If skin irritation occurs, get medical attention.
<b>Inhalation</b>	Remove exposed person to fresh air if adverse effects are observed. Call a poison center or doctor if exposed or you feel unwell.
<b>Oral</b>	Treat symptomatically. Get medical attention.
<b>Additional Information</b>	If exposed or concerned: Get medical attention.

5	Fire Fighting Measures
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**Flash Point** Not applicable.  
**Extinguishing Media** Water spray, dry chemical, foam. CO2 may be ineffective on large fires.  
**Firefighting Procedures** Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.  
**Unusual Fire & Explosion Hazards** Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional information.

6	<b>Accidental Release Measures</b>
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**Spill Procedures** Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

7	<b>Handling and Storage</b>
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**Pumping Temperature** Not determined.  
**Maximum Handling Temperature** Ambient  
**Handling Procedures** Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.  
**Maximum Storage Temperature** 5 – 30 °C, 41 – 86 °F  
**Storage Procedures** Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. Store locked up. See section 10 for incompatible materials.  
**Maximum Loading Temperature** Not determined.

8	<b>Exposure Controls/Personal Protection</b>
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**Exposure Limits**

Comp	Exposure Guidelines					
	OSHA		ACGIH		Other	
	TWA	STEL	TWA	STEL	TWA	STEL
Carbon black	3.50 mg/cu. M	N/E	3 mg/cu. M	N/E	3.50 mg/cu. M (u)	N/E

- (s) - Skin exposure
- (p) - Proposed limit
- (c) - Ceiling exposure
- (l) - Recommended exposure limit
- (u) - Supplier recommended exposure limit
- (N/E) - None established

Confidential - See section 1 for HMIRA exemption status

**Other Exposure Limits** Material contains an antimony compound. The ACGIH TLV-TWA and OSHA PEL-TWA for antimony and antimony compounds is 0.5 mg/m3 (as Sb).  
**Engineering Controls** Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.  
**Gloves Procedures** Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.  
**Eye Protection** Safety Glasses.  
**Respiratory Protection** Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.  
**Clothing Recommendation** Gloves, coveralls, apron, boots as necessary to minimize contact. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction.

9	<b>Physical and Chemical Properties</b>
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**Flash Point** Not applicable.  
**Upper Flammable Limit** Not determined.  
**Lower Flammable Limit** Not determined.  
**Autoignition Point** Not determined.

MY4192M

<b>Explosion Data</b>	Material does not have explosive properties.
<b>Vapor Pressure</b>	~ 18 mm Hg (20 °C)
<b>pH</b>	9 – 9.5
<b>Specific Gravity</b>	1.14 (20 °C)
<b>Bulk Density</b>	~ 9.5 Lb/gal, ~ 1.14 Kg/L
<b>Water Solubility</b>	Dispersible.
<b>Percent Solid</b>	~ 55.8% By Weight
<b>Percent Volatile</b>	43.5 – 45% By Weight
<b>Volatile Organic Compound</b>	Not determined.
<b>Vapor Density</b>	< 1 Air=1
<b>Evaporation Rate</b>	< 1 Butyl acetate=1
<b>Odor</b>	Mild ammonia
<b>Appearance</b>	Gray liquid.
<b>Viscosity</b>	< 7000 Centipoise (25 °C)
<b>Odor Threshold</b>	Not determined.
<b>Boiling Point</b>	~ 100 °C, ~ 212 °F(Typical)
<b>Pour Point Temperature</b>	Not determined.
<b>Melting / Freezing Point</b>	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	Stability and Reactivity
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<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	Strong acids. Strong oxidizing agents. Acidic conditions will cause the polymer to precipitate out of solution.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. May also include isocyanates and small amounts of hydrogen cyanide.
<b>Conditions to Avoid</b>	Do not freeze.

11	Toxicological Information
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– ACUTE EXPOSURE –

<b>Eye Irritation</b>	May cause eye irritation. Does not meet Canadian D2B or EU R36 criteria. Based on data from components or similar materials. Vapors may cause irritation.
<b>Skin Irritation</b>	May cause mild skin irritation. Does not meet Canadian D2B or EU R38 criteria. Based on data from components or similar materials. Repeated or prolonged skin contact may cause irritation.
<b>Respiratory Irritation</b>	May cause nose, throat, and lung irritation. Based on data from similar materials.
<b>Dermal Toxicity</b>	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.
<b>Inhalation Toxicity</b>	Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid the inhalation of dust, mists, or vapors. Repeated inhalation causes adverse lung effects in laboratory animals.
<b>Oral Toxicity</b>	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Swallowing this material causes severe irritation of the mouth, esophagus and stomach.
<b>Dermal Sensitization</b>	No data available to indicate product or components may be a skin sensitizer.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

– CHRONIC EXPOSURE –

<b>Chronic Toxicity</b>	Repeated and prolonged exposure to decabromodiphenyl oxide may cause adverse liver and thyroid effects. Prolonged or repeated exposure to antimony compounds may cause damage to the heart, lung, liver and kidney.
<b>Carcinogenicity</b>	Antimony trioxide produced lung tumors in female but not male rats after inhalation exposure. Antimony trioxide is classified by IARC as possibly carcinogenic to humans (Group 2B) and by ACGIH as a suspected human carcinogen (A2). Based on rat inhalation studies IARC concluded that there is sufficient evidence of carbon black's carcinogenicity in animals but inadequate evidence of carcinogenicity in humans (Group 2B). Recent studies suggest that tumors induced by biologically inert particles such as carbon black, under conditions of overload, may be rat-specific effects as they are not seen in mice or hamsters tested under similar conditions or in studies of carbon black workers.
<b>Mutagenicity</b>	Antimony trioxide has produced mutagenic effects in a recombinant DNA Bacillus-subtilis assay.
<b>Reproductive Toxicity</b>	Increased rates of spontaneous late abortions, premature birth, gynecological problems and reduced weight gain of children have been reported in female workers exposed to antimony trioxide.
<b>Teratogenicity</b>	No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

## – ADDITIONAL INFORMATION –

## Other

Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization. Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons with sensitive airways (e.g., asthmatics) may react to vapors.

12	Ecological Information
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## – ENVIRONMENTAL TOXICITY –

<b>Freshwater Fish Toxicity</b>	Chronic effects expected at 10 - 100 mg/L based on component data.
<b>Freshwater Invertebrates Toxicity</b>	Chronic effects expected at 10 - 100 mg/L based on component data.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

## – ENVIRONMENTAL FATE –

<b>Biodegradation</b>	Adequate data is not available to estimate the biodegradation potential of this material.
<b>Bioaccumulation</b>	1 - 10% of the components bioconcentrate in aquatic organisms.
<b>Soil Mobility</b>	Not determined.

13	Disposal Considerations
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<b>Waste Disposal</b>	This material, if discarded, is a hazardous waste under RCRA Regulation 40 CFR 261. 0.010% Arsenic, CAS no. 7440-38-2, D004 ; 0.008% Lead, CAS no. 7439-92-1, D008. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.
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14	Transport Information
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<b>ICAO/IATA I</b>	Not regulated.
<b>ICAO/IATA II</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IMDG EMS Fire</b>	Not applicable.
<b>IMDG EMS Spill</b>	Not applicable.
<b>IMDG MFAG</b>	Not applicable.
<b>MARPOL Annex II</b>	Not determined.
<b>USCG Compatibility</b>	Not determined.
<b>U.S. DOT Bulk</b>	UN3082 Environmentally hazardous substance, liquid, n.o.s. (Antimony trioxide, Arsenic) 9 , III, RQ (Antimony trioxide, Arsenic)
<b>DOT NAERG</b>	171
<b>U.S. DOT (Intermediate)</b>	UN3082 Environmentally hazardous substance, liquid, n.o.s. (Antimony trioxide, Arsenic) 9 , III, RQ (Antimony trioxide, Arsenic)
<b>U.S. DOT Intermediate NAERG</b>	171
<b>U.S. DOT Non-Bulk</b>	Not regulated.
<b>U.S. DOT Non-Bulk NAERG</b>	Not applicable.
<b>Canada</b>	Not regulated.
<b>Mexico</b>	Not regulated.
<b>Bulk Quantity</b>	85000 KG, 187391 lbs.
<b>Intermediate Quantity</b>	11000 KG, 24251 lbs.
<b>Non-Bulk Quantity</b>	400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	Regulatory Information
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## – Global Chemical Inventories –

## USA

Requires notification in the U.S. Commercial shipments from Lubrizol's U.S. location must be exported to non U.S. customers only. Research and development quantities must bear special labels and shipping papers. Sample recipients must comply with the requirements for an R&D exemption under TSCA.

MY4192M

Other TSCA Reg.

Section 8D (Antimony trioxide).Section 8D, 5A (Decabromodiphenyl oxide).May be subject to export notification under TSCA Section 12(b).

EU

To obtain information on the REACH compliance status of this product, please visit [Lubrizol.com/REACH](http://Lubrizol.com/REACH), or e-mail us at [REACH\\_MSDS\\_INQUIRIES@Lubrizol.com](mailto:REACH_MSDS_INQUIRIES@Lubrizol.com)

Japan

This product requires notification in Japan.

Australia

This product requires notification before sale in Australia.

New Zealand

May require notification before sale under New Zealand regulations.

Canada

This product requires notification before sale in Canada.

Switzerland

This product requires notification before sale in Switzerland.

Korea

This product requires notification before sale in Korea.

Philippines

This product requires notification before sale in the Philippines.

China

This product requires notification in China.

Taiwan

May require notification before sale in Taiwan.

**– Other U.S. Federal Regulations –**

SARA Ext. Haz. Subst.

This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

SARA Section 313

19.8% Decabromodiphenyl oxide, CAS no. 1163-19-5; From 5 to 9.9 percent antimony compounds; contains 8.3% as Sb.

SARA 311 Classifications

Acute Hazard	No
Chronic Hazard	Yes
Fire Hazard	No
Reactivity Hazard	No

CERCLA Hazardous Substances

**Transit Reportable Quantities**

Component	Reportable Quantity (RQ)	Units	Reportable Quantity (RQ)	Units
Arsenic	10073	lbs.	4569	KG
Antimony trioxide	10090	lbs.	4577	KG

**– State Regulations –**

Cal. Prop. 65

This product may contain chemical(s) known to the state of California to cause cancer and/or birth defects. For additional information please contact Lubrizol Customer Assistance: America(s): [AmerLZAMCustomerAssistance@Lubrizol.com](mailto:AmerLZAMCustomerAssistance@Lubrizol.com) ; Europe: [EMEAICustomerAssistance@Lubrizol.com](mailto:EMEAICustomerAssistance@Lubrizol.com) ; Asia: [APCustomerAssistance@Lubrizol.com](mailto:APCustomerAssistance@Lubrizol.com)

**– Product Registrations –**

U.S. Fuel Registration

Not applicable.

Finnish Registration Number

Not Registered

Swedish Registration Number

Not Registered

Norwegian Registration Number

Not Registered

Danish Registration Number

Not Registered

Swiss Registration Number

Not Registered

Italian Registration Number

Not Registered

**– Other / International –**

Miscellaneous Regulatory Information

Not determined.

16	Other Information
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US NFPA Codes

Health	Fire	Reactivity	Special
2	1	0	N/E

(N/E) - None established

HMIS Codes

Health	Fire	Reactivity
1*	1	0

Precautinary Labels

- Caution.
- May cause eye irritation.
  - May cause skin irritation.
  - May cause respiratory tract irritation.
  - Contains components which may cause cancer.
  - May cause chronic health effects.

Revision Indicators

Section: 1 Product type.

Changed: 19 November 2014

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*As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.*



Prepared according to 29CFR 1910.1200.

1	Chemical Product and Company Identification
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**Lubrizol Advanced Materials, Inc.**  
9911 Brecksville Road  
Cleveland, Ohio 44141-3247  
Telephone: (216) 447-5000

<b>Product Trade Name</b>	PERFORMAX(TM) 4167
<b>CAS Number</b>	Not applicable for mixtures.
<b>Synonyms</b>	None.
<b>Generic Chemical Name</b>	Mixture.
<b>Product Type</b>	Technical Textiles - Other
<b>Preparation/Revision Date</b>	26 July 2012
<b>Transportation Emergency Phone No.</b>	FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)
<b>MSDS No.</b>	21882117-2022527-002281-102103

2	Hazards Identification
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<b>Appearance</b>	White liquid.
<b>Odor</b>	Mild ammonia
<b>Principal Hazards</b>	Caution. <ul style="list-style-type: none"> <li>• May cause eye irritation.</li> <li>• May cause skin irritation.</li> </ul>

See Section 11 for complete health hazard information.

3	Composition/Information on Ingredients
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**Hazardous Ingredients**

Comp	CAS No.	Percentage (by wt.)	Carcinogen
Titanium dioxide	13463-67-7	From 1 to 4.9 percent	IARC Suspect Carcinogen
Ammonium lauryl sulfate	2235-54-3	From 0.5 to 1.5 percent	N/E

(N/E) - None established

4	First Aid Measures
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<b>Eyes</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.
<b>Skin</b>	Wash with soap and water. Remove contaminated clothing. If skin irritation occurs, get medical attention.
<b>Inhalation</b>	Remove exposed person to fresh air if adverse effects are observed.
<b>Oral</b>	Treat symptomatically. Get medical attention.
<b>Additional Information</b>	If exposed or concerned: Get medical attention.

5	Fire Fighting Measures
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<b>Flash Point</b>	≥ 94 °C, 201.2 °F PMCC (Minimum)
<b>Extinguishing Media</b>	Water spray, dry chemical, foam. CO2 may be ineffective on large fires.
<b>Firefighting Procedures</b>	Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.
<b>Unusual Fire &amp; Explosion Hazards</b>	Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional information.

6	Accidental Release Measures
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**PERFORMAX(TM) 4167**

**Spill Procedures**

Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

7	<b>Handling and Storage</b>
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**Pumping Temperature** Not determined.

**Maximum Handling Temperature** Ambient

**Handling Procedures** Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.

**Maximum Storage Temperature** 5 - 30 °C, 41 - 86 °F

**Storage Procedures** Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.

**Maximum Loading Temperature** Not determined.

8	<b>Exposure Controls/Personal Protection</b>
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**Exposure Limits**

Comp	Exposure Guidelines					
	OSHA		ACGIH		Other	
	TWA	STEL	TWA	STEL	TWA	STEL
Titanium dioxide	15 mg/cu. M	N/E	10 mg/cu. M	N/E	N/E	N/E

- (s) - Skin exposure
- (p) - Proposed limit
- (c) - Ceiling exposure
- (l) - Recommended exposure limit
- (u) - Supplier recommended exposure limit
- (N/E) - None established

**Other Exposure Limits** None known.

**Engineering Controls** Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.

**Gloves Procedures** Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.

**Eye Protection** Safety Glasses.

**Respiratory Protection** Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.

**Clothing Recommendation** Gloves, coveralls, apron, boots as necessary to minimize contact. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction.

9	<b>Physical and Chemical Properties</b>
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**Flash Point** ≥ 94 °C, 201.2 °F PMCC (Minimum)

**Upper Flammable Limit** Not determined.

**Lower Flammable Limit** Not determined.

**Autoignition Point** Not determined.

**Explosion Data** Material does not have explosive properties.

**Vapor Pressure** ~ 18 mm Hg (20 °C)

**pH** 9.3 - 9.7

**Specific Gravity** 1.05 (20 °C)

**Bulk Density** ~ 8.75 Lb/gal, ~ 1.05 Kg/L

**Water Solubility** Dispersible.

**Percent Solid** ~ 51.5% By Weight

**Percent Volatile** 47.5 - 49.5% By Weight

**Volatile Organic Compound** Not determined.

**Vapor Density** < 1 Air=1

**Evaporation Rate** < 1 Butyl acetate=1

**Odor** Mild ammonia

**Appearance** White liquid.

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Viscosity	< 10000 Centipoise (25 °C)
Odor Threshold	Not determined.
Boiling Point	~ 100 °C, ~ 212 °F(Typical)
Pour Point Temperature	Not determined.
Melting / Freezing Point	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	Stability and Reactivity
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<p><b>Stability</b></p> <p><b>Decomposition Temperature</b></p> <p><b>Incompatibility</b></p> <p><b>Polymerization</b></p> <p><b>Thermal Decomposition</b></p> <p><b>Conditions to Avoid</b></p>	<p>Material is normally stable at moderately elevated temperatures and pressures.</p> <p>Not determined.</p> <p>Acids. Bases. Strong oxidizing agents.</p> <p>Will not occur.</p> <p>Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. Nitrogen oxides. Acrylate monomers</p> <p>Do not freeze.</p>
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11	Toxicological Information
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- ACUTE EXPOSURE -

<p><b>Eye Irritation</b></p> <p><b>Skin Irritation</b></p> <p><b>Respiratory Irritation</b></p> <p><b>Dermal Toxicity</b></p> <p><b>Inhalation Toxicity</b></p> <p><b>Oral Toxicity</b></p> <p><b>Dermal Sensitization</b></p> <p><b>Inhalation Sensitization</b></p>	<p>Weak to moderate eye irritant. Does not meet EU R36 criteria. Based on data from components or similar materials. Vapors may cause irritation.</p> <p>May cause mild skin irritation. Does not meet Canadian D2B or EU R38 criteria. Based on data from similar materials. Repeated or prolonged skin contact may cause irritation.</p> <p>If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract. Based on data from components or similar materials. Breathing vapor or mist may cause irritation of the respiratory tract. Use good occupational hygiene practices to minimize inhalation exposure.</p> <p>The LD50 in rabbits is &gt; 2000 mg/Kg. Based on data from components or similar materials.</p> <p>Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid the inhalation of dust, mists, or vapors.</p> <p>The LD50 in rats is &gt; 10,000 mg/Kg. Based on data from components or similar materials. Ingestion of this material may cause gastrointestinal irritation.</p> <p>No data available to indicate product or components may be a skin sensitizer.</p> <p>No data available to indicate product or components may be respiratory sensitizers.</p>
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- CHRONIC EXPOSURE -

<p><b>Chronic Toxicity</b></p> <p><b>Carcinogenicity</b></p> <p><b>Mutagenicity</b></p> <p><b>Reproductive Toxicity</b></p> <p><b>Teratogenicity</b></p>	<p>Repeated excessive ingestion may cause central nervous system effects.</p> <p>Titanium dioxide has been classified by IARC as possibly carcinogenic to humans (Group 2B) through inhalation. This classification is based on inadequate evidence for carcinogenicity in humans, but sufficient evidence of carcinogenicity in animals (rats). It should be noted that recent studies have demonstrated that the rat may be particularly sensitive to high levels of low toxicity dusts such as titanium dioxide. Epidemiology studies do not suggest an increased risk of cancer in humans from occupational exposure to titanium dioxide.</p> <p>No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.</p> <p>No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.</p> <p>No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.</p>
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- ADDITIONAL INFORMATION -

<b>Other</b>	No other health hazards known.
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12	Ecological Information
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- ENVIRONMENTAL TOXICITY -

<p><b>Freshwater Fish Toxicity</b></p> <p><b>Freshwater Invertebrates Toxicity</b></p> <p><b>Algal Inhibition</b></p> <p><b>Saltwater Fish Toxicity</b></p> <p><b>Saltwater Invertebrates Toxicity</b></p> <p><b>Bacteria Toxicity</b></p> <p><b>Miscellaneous Toxicity</b></p>	<p>The acute LC50 is 10 - 100 mg/L based on component data.</p> <p>Not determined.</p> <p>Not determined.</p> <p>Not determined.</p> <p>Not determined.</p> <p>Not determined.</p> <p>Not determined.</p>
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- ENVIRONMENTAL FATE -

**PERFORMAX(TM) 4167**

**Biodegradation** Adequate data is not available to estimate the biodegradation potential of this material.  
**Bioaccumulation** 25% or greater of the components display no potential to bioconcentrate.  
**Soil Mobility** Not determined.

<b>13</b>	<b>Disposal Considerations</b>
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**Waste Disposal** This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

<b>14</b>	<b>Transport Information</b>
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**ICAO/IATA I** Not regulated.  
**ICAO/IATA II** Not regulated.  
**IMDG** Not regulated.  
**IMDG EMS Fire** Not applicable.  
**IMDG EMS Spill** Not applicable.  
**IMDG MFAG** Not applicable.  
**MARPOL Annex II** Not determined.  
**USCG Compatibility** Not determined.  
**U.S. DOT Bulk** Not regulated.  
**DOT NAERG** Not applicable.  
**U.S. DOT (Intermediate)** Not regulated.  
**U.S. DOT Intermediate NAERG** Not applicable.  
**U.S. DOT Non-Bulk** Not regulated.  
**U.S. DOT Non-Bulk NAERG** Not applicable.  
**Canada** Not regulated.  
**Mexico** Not regulated.  
**Bulk Quantity** 85000 KG, 187391 lbs.  
**Intermediate Quantity** 11000 KG, 24251 lbs.  
**Non-Bulk Quantity** 400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

<b>15</b>	<b>Regulatory Information</b>
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**– Global Chemical Inventories –**

**USA** This product is on the TSCA inventory. When used as a biocide it is regulated under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). This product is not FIFRA registered.

**Other TSCA Reg.** None known.

**EU** This product requires notification under the EC Seventh Amendment Directive 92/32/EEC.

**Japan** This product requires notification in Japan.

**Australia** All components are in compliance with chemical notification requirements in Australia.

**New Zealand** May require notification before sale under New Zealand regulations.

**Canada** This product requires notification before sale in Canada.

**Switzerland** May require notification before sale in Switzerland.

**Korea** This product requires notification before sale in Korea.

**Philippines** All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).

**China** This product may be imported to China only by Lubrizol China.

**Taiwan** May require notification before sale in Taiwan.

**– Other U.S. Federal Regulations –**

**SARA Ext. Haz. Subst.** This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

**SARA Section 313** This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.

**SARA 311 Classifications**

Acute Hazard	Yes
Chronic Hazard	Yes
Fire Hazard	No
Reactivity Hazard	No

**CERCLA Hazardous Substances** None known.

**– State Regulations –**

**PERFORMAX(TM) 4167**

Cal. Prop. 65

This product contains chemical(s) known to the state of California to cause cancer and/or birth defects. Call 440-943-4200 for additional information.

**- Product Registrations -**

U.S. Fuel Registration Not applicable.  
 Finnish Registration Number Not Registered  
 Swedish Registration Number Not Registered  
 Norwegian Registration Number Not Registered  
 Danish Registration Number Not Registered  
 Swiss Registration Number Not Registered  
 Italian Registration Number Not Registered

**- Other / International -**

Miscellaneous Regulatory Information Not determined.

16	Other Information
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**US NFPA Codes**

Health	Fire	Reactivity	Special
1	1	0	N/E

(N/E) - None established

**HMIS Codes**

Health	Fire	Reactivity
1	1	0

**Precautionary Labels**

Caution.

- May cause eye irritation.
- May cause skin irritation.

**Revision Indicators**

Section: 3 Hazardous ingredients.	Changed: 26 July 2012
Section: 5 Flash point.	Changed: 27 May 2012
Section: 8 Hazardous ingredients.	Changed: 26 July 2012
Section: 9 Flash point.	Changed: 27 May 2012
Section: 10 Thermal decomposition.	Changed: 26 July 2012
Section: 11 Skin irritation.	Changed: 26 July 2012
Section: 15 Australia.	Changed: 2 March 2012
Section: 15 California proposition 65.	Changed: 2 March 2012
Section: 15 Canada.	Changed: 2 March 2012
Section: 15 China	Changed: 2 March 2012
Section: 15 Philippines.	Changed: 5 March 2012
Section: 15 U.S. TSCA inventory.	Changed: 26 July 2012

*Users Responsibility/Disclaimer of Liability: The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.*





Prepared according to 29CFR 1910.1200.

1	Chemical Product and Company Identification
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**Lubrizol Advanced Materials, Inc.**  
9911 Brecksville Road  
Cleveland, Ohio 44141-3247  
Telephone: (216) 447-5000

**Product Trade Name** PERFORMAX(TM) 4270  
**CAS Number** Not applicable for mixtures.  
**Synonyms** None.  
**Generic Chemical Name** Mixture.  
**Product Type** Window Treatment  
**Preparation/Revision Date** 09 January 2013  
**Transportation Emergency Phone No.** FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)  
**MSDS No.** 22343408-1308111-701311-102103

2	Hazards Identification
---	------------------------

**Appearance** White liquid.  
**Odor** Mild ammonia  
**Principal Hazards** Caution.  

- May cause eye irritation.
- May cause skin irritation.

**Target Organs:** Respiratory system

See Section 11 for complete health hazard information.

3	Composition/Information on Ingredients
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**Hazardous Ingredients**

Comp	CAS No.	Percentage (by wt.)	Carcinogen
Kaolin	1332-58-7	From 20 to 29.9 percent	N/E
Titanium dioxide	13463-67-7	From 1 to 4.9 percent	IARC Suspect Carcinogen
Ammonium stearate	Confidential	From 0.5 to 1.5 percent	N/E
Ammonia	7664-41-7	From 0.1 to 0.9 percent	N/E

(N/E) - None established

4	First Aid Measures
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**Eyes** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.  
**Skin** Wash with soap and water. Remove contaminated clothing. If skin irritation occurs, get medical attention.  
**Inhalation** Remove exposed person to fresh air if adverse effects are observed.  
**Oral** Treat symptomatically. Get medical attention.  
**Additional Information** If exposed or concerned: Get medical attention.

5	Fire Fighting Measures
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**Flash Point** >= 94 °C, 201.2 °F PMCC (Minimum)  
**Extinguishing Media** Water spray, dry chemical, foam. CO2 may be ineffective on large fires.  
**Firefighting Procedures** Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.  
**Unusual Fire & Explosion Hazards** Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional information.

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6	<b>Accidental Release Measures</b>
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**Spill Procedures** Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

7	<b>Handling and Storage</b>
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**Pumping Temperature** Not determined.  
**Maximum Handling Temperature** Ambient  
**Handling Procedures** Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Avoid inhalation of dust, aerosol, mist, spray, fume, or vapor. Use with appropriate and adequate ventilation. Avoid contact with eyes, skin and clothing. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Do not eat, drink or smoke when using this product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.  
**Maximum Storage Temperature** 5 - 30 °C, 41 - 86 °F  
**Storage Procedures** Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.  
**Maximum Loading Temperature** Not determined.

8	<b>Exposure Controls/Personal Protection</b>
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**Exposure Limits**

Comp	Exposure Guidelines					
	OSHA		ACGIH		Other	
	TWA	STEL	TWA	STEL	TWA	STEL
Kaolin	5 mg/cu. M	N/E	2 mg/cu. M	N/E	N/E	N/E
Titanium dioxide	15 mg/cu. M	N/E	10 mg/cu. M	N/E	N/E	N/E
Ammonia	50 ppm	NE	25 ppm	35 ppm	N/E	N/E

- (s) - Skin exposure
- (p) - Proposed limit
- (c) - Ceiling exposure
- (l) - Recommended exposure limit
- (u) - Supplier recommended exposure limit
- (N/E) - None established

**Other Exposure Limits** This product contains formaldehyde, which has an OSHA PEL TWA of 0.75 ppm and ACGIH TLV TWA of 0.3 ppm.  
**Engineering Controls** Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.  
**Gloves Procedures** Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.  
**Eye Protection** Safety Glasses.  
**Respiratory Protection** Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.  
**Clothing Recommendation** Gloves, coveralls, apron, boots as necessary to minimize contact. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction.

9	<b>Physical and Chemical Properties</b>
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**Flash Point** >= 94 °C, 201.2 °F PMCC (Minimum)  
**Upper Flammable Limit** Not determined.  
**Lower Flammable Limit** Not determined.  
**Autoignition Point** Not determined.  
**Explosion Data** Material does not have explosive properties.  
**Vapor Pressure** ~ 18 mm Hg (20 °C)  
**pH** 9.5 - 10.5  
**Specific Gravity** 1.11 (20 °C)  
**Bulk Density** ~ 9.25 Lb/gal, ~ 1.11 Kg/L  
**Water Solubility** Dispersible.  
**Percent Solid** ~ 49.5% By Weight

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Percent Volatile	49 - 52% By Weight
Volatile Organic Compound	Not determined.
Vapor Density	< 1 Air=1
Evaporation Rate	< 1 Butyl acetate=1
Odor	Mild ammonia
Appearance	White liquid.
Viscosity	< 1200 Centipoise (25 °C)
Odor Threshold	Not determined.
Boiling Point	~ 100 °C, ~ 212 °F(Typical)
Pour Point Temperature	Not determined.
Melting / Freezing Point	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	Stability and Reactivity
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<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	Acids. Bases. Strong oxidizing agents.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. Nitrogen oxides. Acrylate monomers
<b>Conditions to Avoid</b>	Do not freeze.

11	Toxicological Information
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– ACUTE EXPOSURE –

<b>Eye Irritation</b>	Weak to moderate eye irritant. Does not meet EU R36 criteria. Based on data from similar materials. Vapors may cause irritation.
<b>Skin Irritation</b>	May cause mild skin irritation. Does not meet Canadian D2B or EU R38 criteria. Based on data from similar materials. Repeated or prolonged skin contact may cause irritation.
<b>Respiratory Irritation</b>	If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract. Based on data from components or similar materials.
<b>Dermal Toxicity</b>	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.
<b>Inhalation Toxicity</b>	Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid the inhalation of dust, mists, or vapors.
<b>Oral Toxicity</b>	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Ingestion of this material may cause gastrointestinal irritation.
<b>Dermal Sensitization</b>	No data available to indicate product or components may be a skin sensitizer.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

– CHRONIC EXPOSURE –

<b>Chronic Toxicity</b>	No data available to indicate product or components present at greater than 1% are chronic health hazards.
<b>Carcinogenicity</b>	Titanium dioxide has been classified by IARC as possibly carcinogenic to humans (Group 2B) through inhalation. This classification is based on inadequate evidence for carcinogenicity in humans, but sufficient evidence of carcinogenicity in animals (rats). It should be noted that recent studies have demonstrated that the rat may be particularly sensitive to high levels of low toxicity dusts such as titanium dioxide. Epidemiology studies do not suggest an increased risk of cancer in humans from occupational exposure to titanium dioxide.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive Toxicity</b>	No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
<b>Teratogenicity</b>	No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

– ADDITIONAL INFORMATION –

<b>Other</b>	Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons with sensitive airways (e.g., asthmatics) may react to vapors.
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12	Ecological Information
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– ENVIRONMENTAL TOXICITY –

<b>Freshwater Fish Toxicity</b>	The acute LC50 is 10 - 100 mg/L based on component data.
<b>Freshwater Invertebrates Toxicity</b>	The acute EC50 is 10 - 100 mg/L based on component data.

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<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

– ENVIRONMENTAL FATE –

<b>Biodegradation</b>	Adequate data is not available to estimate the biodegradation potential of this material.
<b>Bioaccumulation</b>	1 - 10% of the components potentially bioconcentrate, based on octanol/water coefficients.
<b>Soil Mobility</b>	Not determined.

<b>13</b>	<b>Disposal Considerations</b>
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**Waste Disposal** This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

<b>14</b>	<b>Transport Information</b>
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<b>ICAO/IATA I</b>	Not regulated.
<b>ICAO/IATA II</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IMDG EMS Fire</b>	Not applicable.
<b>IMDG EMS Spill</b>	Not applicable.
<b>IMDG MFAG</b>	Not applicable.
<b>MARPOL Annex II</b>	Not determined.
<b>USCG Compatibility</b>	Not determined.
<b>U.S. DOT Bulk</b>	Not regulated.
<b>DOT NAERG</b>	Not applicable.
<b>U.S. DOT (Intermediate)</b>	Not regulated.
<b>U.S. DOT Intermediate NAERG</b>	Not applicable.
<b>U.S. DOT Non-Bulk</b>	Not regulated.
<b>U.S. DOT Non-Bulk NAERG</b>	Not applicable.
<b>Canada</b>	Not regulated.
<b>Mexico</b>	Not regulated.
<b>Bulk Quantity</b>	85000 KG, 187391 lbs.
<b>Intermediate Quantity</b>	11000 KG, 24251 lbs.
<b>Non-Bulk Quantity</b>	400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

<b>15</b>	<b>Regulatory Information</b>
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– Global Chemical Inventories –

<b>USA</b>	This product is on the TSCA inventory. When used as a biocide it is regulated under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). This product is not FIFRA registered.
<b>Other TSCA Reg.</b>	None known.
<b>EU</b>	To obtain information on the REACH compliance status of this product, please visit <a href="http://Lubrizol.com/REACH">Lubrizol.com/REACH</a> , or e-mail us at <a href="mailto:REACH_MSDS_INQUIRIES@Lubrizol.com">REACH_MSDS_INQUIRIES@Lubrizol.com</a>
<b>Japan</b>	This product requires notification in Japan.
<b>Australia</b>	This product requires notification before sale in Australia.
<b>New Zealand</b>	May require notification before sale under New Zealand regulations.
<b>Canada</b>	May require notification before sale under Canadian regulations.
<b>Switzerland</b>	May require notification before sale in Switzerland.
<b>Korea</b>	This product requires notification before sale in Korea.
<b>Philippines</b>	May require notification before sale under Philippines Republic Act 6969.
<b>China</b>	This product requires notification in China.
<b>Taiwan</b>	May require notification before sale in Taiwan.

– Other U.S. Federal Regulations –

<b>SARA Ext. Haz. Subst.</b>	This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.
<b>SARA Section 313</b>	This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.

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**SARA 311 Classifications**

Acute Hazard	Yes
Chronic Hazard	Yes
Fire Hazard	No
Reactivity Hazard	No

**CERCLA Hazardous Substances**

None known.

**-- State Regulations --**

**Cal. Prop. 65**

This product contains chemicals(s) known to the state of California to cause cancer and/or birth defects. Call 440-943-4200 for additional information.

**-- Product Registrations --**

**U.S. Fuel Registration** Not applicable.  
**Finnish Registration Number** Not Registered  
**Swedish Registration Number** Not Registered  
**Norwegian Registration Number** Not Registered  
**Danish Registration Number** Not Registered  
**Swiss Registration Number** Not Registered  
**Italian Registration Number** Not Registered

**-- Other / International --**

**Miscellaneous Regulatory Information**

Not determined.

16	Other Information
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**US NFPA Codes**

Health	Fire	Reactivity	Special
1	1	0	N/E

(N/E) - None established

**HMIS Codes**

Health	Fire	Reactivity
1*	1	0

**Precautionary Labels**

Caution.

- May cause eye irritation.
- May cause skin irritation.

**Revision Indicators**

Section: 2 Principal hazards.	Changed: 13 August 2012
Section: 3 Hazardous ingredients.	Changed: 13 August 2012
Section: 4 Skin first aid.	Changed: 13 August 2012
Section: 5 Flash point.	Changed: 27 May 2012
Section: 7 Handling procedures.	Changed: 13 August 2012
Section: 8 Clothing recommendations.	Changed: 13 August 2012
Section: 8 Hazardous ingredients.	Changed: 13 August 2012
Section: 8 Respiratory protection.	Changed: 13 August 2012
Section: 9 Flash point.	Changed: 27 May 2012
Section: 10 Thermal decomposition.	Changed: 13 August 2012
Section: 11 Dermal sensitization.	Changed: 13 August 2012
Section: 11 Skin irritation.	Changed: 13 August 2012
Section: 12 Freshwater fish toxicity.	Changed: 13 August 2012
Section: 15 California proposition 65.	Changed: 5 March 2012
Section: 16 HMIS codes.	Changed: 13 August 2012
Section: 16 NFPA Codes.	Changed: 13 August 2012
Section: 16 Principal hazards.	Changed: 13 August 2012

*Users Responsibility/Disclaimer of Liability: The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.*



Prepared according to 29CFR 1910.1200.

1	Chemical Product and Company Identification
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**The Lubrizol Corporation**  
**29400 Lakeland Boulevard**  
**Wickliffe, Ohio 44092**  
**Tel: (440) 943-4200**

**Product Trade Name** PERFORMAX(TM) 4276  
**CAS Number** Not applicable for mixtures.  
**Synonyms** None.  
**Generic Chemical Name** Mixture.  
**Product Type** Technical Textiles - Other  
**Preparation/Revision Date** 23 August 2013  
**Transportation Emergency Phone No.** FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)  
**MSDS No.** 23462552-1322518-601311-102103

2	Hazards Identification
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**Appearance** Black liquid.  
**Odor** Mild ammonia  
**Principal Hazards** Danger.
 

- Human carcinogen.
- Component(s) known to cause chronic human health effects.
- May cause eye irritation.
- May cause skin irritation.

**Target Organs:** Lung

See Section 11 for complete health hazard information.

3	Composition/Information on Ingredients
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**Hazardous Ingredients**

Comp	CAS No.	Percentage (by wt.)	Carcinogen
Calcium carbonate	1317-65-3	From 60 to 69.9 percent	N/E
Carbon black	1333-86-4	From 0.1 to 0.9 percent	IARC Suspect Carcinogen
Silicon dioxide	14808-60-7	From 0.1 to 0.9 percent	IARC Human Carcinogen NTP Carcinogen

(N/E) - None established

4	First Aid Measures
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**Eyes** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.  
**Skin** Wash with soap and water. Remove contaminated clothing. If skin irritation occurs, get medical attention.  
**Inhalation** Remove exposed person to fresh air if adverse effects are observed.  
**Oral** Treat symptomatically. Get medical attention.  
**Additional Information** If exposed or concerned: Get medical attention.

5	Fire Fighting Measures
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**Flash Point** Not applicable.  
**Extinguishing Media** Water spray, dry chemical, foam. CO2 may be ineffective on large fires.  
**Firefighting Procedures** Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.  
**Unusual Fire & Explosion Hazards** Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional

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information.

6	<b>Accidental Release Measures</b>
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**Spill Procedures**                      Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

7	<b>Handling and Storage</b>
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**Pumping Temperature**                      Not determined.  
**Maximum Handling Temperature**                      Ambient  
**Handling Procedures**                      Keep containers closed when not in use. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.  
**Maximum Storage Temperature**                      5 - 30 °C, 41 - 86 °F  
**Storage Procedures**                      Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.  
**Maximum Loading Temperature**                      Not determined.

8	<b>Exposure Controls/Personal Protection</b>
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**Exposure Limits**

Comp	Exposure Guidelines					
	OSHA		ACGIH		Other	
	TWA	STEL	TWA	STEL	TWA	STEL
Calcium carbonate	15 mg/cu. M	N/E	N/E	N/E	N/E	N/E
Carbon black	3.50 mg/cu. M	N/E	3 mg/cu. M	N/E	3.50 mg/cu. M (u)	N/E
Silicon dioxide	N/E	N/E	0.03 mg/cu. M	N/E	N/E	N/E

- (s) - Skin exposure
- (p) - Proposed limit
- (c) - Ceiling exposure
- (l) - Recommended exposure limit
- (u) - Supplier recommended exposure limit
- (N/E) - None established

Confidential - See section 1 for HMIRA exemption status

**Other Exposure Limits**                      None known.  
**Engineering Controls**                      Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.  
**Gloves Procedures**                      Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.  
**Eye Protection**                      Safety Glasses.  
**Respiratory Protection**                      Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.  
**Clothing Recommendation**                      Gloves, coveralls, apron, boots as necessary to minimize contact. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction.

9	<b>Physical and Chemical Properties</b>
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**Flash Point**                      Not applicable.  
**Upper Flammable Limit**                      Not determined.  
**Lower Flammable Limit**                      Not determined.  
**Autoignition Point**                      Not determined.  
**Explosion Data**                      Material does not have explosive properties.  
**Vapor Pressure**                      ~ 18 mm Hg (20 °C)  
**pH**                      8 - 9  
**Specific Gravity**                      1.38 (25 °C)  
**Bulk Density**                      ~ 11.5 Lb/gal, ~ 1.38 Kg/L  
**Water Solubility**                      Dispersible.  
**Percent Solid**                      ~ 61.5% By Weight  
**Percent Volatile**                      37 - 40% By Weight

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<b>Volatile Organic Compound</b>	Not determined.
<b>Vapor Density</b>	< 1 Air=1
<b>Evaporation Rate</b>	< 1 Butyl acetate=1
<b>Odor</b>	Mild ammonia
<b>Appearance</b>	Black liquid.
<b>Viscosity</b>	< 15000 Centipoise (25 °C)
<b>Odor Threshold</b>	Not determined.
<b>Boiling Point</b>	~ 100 °C, ~ 212 °F(Typical)
<b>Pour Point Temperature</b>	Not determined.
<b>Melting / Freezing Point</b>	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	Stability and Reactivity
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<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	Acids. Bases. Strong oxidizing agents. Fluorine
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: calcium. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. Nitrogen oxides. Acrylate monomers
<b>Conditions to Avoid</b>	Do not freeze.

11	Toxicological Information
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- ACUTE EXPOSURE -

<b>Eye Irritation</b>	May cause eye irritation. Does not meet Canadian D2B or EU R36 criteria. Based on data from components or similar materials. Vapors formed from heating may cause eye irritation.
<b>Skin Irritation</b>	May cause mild skin irritation. Does not meet Canadian D2B or EU R38 criteria. Based on data from components or similar materials. Repeated or prolonged skin contact may cause irritation.
<b>Respiratory Irritation</b>	If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract. Based on data from components or similar materials.
<b>Dermal Toxicity</b>	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.
<b>Inhalation Toxicity</b>	Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid inhalation of mists or vapors. Inhalation of this material may be harmful.
<b>Oral Toxicity</b>	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Ingestion of this material may cause gastrointestinal irritation.
<b>Dermal Sensitization</b>	No data available to indicate product or components may be a skin sensitizer.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

- CHRONIC EXPOSURE -

<b>Chronic Toxicity</b>	Over exposure to crystalline silica may cause development of silicosis (progressive fibrosis). Symptoms initially include coughing, wheezing, and non-specific chest illnesses. As the disease progresses, pain in the chest and decreased breathing capacity is evident. Chronic exposure to respirable limestone dust in excess of appropriate exposure limits has caused pneumoconiosis.
<b>Carcinogenicity</b>	Inhaled crystalline silica in the form of cristobalite or quartz has been classified by the IARC as having sufficient evidence in humans for carcinogenicity. Based on rat inhalation studies IARC concluded that there is sufficient evidence of carbon black's carcinogenicity in animals but inadequate evidence of carcinogenicity in humans (Group 2B). Recent studies suggest that tumors induced by biologically inert particles such as carbon black, under conditions of overload, may be rat-specific effects as they are not seen in mice or hamsters tested under similar conditions or in studies of carbon black workers.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive Toxicity</b>	No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
<b>Teratogenicity</b>	No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

- ADDITIONAL INFORMATION -

<b>Other</b>	Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons with sensitive airways (e.g., asthmatics) may react to vapors.
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12	Ecological Information
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- ENVIRONMENTAL TOXICITY -

<b>Freshwater Fish Toxicity</b>	Not determined.
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<b>Freshwater Invertebrates Toxicity</b>	Not determined.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

**-- ENVIRONMENTAL FATE --**

<b>Biodegradation</b>	Adequate data is not available to estimate the biodegradation potential of this material.
<b>Bioaccumulation</b>	Less than 1.0% of the components potentially bioconcentrate, based on octanol/water coefficients.
<b>Soil Mobility</b>	Not determined.

<b>13</b>	<b>Disposal Considerations</b>
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**Waste Disposal** This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

<b>14</b>	<b>Transport Information</b>
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<b>ICAO/IATA I</b>	Not regulated.
<b>ICAO/IATA II</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IMDG EMS Fire</b>	Not applicable.
<b>IMDG EMS Spill</b>	Not applicable.
<b>IMDG MFAG</b>	Not applicable.
<b>MARPOL Annex II</b>	Not determined.
<b>USCG Compatibility</b>	Not determined.
<b>U.S. DOT Bulk</b>	Not regulated.
<b>DOT NAERG</b>	Not applicable.
<b>U.S. DOT (Intermediate)</b>	Not regulated.
<b>U.S. DOT Intermediate NAERG</b>	Not applicable.
<b>U.S. DOT Non-Bulk</b>	Not regulated.
<b>U.S. DOT Non-Bulk NAERG</b>	Not applicable.
<b>Canada</b>	Not regulated.
<b>Mexico</b>	Not regulated.
<b>Bulk Quantity</b>	85000 KG, 187391 lbs.
<b>Intermediate Quantity</b>	11000 KG, 24251 lbs.
<b>Non-Bulk Quantity</b>	400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

<b>15</b>	<b>Regulatory Information</b>
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**-- Global Chemical Inventories --**

<b>USA</b>	This product is on the TSCA inventory. When used as a biocide it is regulated under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). This product is not FIFRA registered.
<b>Other TSCA Reg.</b>	None known.
<b>EU</b>	To obtain information on the REACH compliance status of this product, please visit <a href="http://Lubrizol.com/REACH">Lubrizol.com/REACH</a> , or e-mail us at <a href="mailto:REACH_MSDS_INQUIRIES@Lubrizol.com">REACH_MSDS_INQUIRIES@Lubrizol.com</a>
<b>Japan</b>	This product requires notification in Japan.
<b>Australia</b>	May require notification before sale under Australian regulations.
<b>New Zealand</b>	This product requires notification before sale in New Zealand.
<b>Canada</b>	This product is on the Canadian Domestic Substance List (DSL). When used as a biocide it is regulated under the Pest Control Products Act (PCPA). This product is not PCPA registered.
<b>Switzerland</b>	May require notification before sale in Switzerland.
<b>Korea</b>	May require notification before sale in Korea.
<b>Philippines</b>	May require notification before sale under Philippines Republic Act 6969.
<b>China</b>	This product may require notification in China.
<b>Taiwan</b>	May require notification before sale in Taiwan.

**-- Other U.S. Federal Regulations --**

**SARA Ext. Haz. Subst.** This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

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SARA Section 313

This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.

**SARA 311 Classifications**

Acute Hazard	No
Chronic Hazard	Yes
Fire Hazard	No
Reactivity Hazard	No

**CERCLA Hazardous Substances**

None known.

**- State Regulations -**

**Cal. Prop. 65**

This product contains chemical(s) known to the state of California to cause cancer and/or birth defects. Call 440-943-4200 for additional information.

**- Product Registrations -**

U.S. Fuel Registration Not applicable.  
 Finnish Registration Number Not Registered  
 Swedish Registration Number Not Registered  
 Norwegian Registration Number Not Registered  
 Danish Registration Number Not Registered  
 Swiss Registration Number Not Registered  
 Italian Registration Number Not Registered

**- Other / International -**

**Miscellaneous Regulatory Information**

Not determined.

16	Other Information
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**US NFPA Codes**

Health	Fire	Reactivity	Special
2	1	0	N/E

(N/E) - None established

**HMIS Codes**

Health	Fire	Reactivity
1*	1	0

**Precautionary Labels**

Danger.

- Human carcinogen.
- Component(s) known to cause chronic human health effects.
- May cause eye irritation.
- May cause skin irritation.

**Revision Indicators**

This MSDS has no revisions since 23 August 2013

*As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.*





Prepared according to 29CFR 1910.1200.

1	<b>Chemical Product and Company Identification</b>
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**The Lubrizol Corporation**  
**29400 Lakeland Boulevard**  
**Wickliffe, Ohio 44092**  
**Tel: (440) 943-4200**

<b>Product Trade Name</b>	PERFORMAX(TM) 4289
<b>CAS Number</b>	Not applicable for mixtures.
<b>Synonyms</b>	None.
<b>Generic Chemical Name</b>	Mixture.
<b>Product Type</b>	Transportation
<b>Preparation/Revision Date</b>	23 August 2013
<b>Transportation Emergency Phone No.</b>	FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)
<b>MSDS No.</b>	53462648-1821418-202311-102103

2	<b>Hazards Identification</b>
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<b>Appearance</b>	Off-white liquid.
<b>Odor</b>	Mild ammonia
<b>Principal Hazards</b>	Caution. <ul style="list-style-type: none"> <li>• May cause eye irritation.</li> </ul>

See Section 11 for complete health hazard information.

3	<b>Composition/Information on Ingredients</b>
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<b>Hazardous Ingredients</b>	This material contains no ingredients requiring disclosure under regulatory hazard criteria for this jurisdiction. See Section 11 for additional details.
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4	<b>First Aid Measures</b>
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<b>Eyes</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.
<b>Skin</b>	Wash with soap and water. Get medical attention if irritation develops.
<b>Inhalation</b>	Remove exposed person to fresh air if adverse effects are observed.
<b>Oral</b>	Treat symptomatically. Get medical attention.
<b>Additional Information</b>	Note to physician: Treat symptomatically.

5	<b>Fire Fighting Measures</b>
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<b>Flash Point</b>	Not applicable.
<b>Extinguishing Media</b>	Water spray, dry chemical, foam. CO2 may be ineffective on large fires.
<b>Firefighting Procedures</b>	Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.
<b>Unusual Fire &amp; Explosion Hazards</b>	Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional information.

6	<b>Accidental Release Measures</b>
---	------------------------------------

<b>Spill Procedures</b>	Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.
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7	<b>Handling and Storage</b>
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<b>Pumping Temperature</b>	Not determined.
<b>Maximum Handling Temperature</b>	Ambient
<b>Handling Procedures</b>	Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.
<b>Maximum Storage Temperature</b>	5 - 30 °C, 41 - 86 °F
<b>Storage Procedures</b>	Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.
<b>Maximum Loading Temperature</b>	Not determined.

8	<b>Exposure Controls/Personal Protection</b>
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<b>Exposure Limits</b>	None established
<b>Other Exposure Limits</b>	ACGIH exposure limit for wax fume is a TLV-TWA of 2mg/m3.
<b>Engineering Controls</b>	Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.
<b>Gloves Procedures</b>	Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.
<b>Eye Protection</b>	Safety Glasses.
<b>Respiratory Protection</b>	Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.
<b>Clothing Recommendation</b>	No special clothing requirement.

9	<b>Physical and Chemical Properties</b>
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<b>Flash Point</b>	Not applicable.
<b>Upper Flammable Limit</b>	Not determined.
<b>Lower Flammable Limit</b>	Not determined.
<b>Autoignition Point</b>	Not determined.
<b>Explosion Data</b>	Material does not have explosive properties.
<b>Vapor Pressure</b>	~ 18 mm Hg (20 °C)
<b>pH</b>	8.5 - 9.5
<b>Specific Gravity</b>	1.02 (25 °C)
<b>Bulk Density</b>	~ 8.5 Lb/gal, ~ 1.02 Kg/L
<b>Water Solubility</b>	Dispersible.
<b>Percent Solid</b>	~ 48.5% By Weight
<b>Percent Volatile</b>	50 - 53% By Weight
<b>Volatile Organic Compound</b>	Not determined.
<b>Vapor Density</b>	< 1 Air=1
<b>Evaporation Rate</b>	< 1 Butyl acetate=1
<b>Odor</b>	Mild ammonia
<b>Appearance</b>	Off-white liquid.
<b>Viscosity</b>	< 14000 Centipoise (25 °C)
<b>Odor Threshold</b>	Not determined.
<b>Boiling Point</b>	~ 100 °C, ~ 212 °F(Typical)
<b>Pour Point Temperature</b>	Not determined.
<b>Melting / Freezing Point</b>	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	<b>Stability and Reactivity</b>
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<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	Acids. Bases. Strong oxidizing agents.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion

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conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. Nitrogen oxides. Acrylate monomers

**Conditions to Avoid**

Do not freeze.

11	<b>Toxicological Information</b>
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- ACUTE EXPOSURE -

- Eye Irritation**                      May cause eye irritation. Does not meet Canadian D2B or EU R36 criteria. Based on data from components or similar materials. Vapors may cause irritation.
- Skin Irritation**                     Not expected to be a primary skin irritant. Based on data from similar materials. Repeated or prolonged skin contact may cause irritation.
- Respiratory Irritation**            If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract. Based on data from similar materials. If material is heated to decomposition, fumes generated may result in respiratory irritation.
- Dermal Toxicity**                     The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.
- Inhalation Toxicity**                Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid inhalation of mists or vapors.
- Oral Toxicity**                        The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Ingestion of this material may cause gastrointestinal irritation.
- Dermal Sensitization**              No data available to indicate product or components may be a skin sensitizer.
- Inhalation Sensitization**         No data available to indicate product or components may be respiratory sensitizers.

- CHRONIC EXPOSURE -

- Chronic Toxicity**                    No data available to indicate product or components present at greater than 1% are chronic health hazards.
- Carcinogenicity**                    No data available to indicate any components present at greater than 0.1% may present a carcinogenic hazard.
- Mutagenicity**                        No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
- Reproductive Toxicity**            No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
- Teratogenicity**                      No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

- ADDITIONAL INFORMATION -

- Other**                                    No other health hazards known.

12	<b>Ecological Information</b>
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- ENVIRONMENTAL TOXICITY -

- Freshwater Fish Toxicity**        The acute LC50 is 10 - 100 mg/L based on component data.
- Freshwater Invertebrates Toxicity**    Chronic effects expected at 10 - 100 mg/L based on component data.
- Algal Inhibition**                    Not determined.
- Saltwater Fish Toxicity**            Not determined.
- Saltwater Invertebrates Toxicity**    Not determined.
- Bacteria Toxicity**                    Not determined.
- Miscellaneous Toxicity**            Not determined.

- ENVIRONMENTAL FATE -

- Biodegradation**                    Adequate data is not available to estimate the biodegradation potential of this material.
- Bioaccumulation**                  25% or greater of the components display no potential to bioconcentrate.
- Soil Mobility**                        Not determined.

13	<b>Disposal Considerations</b>
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- Waste Disposal**                    This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14	<b>Transport Information</b>
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- ICAO/IATA I**                        Not regulated.
- ICAO/IATA II**                        Not regulated.
- IMDG**                                Not regulated.
- IMDG EMS Fire**                    Not applicable.
- IMDG EMS Spill**                    Not applicable.
- IMDG MFAG**                        Not applicable.
- MARPOL Annex II**                    Not determined.

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<b>USCG Compatibility</b>	Not determined.
<b>U.S. DOT Bulk</b>	Not regulated.
<b>DOT NAERG</b>	Not applicable.
<b>U.S. DOT (Intermediate)</b>	Not regulated.
<b>U.S. DOT Intermediate NAERG</b>	Not applicable.
<b>U.S. DOT Non-Bulk</b>	Not regulated.
<b>U.S. DOT Non-Bulk NAERG</b>	Not applicable.
<b>Canada</b>	Not regulated.
<b>Mexico</b>	Not regulated.
<b>Bulk Quantity</b>	85000 KG, 187391 lbs.
<b>Intermediate Quantity</b>	11000 KG, 24251 lbs.
<b>Non-Bulk Quantity</b>	400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	Regulatory Information
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**– Global Chemical Inventories –**

<b>USA</b>	All components of this material are on the US TSCA Inventory or are exempt.
<b>Other TSCA Reg.</b>	None known.
<b>EU</b>	To obtain information on the REACH compliance status of this product, please visit <a href="http://Lubrizol.com/REACH">Lubrizol.com/REACH</a> , or e-mail us at <a href="mailto:REACH_MSDS_INQUIRIES@Lubrizol.com">REACH_MSDS_INQUIRIES@Lubrizol.com</a>
<b>Japan</b>	This product requires notification in Japan.
<b>Australia</b>	This product requires notification before sale in Australia.
<b>New Zealand</b>	This product requires notification before sale in New Zealand.
<b>Canada</b>	This product requires notification before sale in Canada.
<b>Switzerland</b>	May require notification before sale in Switzerland.
<b>Korea</b>	All components are in compliance in Korea.
<b>Philippines</b>	All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).
<b>China</b>	This product may be imported to China only by Lubrizol China.
<b>Taiwan</b>	May require notification before sale in Taiwan.

**– Other U.S. Federal Regulations –**

<b>SARA Ext. Haz. Subst.</b>	This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.								
<b>SARA Section 313</b>	This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.								
<b>SARA 311 Classifications</b>	<table border="1" style="border-collapse: collapse;"> <tr> <td>Acute Hazard</td> <td>No</td> </tr> <tr> <td>Chronic Hazard</td> <td>No</td> </tr> <tr> <td>Fire Hazard</td> <td>No</td> </tr> <tr> <td>Reactivity Hazard</td> <td>No</td> </tr> </table>	Acute Hazard	No	Chronic Hazard	No	Fire Hazard	No	Reactivity Hazard	No
Acute Hazard	No								
Chronic Hazard	No								
Fire Hazard	No								
Reactivity Hazard	No								
<b>CERCLA Hazardous Substances</b>	None known.								

**– State Regulations –**

<b>Cal. Prop. 65</b>	This product contains chemical(s) known to the state of California to cause cancer and/or birth defects. Call 440-943-4200 for additional information.
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**– Product Registrations –**

<b>U.S. Fuel Registration</b>	Not applicable.
<b>Finnish Registration Number</b>	Not Registered
<b>Swedish Registration Number</b>	Not Registered
<b>Norwegian Registration Number</b>	Not Registered
<b>Danish Registration Number</b>	Not Registered
<b>Swiss Registration Number</b>	Not Registered
<b>Italian Registration Number</b>	Not Registered

**– Other / International –**

<b>Miscellaneous Regulatory Information</b>	Not determined.
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16	Other Information
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# PERFORMAX(TM) 4289

## US NFPA Codes

Health	Fire	Reactivity	Special
1	1	0	N/E

(N/E) - None established

## HMIS Codes

Health	Fire	Reactivity
1	1	0

## Precautionary Labels

Caution.

- May cause eye irritation.

## Revision Indicators

This MSDS has no revisions since 23 August 2013

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*As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.*



Prepared according to 29CFR 1910.1200.

1	Chemical Product and Company Identification
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**The Lubrizol Corporation**  
29400 Lakeland Boulevard  
Wickliffe, Ohio 44092  
Tel: (440) 943-4200

<b>Product Trade Name</b>	PERFORMAX(TM) 4292
<b>CAS Number</b>	Not applicable for mixtures.
<b>Synonyms</b>	None.
<b>Generic Chemical Name</b>	Mixture.
<b>Product Type</b>	Apparel
<b>Preparation/Revision Date</b>	23 August 2013
<b>Transportation Emergency Phone No.</b>	FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)
<b>MSDS No.</b>	23466767-1124738-5019311-102103

2	Hazards Identification
---	------------------------

<b>Appearance</b>	White liquid.
<b>Odor</b>	Ammonia
<b>Principal Hazards</b>	Danger. <ul style="list-style-type: none"> <li>• Causes severe skin irritation.</li> <li>• Harmful if inhaled.</li> <li>• Causes eye irritation.</li> <li>• Causes respiratory tract irritation.</li> <li>• May cause reproductive effects based on data in laboratory animals.</li> <li>• May be harmful if absorbed through skin.</li> </ul>

**Target Organs:** Central nervous system

See Section 11 for complete health hazard information.

3	Composition/Information on Ingredients
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**Hazardous Ingredients**

Comp	CAS No.	Percentage (by wt.)	Carcinogen
Cyclic amide	872-50-4	6.4%	N/E
Ammonia	7664-41-7	0.6%	N/E

(N/E) - None established

4	First Aid Measures
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<b>Eyes</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.
<b>Skin</b>	Wash with plenty of soap and water. If skin irritation occurs, get medical attention. Take off contaminated clothing and wash before re-use.
<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor.
<b>Oral</b>	Treat symptomatically. Get medical attention.
<b>Additional Information</b>	If exposed or concerned: Get medical attention.

5	Fire Fighting Measures
---	------------------------

<b>Flash Point</b>	Not applicable.
<b>Extinguishing Media</b>	Water spray, dry chemical, foam. CO2 may be ineffective on large fires.
<b>Firefighting Procedures</b>	Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.

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**Unusual Fire & Explosion Hazards** Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional information.

6	<b>Accidental Release Measures</b>
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**Spill Procedures** Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate spill area. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

7	<b>Handling and Storage</b>
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**Pumping Temperature** Not determined.  
**Maximum Handling Temperature** Ambient  
**Handling Procedures** Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.  
**Maximum Storage Temperature** 5 - 30 °C, 41 - 86 °F  
**Storage Procedures** Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. Store locked up. See section 10 for incompatible materials.  
**Maximum Loading Temperature** Not determined.

8	<b>Exposure Controls/Personal Protection</b>
---	--

**Exposure Limits**

Comp	Exposure Guidelines					
	OSHA		ACGIH		Other	
	TWA	STEL	TWA	STEL	TWA	STEL
Cyclic amide	N/E	N/E	N/E	N/E	100 ppm (I)	N/E
Ammonia	50 ppm	N/E	25 ppm	35 ppm	N/E	N/E

- (s) - Skin exposure
  - (p) - Proposed limit
  - (c) - Ceiling exposure
  - (I) - Recommended exposure limit
  - (u) - Supplier recommended exposure limit
  - (N/E) - None established
- Confidential - See section 1 for HMIRA exemption status

**Other Exposure Limits** Contains mineral oil. Under conditions which may generate mists, observe the OSHA PEL of 5 mg per cubic meter, ACGIH TWA of 5 mg per cubic meter.  
**Engineering Controls** Use local exhaust ventilation to control mists or vapors. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.  
**Gloves Procedures** Neoprene.  
**Eye Protection** Chemical goggles or faceshield.  
**Respiratory Protection** Use NIOSH/MSHA approved full face respirator with an organic vapor cartridge if the recommended exposure limit is exceeded. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator.  
**Clothing Recommendation** Gloves, coveralls, apron, boots as necessary to minimize contact. Wear either a chemical protective suit or apron when potential for contact with material exists. Use neoprene or nitrile rubber boots when necessary to avoid contaminating shoes. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction.

9	<b>Physical and Chemical Properties</b>
---	---

**Flash Point** Not applicable.  
**Upper Flammable Limit** Not determined.  
**Lower Flammable Limit** Not determined.  
**Autoignition Point** Not determined.  
**Explosion Data** Material does not have explosive properties.  
**Vapor Pressure** ~ 18 mm Hg (20 °C)  
**pH** 9 - 10.5  
**Specific Gravity** 1.08 (25 °C)  
**Bulk Density** ~ 9 Lb/gal, ~ 1.08 Kg/L

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Water Solubility	Dispersible.
Percent Solid	~ 40.5% By Weight
Percent Volatile	58 - 61% By Weight
Volatile Organic Compound	Not determined.
Vapor Density	< 1 Air=1
Evaporation Rate	< 1 Butyl acetate=1
Odor	Ammonia
Appearance	White liquid.
Viscosity	< 5000 Centipoise (25 °C)
Odor Threshold	Not determined.
Boiling Point	~ 100 °C, ~ 212 °F(Typical)
Pour Point Temperature	Not determined.
Melting / Freezing Point	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	Stability and Reactivity
----	--------------------------

Stability	Material is normally stable at moderately elevated temperatures and pressures.
Decomposition Temperature	Not determined.
Incompatibility	Strong acids. Strong oxidizing agents. Acidic conditions will cause the polymer to precipitate out of solution.
Polymerization	Will not occur.
Thermal Decomposition	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. May also include isocyanates and small amounts of hydrogen cyanide.
Conditions to Avoid	Do not freeze.

11	Toxicological Information
----	---------------------------

### -- ACUTE EXPOSURE --

Eye Irritation	Moderate to strong eye irritant. Based on data from similar materials. Vapors may cause irritation.
Skin Irritation	Severe skin irritant. Based on data from similar materials. Prolonged or repeated contact as from clothing wet with the material may cause severe irritation.
Respiratory Irritation	Nose, throat and lung irritant. Based on data from similar materials. At processing or combustion temperatures this product may emit fumes and vapors that cause irritation, possibly severe, to the respiratory tract, eyes, or skin.
Dermal Toxicity	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials. Components of this material may be absorbed through the skin.
Inhalation Toxicity	High concentrations may cause headaches, dizziness, nausea, behavioral changes, weakness, drowsiness and stupor. Avoid inhalation of mists or vapors.
Oral Toxicity	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain.
Dermal Sensitization	No data available to indicate product or components may be a skin sensitizer.
Inhalation Sensitization	No data available to indicate product or components may be respiratory sensitizers.

### -- CHRONIC EXPOSURE --

Chronic Toxicity	In a 4 week inhalation study with rats, cyclic amide caused effects on the lung, thymus, blood and lymph tissues. Repeated and prolonged ingestion of cyclic amide caused increased severity of spontaneous progressive nephropathy in male rats, and increased liver weight and cell hypertrophy in male and female mice.
Carcinogenicity	This product contains mineral oils which are considered to be severely refined and not considered to be carcinogenic under IARC. All of the oils in this product have been demonstrated to contain less than 3% extractables by the IP 346 test.
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Reproductive Toxicity	Adverse effects on reproduction have been reported in rats after ingestion of cyclic amide, which also caused mild generalized changes in the parental animals. The relevance of these findings to human is unknown.
Teratogenicity	Fetal effects have been seen in pregnant animals exposed by ingestion, inhalation and skin contact to cyclic amide, which has occurred in the presence and absence of maternal toxicity. The relevance of these findings to humans is unknown.

### -- ADDITIONAL INFORMATION --

Other	Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization. Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons with sensitive airways (e.g., asthmatics) may react to vapors.
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12	Ecological Information
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### -- ENVIRONMENTAL TOXICITY --

**PERFORMAX(TM) 4292**

<b>Freshwater Fish Toxicity</b>	The acute LC50 is 10 - 100 mg/L based on component data.
<b>Freshwater Invertebrates Toxicity</b>	Not determined.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

– ENVIRONMENTAL FATE –

<b>Biodegradation</b>	Adequate data is not available to estimate the biodegradation potential of this material.
<b>Bioaccumulation</b>	Less than 1.0% of the components potentially bioconcentrate, based on octanol/water coefficients.
<b>Soil Mobility</b>	Not determined.

13	<b>Disposal Considerations</b>
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**Waste Disposal** This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14	<b>Transport Information</b>
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<b>ICAO/IATA I</b>	Not regulated.
<b>ICAO/IATA II</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IMDG EMS Fire</b>	Not applicable.
<b>IMDG EMS Spill</b>	Not applicable.
<b>IMDG MFAG</b>	Not applicable.
<b>MARPOL Annex II</b>	Not determined.
<b>USCG Compatibility</b>	Not determined.
<b>U.S. DOT Bulk</b>	UN3082 Environmentally hazardous substance, liquid, n.o.s. (Ammonia) 9 , III, RQ (Ammonia)
<b>DOT NAERG</b>	171
<b>U.S. DOT (Intermediate)</b>	UN3082 Environmentally hazardous substance, liquid, n.o.s. (Ammonia) 9 , III, RQ (Ammonia)
<b>U.S. DOT Intermediate NAERG</b>	171
<b>U.S. DOT Non-Bulk</b>	Not regulated.
<b>U.S. DOT Non-Bulk NAERG</b>	Not applicable.
<b>Canada</b>	Not regulated.
<b>Mexico</b>	Not regulated.
<b>Bulk Quantity</b>	85000 KG, 187391 lbs.
<b>Intermediate Quantity</b>	11000 KG, 24251 lbs.
<b>Non-Bulk Quantity</b>	400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	<b>Regulatory Information</b>
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– Global Chemical Inventories –

<b>USA</b>	All components of this material are in compliance with Section 5 of TSCA. This material is manufactured under the Polymer Exemption rule.
<b>Other TSCA Reg.</b>	None known.
<b>EU</b>	To obtain information on the REACH compliance status of this product, please visit <a href="http://Lubrizol.com/REACH">Lubrizol.com/REACH</a> , or e-mail us at <a href="mailto:REACH_MSDS_INQUIRIES@Lubrizol.com">REACH_MSDS_INQUIRIES@Lubrizol.com</a>
<b>Japan</b>	This product requires notification in Japan.
<b>Australia</b>	This product requires notification before sale in Australia.
<b>New Zealand</b>	May require notification before sale under New Zealand regulations.
<b>Canada</b>	This product requires notification before sale in Canada.
<b>Switzerland</b>	All components are in compliance with the Environmentally Hazardous Substances Ordinance in Switzerland.
<b>Korea</b>	May require notification before sale in Korea.
<b>Philippines</b>	May require notification before sale under Philippines Republic Act 6969.
<b>China</b>	This product requires notification in China.
<b>Taiwan</b>	May require notification before sale in Taiwan.

– Other U.S. Federal Regulations –

**SARA Ext. Haz. Subst.** This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances

**PERFORMAX(TM) 4292**

**SARA Section 313**  
**SARA 311 Classifications**

list.  
 6.4% N-Methyl-2-pyrrolidinone, CAS no. 872-50-4

Acute Hazard	Yes
Chronic Hazard	Yes
Fire Hazard	No
Reactivity Hazard	No

**CERCLA Hazardous Substances**

**Transit Reportable Quantities**

Component	Reportable Quantity RQ	Units	Reportable Quantity RQ	Units
Ammonia	15967	lbs.	7243	KG

**- State Regulations -**

**Cal. Prop. 65**

This product contains chemical(s) known to the state of California to cause cancer and/or birth defects. Call 440-943-4200 for additional information.

**- Product Registrations -**

**U.S. Fuel Registration** Not applicable.  
**Finnish Registration Number** Not Registered  
**Swedish Registration Number** Not Registered  
**Norwegian Registration Number** Not Registered  
**Danish Registration Number** Not Registered  
**Swiss Registration Number** Not Registered  
**Italian Registration Number** Not Registered

**- Other / International -**

**Miscellaneous Regulatory Information** Not determined.

16	Other Information
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**US NFPA Codes**

Health	Fire	Reactivity	Special
2	1	0	N/E

(N/E) - None established

**HMIS Codes**

Health	Fire	Reactivity
1*	1	0

**Precautionary Labels**

- Danger.
- Causes severe skin irritation.
  - Harmful if inhaled.
  - Causes eye irritation.
  - Causes respiratory tract irritation.
  - May cause reproductive effects based on data in laboratory animals.
  - May be harmful if absorbed through skin.

**Revision Indicators**

Section: 11 Inhalation toxicity.  
 Section: 15 U.S. TSCA inventory.

Changed: 23 August 2013  
 Changed: 1 March 2013

*As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.*



Prepared according to 29CFR 1910.1200.

1	<b>Chemical Product and Company Identification</b>
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**The Lubrizol Corporation**  
29400 Lakeland Boulevard  
Wickliffe, Ohio 44092  
Tel: (440) 943-4200

<b>Product Trade Name</b>	PERFORMAX(TM) 4321
<b>CAS Number</b>	Not applicable for mixtures.
<b>Synonyms</b>	None.
<b>Generic Chemical Name</b>	Mixture.
<b>Product Type</b>	Technical Textiles - Other
<b>Preparation/Revision Date</b>	23 August 2013
<b>Transportation Emergency Phone No.</b>	FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)
<b>MSDS No.</b>	23464231-3521228-0055311-102103

2	<b>Hazards Identification</b>
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<b>Appearance</b>	White liquid.
<b>Odor</b>	Mild ammonia
<b>Principal Hazards</b>	Warning. <ul style="list-style-type: none"> <li>• Harmful if inhaled.</li> <li>• Causes respiratory tract irritation.</li> <li>• May cause reproductive effects based on data in laboratory animals.</li> <li>• May be harmful if absorbed through skin.</li> <li>• May cause eye irritation.</li> <li>• May cause skin irritation.</li> </ul>

**Target Organs:** Central nervous system

See Section 11 for complete health hazard information.

3	<b>Composition/Information on Ingredients</b>
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**Hazardous Ingredients**

Comp	CAS No.	Percentage (by wt.)	Carcinogen
Cyclic amide	872-50-4	7.8%	N/E

(N/E) - None established

4	<b>First Aid Measures</b>
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<b>Eyes</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.
<b>Skin</b>	Wash with soap and water. Get medical attention if irritation develops.
<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor.
<b>Oral</b>	Treat symptomatically. Get medical attention.
<b>Additional Information</b>	If exposed or concerned: Get medical attention.

5	<b>Fire Fighting Measures</b>
---	-------------------------------

<b>Flash Point</b>	Not applicable.
<b>Extinguishing Media</b>	Water spray, dry chemical, foam. CO2 may be ineffective on large fires.
<b>Firefighting Procedures</b>	Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.
<b>Unusual Fire &amp; Explosion Hazards</b>	Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional information.

PERFORMAX(TM) 4321

6	Accidental Release Measures
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**Spill Procedures** Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Ventilate spill area. Prevent entry into sewers and waterways. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

7	Handling and Storage
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**Pumping Temperature** Not determined.  
**Maximum Handling Temperature** Ambient  
**Handling Procedures** Keep containers closed when not in use. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.  
**Maximum Storage Temperature** 5 - 30 °C, 41 - 86 °F  
**Storage Procedures** Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. Store locked up. See section 10 for incompatible materials.  
**Maximum Loading Temperature** Not determined.

8	Exposure Controls/Personal Protection
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**Exposure Limits**

Comp	Exposure Guidelines					
	OSHA		ACGIH		Other	
	TWA	STEL	TWA	STEL	TWA	STEL
Cyclic amide	N/E	N/E	N/E	N/E	100 ppm (l)	N/E

- (s) - Skin exposure
- (p) - Proposed limit
- (c) - Ceiling exposure
- (l) - Recommended exposure limit
- (u) - Supplier recommended exposure limit
- (N/E) - None established
- Confidential - See section 1 for HMIRA exemption status

**Other Exposure Limits** None known.  
**Engineering Controls** Use local exhaust ventilation to control mists or vapors. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.  
**Gloves Procedures** Neoprene.  
**Eye Protection** Safety Glasses.  
**Respiratory Protection** Use NIOSH/MSHA approved full face respirator with an organic vapor cartridge if the recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator.  
**Clothing Recommendation** Gloves, coveralls, apron, boots as necessary to minimize contact. Use neoprene or nitrile rubber boots when necessary to avoid contaminating shoes.

9	Physical and Chemical Properties
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**Flash Point** Not applicable.  
**Upper Flammable Limit** Not determined.  
**Lower Flammable Limit** Not determined.  
**Autoignition Point** Not determined.  
**Explosion Data** Material does not have explosive properties.  
**Vapor Pressure** ~ 18 mm Hg (20 °C)  
**pH** 8.5 - 9.5  
**Specific Gravity** 1.05 (25 °C)  
**Bulk Density** ~ 8.75 Lb/gal, ~ 1.05 Kg/L  
**Water Solubility** Dispersible.  
**Percent Solid** ~ 40.5% By Weight  
**Percent Volatile** 58 - 61% By Weight  
**Volatile Organic Compound** Not determined.  
**Vapor Density** < 1 Air=1  
**Evaporation Rate** < 1 Butyl acetate=1

# PERFORMAX(TM) 4321

<b>Odor</b>	Mild ammonia
<b>Appearance</b>	White liquid.
<b>Viscosity</b>	< 30000 Centipoise (25 °C)
<b>Odor Threshold</b>	Not determined.
<b>Boiling Point</b>	~ 100 °C, ~ 212 °F(Typical)
<b>Pour Point Temperature</b>	Not determined.
<b>Melting / Freezing Point</b>	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	<b>Stability and Reactivity</b>
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<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	Strong acids. Strong oxidizing agents. Acidic conditions will cause the polymer to precipitate out of solution.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. May also include isocyanates and small amounts of hydrogen cyanide.
<b>Conditions to Avoid</b>	Do not freeze.

11	<b>Toxicological Information</b>
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**– ACUTE EXPOSURE –**

<b>Eye Irritation</b>	Weak to moderate eye irritant. Does not meet EU R36 criteria. Based on data from similar materials. At processing or combustion temperatures this product may emit fumes and vapors that cause irritation, possibly severe, to the eyes.
<b>Skin Irritation</b>	May cause slight skin irritation. Does not meet EU R38 criteria. Based on data from similar materials. Prolonged or repeated exposure may cause a slight flaking, tenderness, and softening of skin.
<b>Respiratory Irritation</b>	Nose, throat and lung irritant. Based on data from similar materials. At processing or combustion temperatures this product may emit fumes and vapors that cause irritation, possibly severe, to the respiratory tract, eyes, or skin.
<b>Dermal Toxicity</b>	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials. Components of this material may be absorbed through the skin.
<b>Inhalation Toxicity</b>	High concentrations may cause headaches, dizziness, nausea, behavioral changes, weakness, drowsiness and stupor. Avoid inhalation of mists or vapors.
<b>Oral Toxicity</b>	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain.
<b>Dermal Sensitization</b>	No data available to indicate product or components may be a skin sensitizer.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

**– CHRONIC EXPOSURE –**

<b>Chronic Toxicity</b>	Repeated excessive ingestion may cause central nervous system effects. In a 4 week inhalation study with rats, cyclic amide caused effects on the lung, thymus, blood and lymph tissues. Repeated and prolonged ingestion of cyclic amide caused increased severity of spontaneous progressive nephropathy in male rats, and increased liver weight and cell hypertrophy in male and female mice.
<b>Carcinogenicity</b>	No data available to indicate any components present at greater than 0.1% may present a carcinogenic hazard.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive Toxicity</b>	Adverse effects on reproduction have been reported in rats after ingestion of cyclic amide, which also caused mild generalized changes in the parental animals. The relevance of these findings to human is unknown.
<b>Teratogenicity</b>	Fetal effects have been seen in pregnant animals exposed by ingestion, inhalation and skin contact to cyclic amide, which has occurred in the presence and absence of maternal toxicity. The relevance of these findings to humans is unknown.

**– ADDITIONAL INFORMATION –**

<b>Other</b>	Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization. Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons with sensitive airways (e.g., asthmatics) may react to vapors.
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12	<b>Ecological Information</b>
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**– ENVIRONMENTAL TOXICITY –**

<b>Freshwater Fish Toxicity</b>	Not determined.
<b>Freshwater Invertebrates Toxicity</b>	Not determined.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.

**PERFORMAX(TM) 4321**

**Bacteria Toxicity** Not determined.  
**Miscellaneous Toxicity** Not determined.

**– ENVIRONMENTAL FATE –**

**Biodegradation** Adequate data is not available to estimate the biodegradation potential of this material.  
**Bioaccumulation** Less than 1.0% of the components potentially bioconcentrate, based on octanol/water coefficients.  
**Soil Mobility** Not determined.

13	<b>Disposal Considerations</b>
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**Waste Disposal** This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14	<b>Transport Information</b>
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**ICAO/IATA I** Not regulated.  
**ICAO/IATA II** Not regulated.  
**IMDG** Not regulated.  
**IMDG EMS Fire** Not applicable.  
**IMDG EMS Spill** Not applicable.  
**IMDG MFAG** Not applicable.  
**MARPOL Annex II** Not determined.  
**USCG Compatibility** Not determined.  
**U.S. DOT Bulk** Not regulated.  
**DOT NAERG** Not applicable.  
**U.S. DOT (Intermediate)** Not regulated.  
**U.S. DOT Intermediate NAERG** Not applicable.  
**U.S. DOT Non-Bulk** Not regulated.  
**U.S. DOT Non-Bulk NAERG** Not applicable.  
**Canada** Not regulated.  
**Mexico** Not regulated.  
**Bulk Quantity** 85000 KG, 187391 lbs.  
**Intermediate Quantity** 11000 KG, 24251 lbs.  
**Non-Bulk Quantity** 400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	<b>Regulatory Information</b>
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**– Global Chemical Inventories –**

**USA** All components of this material are in compliance with Section 5 of TSCA. This material is manufactured under the Polymer Exemption rule.

**Other TSCA Reg.** None known.

**EU** To obtain information on the REACH compliance status of this product, please visit [Lubrizol.com/REACH](http://Lubrizol.com/REACH), or e-mail us at [REACH\\_MSDS\\_INQUIRIES@Lubrizol.com](mailto:REACH_MSDS_INQUIRIES@Lubrizol.com)

**Japan** This product requires notification in Japan.

**Australia** This product requires notification before sale in Australia.

**New Zealand** This product requires notification before sale in New Zealand.

**Canada** This product requires notification before sale in Canada.

**Switzerland** May require notification before sale in Switzerland.

**Korea** All components are in compliance in Korea.

**Philippines** All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).

**China** All components of this product are listed on the Inventory of Existing Chemical Substances in China.

**Taiwan** May require notification before sale in Taiwan.

**– Other U.S. Federal Regulations –**

**SARA Ext. Haz. Subst.** This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

**SARA Section 313** 7.8% N-Methyl-2-pyrrolidinone, CAS no. 872-50-4

**SARA 311 Classifications**

Acute Hazard	Yes
Chronic Hazard	Yes
Fire Hazard	No

**PERFORMAX(TM) 4321**

Reactivity Hazard | No

CERCLA Hazardous Substances

None known.

**– State Regulations –**

Cal. Prop. 65

This product contains chemicals(s) known to the state of California to cause cancer and/or birth defects. Call 440-943-4200 for additional information.

**– Product Registrations –**

U.S. Fuel Registration Not applicable.  
 Finnish Registration Number Not Registered  
 Swedish Registration Number Not Registered  
 Norwegian Registration Number Not Registered  
 Danish Registration Number Not Registered  
 Swiss Registration Number Not Registered  
 Italian Registration Number Not Registered

**– Other / International –**

Miscellaneous Regulatory Information

Not determined.

**16 Other Information**

US NFPA Codes

Health	Fire	Reactivity	Special
2	1	0	N/E

(N/E) - None established

HMIS Codes

Health	Fire	Reactivity
2*	1	0

Precautionary Labels

Warning.

- Harmful if inhaled.
- Causes respiratory tract irritation.
- May cause reproductive effects based on data in laboratory animals.
- May be harmful if absorbed through skin.
- May cause eye irritation.
- May cause skin irritation.

Revision Indicators

Section: 3 Hazardous ingredients.	Changed: 14 March 2013
Section: 8 Hazardous ingredients.	Changed: 14 March 2013
Section: 9 Viscosity.	Changed: 14 March 2013
Section: 10 Thermal decomposition.	Changed: 14 March 2013
Section: 15 SARA section 313.	Changed: 14 March 2013

*As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.*



Prepared according to 29CFR 1910.1200.

1	<b>Chemical Product and Company Identification</b>
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**The Lubrizol Corporation**  
**29400 Lakeland Boulevard**  
**Wickliffe, Ohio 44092**  
**Tel: (440) 943-4200**

<b>Product Trade Name</b>	PERFORMAX(TM) 4355
<b>CAS Number</b>	Not applicable for mixtures.
<b>Synonyms</b>	None.
<b>Generic Chemical Name</b>	Mixture.
<b>Product Type</b>	Transportation
<b>Preparation/Revision Date</b>	10 March 2014
<b>Transportation Emergency Phone No.</b>	FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)
<b>MSDS No.</b>	24141613-7511013-402421-102103

2	<b>Hazards Identification</b>
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<b>Appearance</b>	White liquid.
<b>Odor</b>	Mild ammonia
<b>Principal Hazards</b>	Caution. <ul style="list-style-type: none"> <li>• May cause eye irritation.</li> </ul>

See Section 11 for complete health hazard information.

3	<b>Composition/Information on Ingredients</b>
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<b>Hazardous Ingredients</b>	This material contains no ingredients requiring disclosure under regulatory hazard criteria for this jurisdiction. See Section 11 for additional details.
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4	<b>First Aid Measures</b>
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<b>Eyes</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.
<b>Skin</b>	Wash with soap and water. Get medical attention if irritation develops.
<b>Inhalation</b>	Remove exposed person to fresh air if adverse effects are observed.
<b>Oral</b>	Treat symptomatically. Get medical attention.
<b>Additional Information</b>	Note to physician: Treat symptomatically.

5	<b>Fire Fighting Measures</b>
---	-------------------------------

<b>Flash Point</b>	>= 94 °C, 201.2 °F PMCC (Minimum)
<b>Extinguishing Media</b>	Water spray, dry chemical, foam. CO2 may be ineffective on large fires.
<b>Firefighting Procedures</b>	Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.
<b>Unusual Fire &amp; Explosion Hazards</b>	Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional information.

6	<b>Accidental Release Measures</b>
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<b>Spill Procedures</b>	Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.
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PERFORMAX(TM) 4355

7	Handling and Storage
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<b>Pumping Temperature</b>	Not determined.
<b>Maximum Handling Temperature</b>	Ambient
<b>Handling Procedures</b>	Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.
<b>Maximum Storage Temperature</b>	5 - 30 °C, 41 - 86 °F
<b>Storage Procedures</b>	Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.
<b>Maximum Loading Temperature</b>	Not determined.

8	Exposure Controls/Personal Protection
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<b>Exposure Limits</b>	None established
<b>Other Exposure Limits</b>	None known.
<b>Engineering Controls</b>	Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.
<b>Gloves Procedures</b>	Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.
<b>Eye Protection</b>	Safety Glasses.
<b>Respiratory Protection</b>	Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.
<b>Clothing Recommendation</b>	No special clothing requirement.

9	Physical and Chemical Properties
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<b>Flash Point</b>	≥ 94 °C, 201.2 °F PMCC (Minimum)
<b>Upper Flammable Limit</b>	Not determined.
<b>Lower Flammable Limit</b>	Not determined.
<b>Autoignition Point</b>	Not determined.
<b>Explosion Data</b>	Material does not have explosive properties.
<b>Vapor Pressure</b>	~ 18 mm Hg (20 °C)
<b>pH</b>	7.5 - 8.5
<b>Specific Gravity</b>	1.07 (20 °C)
<b>Bulk Density</b>	8.9 Lb/gal, 1.07 Kg/L
<b>Water Solubility</b>	Dispersible.
<b>Percent Solid</b>	~ 48% By Weight
<b>Percent Volatile</b>	51 - 53% By Weight
<b>Volatile Organic Compound</b>	Not determined.
<b>Vapor Density</b>	< 1 Air=1
<b>Evaporation Rate</b>	< 1 Butyl acetate=1
<b>Odor</b>	Mild ammonia
<b>Appearance</b>	White liquid.
<b>Viscosity</b>	< 400 Centipoise (25 °C)
<b>Odor Threshold</b>	Not determined.
<b>Boiling Point</b>	~ 100 °C, ~ 212 °F(Typical)
<b>Pour Point Temperature</b>	Not determined.
<b>Melting / Freezing Point</b>	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	Stability and Reactivity
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<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	Acids. Bases. Strong oxidizing agents.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion

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conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. Nitrogen oxides. Acrylate monomers  
Do not freeze.

## Conditions to Avoid

11	Toxicological Information
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### - ACUTE EXPOSURE -

<b>Eye Irritation</b>	May cause eye irritation. Does not meet Canadian D2B or EU R36 criteria. Based on data from components or similar materials. Vapors may cause irritation.
<b>Skin Irritation</b>	Not expected to be a primary skin irritant. Based on data from components or similar materials. Repeated or prolonged skin contact may cause irritation.
<b>Respiratory Irritation</b>	If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract. Based on data from components or similar materials.
<b>Dermal Toxicity</b>	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.
<b>Inhalation Toxicity</b>	Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid inhalation of mists or vapors.
<b>Oral Toxicity</b>	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Ingestion of this material may cause gastrointestinal irritation.
<b>Dermal Sensitization</b>	No data available to indicate product or components may be a skin sensitizer.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

### - CHRONIC EXPOSURE -

<b>Chronic Toxicity</b>	No data available to indicate product or components present at greater than 1% are chronic health hazards.
<b>Carcinogenicity</b>	No data available to indicate any components present at greater than 0.1% may present a carcinogenic hazard.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive Toxicity</b>	No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
<b>Teratogenicity</b>	No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

### - ADDITIONAL INFORMATION -

<b>Other</b>	No other health hazards known.
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12	Ecological Information
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### - ENVIRONMENTAL TOXICITY -

<b>Freshwater Fish Toxicity</b>	The acute LC50 is 10 - 100 mg/L based on component data.
<b>Freshwater Invertebrates Toxicity</b>	Chronic effects expected at 10 - 100 mg/L based on component data.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

### - ENVIRONMENTAL FATE -

<b>Biodegradation</b>	Adequate data is not available to estimate the biodegradation potential of this material.
<b>Bioaccumulation</b>	25% or greater of the components display no potential to bioconcentrate.
<b>Soil Mobility</b>	Not determined.

13	Disposal Considerations
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<b>Waste Disposal</b>	This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.
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14	Transport Information
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<b>ICAO/IATA I</b>	Not regulated.
<b>ICAO/IATA II</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IMDG EMS Fire</b>	Not applicable.
<b>IMDG EMS Spill</b>	Not applicable.
<b>IMDG MFAG</b>	Not applicable.
<b>MARPOL Annex II</b>	Not determined.
<b>USCG Compatibility</b>	Not determined.

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U.S. DOT Bulk	Not regulated.
DOT NAERG	Not applicable.
U.S. DOT (Intermediate)	Not regulated.
U.S. DOT Intermediate NAERG	Not applicable.
U.S. DOT Non-Bulk	Not regulated.
U.S. DOT Non-Bulk NAERG	Not applicable.
Canada	Not regulated.
Mexico	Not regulated.
Bulk Quantity	85000 KG, 187391 lbs.
Intermediate Quantity	11000 KG, 24251 lbs.
Non-Bulk Quantity	400 KG, 882 lbs.

**Review classification requirements before shipping materials at elevated temperatures.**

15	Regulatory Information
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**– Global Chemical Inventories –**

<b>USA</b>	All components of this material are on the US TSCA Inventory or are exempt.
<b>Other TSCA Reg.</b>	None known.
<b>EU</b>	To obtain information on the REACH compliance status of this product, please visit <a href="http://Lubrizol.com/REACH">Lubrizol.com/REACH</a> , or e-mail us at <a href="mailto:REACH_MSDS_INQUIRIES@Lubrizol.com">REACH_MSDS_INQUIRIES@Lubrizol.com</a>
<b>Japan</b>	May require notification in Japan.
<b>Australia</b>	May require notification before sale under Australian regulations.
<b>New Zealand</b>	May require notification before sale under New Zealand regulations.
<b>Canada</b>	May require notification before sale under Canadian regulations.
<b>Switzerland</b>	May require notification before sale in Switzerland.
<b>Korea</b>	May require notification before sale in Korea.
<b>Philippines</b>	May require notification before sale under Philippines Republic Act 6969.
<b>China</b>	This product may require notification in China.
<b>Taiwan</b>	May require notification before sale in Taiwan.

**– Other U.S. Federal Regulations –**

<b>SARA Ext. Haz. Subst.</b>	This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.								
<b>SARA Section 313</b>	This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.								
<b>SARA 311 Classifications</b>	<table border="1"> <tr> <td>Acute Hazard</td> <td>No</td> </tr> <tr> <td>Chronic Hazard</td> <td>No</td> </tr> <tr> <td>Fire Hazard</td> <td>No</td> </tr> <tr> <td>Reactivity Hazard</td> <td>No</td> </tr> </table>	Acute Hazard	No	Chronic Hazard	No	Fire Hazard	No	Reactivity Hazard	No
Acute Hazard	No								
Chronic Hazard	No								
Fire Hazard	No								
Reactivity Hazard	No								
<b>CERCLA Hazardous Substances</b>	None known.								

**– State Regulations –**

<b>Cal. Prop. 65</b>	This product may contain chemical(s) known to the state of California to cause cancer and/or birth defects. For additional information please contact Lubrizol Customer Assistance: America(s): <a href="mailto:AmerLZAMCustomerAssistance@Lubrizol.com">AmerLZAMCustomerAssistance@Lubrizol.com</a> ; Europe: <a href="mailto:EMEAICustomerAssistance@Lubrizol.com">EMEAICustomerAssistance@Lubrizol.com</a> ; Asia: <a href="mailto:APCustomerAssistance@Lubrizol.com">APCustomerAssistance@Lubrizol.com</a>
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**– Product Registrations –**

<b>U.S. Fuel Registration</b>	Not applicable.
<b>Finnish Registration Number</b>	Not Registered
<b>Swedish Registration Number</b>	Not Registered
<b>Norwegian Registration Number</b>	Not Registered
<b>Danish Registration Number</b>	Not Registered
<b>Swiss Registration Number</b>	Not Registered
<b>Italian Registration Number</b>	Not Registered

**– Other / International –**

<b>Miscellaneous Regulatory Information</b>	Not determined.
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16	Other Information
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US NFPA Codes	Health	Fire	Reactivity	Special
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1	1	0	N/E
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(N/E) - None established

HMIS Codes

Health	Fire	Reactivity
1	1	0

Precautionary Labels

- Caution.
- May cause eye irritation.

Revision Indicators

This MSDS has no revisions since 10 March 2014

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*As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.*



Prepared according to 29CFR 1910.1200.

1	<b>Chemical Product and Company Identification</b>
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**Lubrizol Advanced Materials, Inc.**  
9911 Brecksville Road  
Cleveland, Ohio 44141-3247  
Telephone: (216) 447-5000

**Product Trade Name** PERFORMAX(TM) 4372  
**CAS Number** Not applicable for mixtures.  
**Synonyms** None.  
**Generic Chemical Name** Mixture.  
**Product Type** Apparel  
**Preparation/Revision Date** 23 April 2014  
**Transportation Emergency Phone No.** FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)  
**MSDS No.** 34206809-1821134-001431-102103

2	<b>Hazards Identification</b>
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**Appearance** White liquid.  
**Odor** Mild ammonia  
**Principal Hazards** Danger.  

- Causes severe skin irritation.
- Causes eye irritation.
- Causes respiratory tract irritation.
- May cause reproductive effects based on data in laboratory animals.
- May be harmful if absorbed through skin.

**Target Organs:** Central nervous system

See Section 11 for complete health hazard information.

3	<b>Composition/Information on Ingredients</b>
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**Hazardous Ingredients**

Comp	CAS No.	Percentage (by wt.)	Carcinogen
Cyclic amide	872-50-4	4.3%	N/E
Ammonia	7664-41-7	0.9%	N/E

(N/E) - None established

4	<b>First Aid Measures</b>
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**Eyes** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.  
**Skin** Wash with plenty of soap and water. If skin irritation occurs, get medical attention. Take off contaminated clothing and wash before re-use.  
**Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor.  
**Oral** Treat symptomatically. Get medical attention.  
**Additional Information** If exposed or concerned: Get medical attention.

5	<b>Fire Fighting Measures</b>
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**Flash Point** Not applicable.  
**Extinguishing Media** Water spray, dry chemical, foam. CO2 may be ineffective on large fires.  
**Firefighting Procedures** Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.  
**Unusual Fire & Explosion Hazards** Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional

PERFORMAX(TM) 4372

information.

6	<b>Accidental Release Measures</b>
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**Spill Procedures** Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate spill area. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

7	<b>Handling and Storage</b>
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**Pumping Temperature** Not determined.  
**Maximum Handling Temperature** Ambient  
**Handling Procedures** Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.  
**Maximum Storage Temperature** 5 - 30 °C, 41 - 86 °F  
**Storage Procedures** Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.  
**Maximum Loading Temperature** Not determined.

8	<b>Exposure Controls/Personal Protection</b>
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**Exposure Limits**

Comp	Exposure Guidelines					
	OSHA		ACGIH		Other	
	TWA	STEL	TWA	STEL	TWA	STEL
Cyclic amide	N/E	N/E	N/E	N/E	100 ppm (I)	N/E
Ammonia	50 ppm	N/E	25 ppm	35 ppm	N/E	N/E

- (s) - Skin exposure
- (p) - Proposed limit
- (c) - Ceiling exposure
- (l) - Recommended exposure limit
- (u) - Supplier recommended exposure limit
- (N/E) - None established
- Confidential - See section 1 for HMIRA exemption status

**Other Exposure Limits** Contains mineral oil. Under conditions which may generate mists, observe the OSHA PEL of 5 mg per cubic meter, ACGIH TWA of 5 mg per cubic meter.  
**Engineering Controls** Use local exhaust ventilation to control mists or vapors. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.  
**Gloves Procedures** Neoprene.  
**Eye Protection** Chemical goggles or faceshield.  
**Respiratory Protection** Use NIOSH/MSHA approved full face respirator with an organic vapor cartridge if the recommended exposure limit is exceeded. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator.  
**Clothing Recommendation** Gloves, coveralls, apron, boots as necessary to minimize contact. Wear either a chemical protective suit or apron when potential for contact with material exists. Use neoprene or nitrile rubber boots when necessary to avoid contaminating shoes. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction.

9	<b>Physical and Chemical Properties</b>
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**Flash Point** Not applicable.  
**Upper Flammable Limit** Not determined.  
**Lower Flammable Limit** Not determined.  
**Autoflignition Point** Not determined.  
**Explosion Data** Material does not have explosive properties.  
**Vapor Pressure** ~ 18 mm Hg (20 °C)  
**pH** 9.5 - 10.5  
**Specific Gravity** 1.08 (25 °C)  
**Bulk Density** ~ 9 Lb/gal, ~ 1.08 Kg/L  
**Water Solubility** Dispersible.

## PERFORMAX(TM) 4372

Percent Solid	~ 40.5% By Weight
Percent Volatile	58 - 61% By Weight
Volatile Organic Compound	Not determined.
Vapor Density	< 1 Air=1
Evaporation Rate	< 1 Butyl acetate=1
Odor	Mild ammonia
Appearance	White liquid.
Viscosity	< 1000 Centipoise (25 °C)
Odor Threshold	Not determined.
Boiling Point	~ 100 °C, ~ 212 °F(Typical)
Pour Point Temperature	Not determined.
Melting / Freezing Point	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	Stability and Reactivity
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<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	Strong acids. Strong oxidizing agents. Acidic conditions will cause the polymer to precipitate out of solution.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. May also include isocyanates and small amounts of hydrogen cyanide.
<b>Conditions to Avoid</b>	Do not freeze.

11	Toxicological Information
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**- ACUTE EXPOSURE -**

<b>Eye Irritation</b>	Moderate to strong eye irritant. Based on data from similar materials. Vapors may cause irritation.
<b>Skin Irritation</b>	Severe skin irritant. Based on data from similar materials. Prolonged or repeated contact as from clothing wet with the material may cause severe irritation.
<b>Respiratory Irritation</b>	Nose, throat and lung irritant. Based on data from similar materials. At processing or combustion temperatures this product may emit fumes and vapors that cause irritation, possibly severe, to the respiratory tract, eyes, or skin. Overexposure to thermal decomposition products produced by high processing temperatures may be irritating to the respiratory tract.
<b>Dermal Toxicity</b>	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials. Components of this material may be absorbed through the skin.
<b>Inhalation Toxicity</b>	Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid inhalation of mists or vapors. Inhalation of fumes caused by overheating this material may cause "polymer fume fever", a temporary flu-like illness with fever, chills, and sometimes cough, of approximately 24 hours duration.
<b>Oral Toxicity</b>	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain.
<b>Dermal Sensitization</b>	No data available to indicate product or components may be a skin sensitizer.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

**- CHRONIC EXPOSURE -**

<b>Chronic Toxicity</b>	In a 4 week inhalation study with rats, cyclic amide caused effects on the lung, thymus, blood and lymph tissues. Repeated and prolonged ingestion of cyclic amide caused increased severity of spontaneous progressive nephropathy in male rats, and increased liver weight and cell hypertrophy in male and female mice.
<b>Carcinogenicity</b>	This product contains mineral oils which are considered to be severely refined and not considered to be carcinogenic under IARC. All of the oils in this product have been demonstrated to contain less than 3% extractables by the IP 346 test.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive Toxicity</b>	Adverse effects on reproduction have been reported in rats after ingestion of cyclic amide, which also caused mild generalized changes in the parental animals. The relevance of these findings to human is unknown.
<b>Teratogenicity</b>	Fetal effects have been seen in pregnant animals exposed by ingestion, inhalation and skin contact to cyclic amide, which has occurred in the presence and absence of maternal toxicity. The relevance of these findings to humans is unknown.

**- ADDITIONAL INFORMATION -**

<b>Other</b>	Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization. Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons with sensitive airways (e.g., asthmatics) may react to vapors.
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12	Ecological Information
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- ENVIRONMENTAL TOXICITY -

Freshwater Fish Toxicity	The acute LC50 is 10 - 100 mg/L based on component data.
Freshwater Invertebrates Toxicity	Not determined.
Algal Inhibition	Not determined.
Saltwater Fish Toxicity	Not determined.
Saltwater Invertebrates Toxicity	Not determined.
Bacteria Toxicity	Not determined.
Miscellaneous Toxicity	Not determined.

- ENVIRONMENTAL FATE -

Biodegradation	Adequate data is not available to estimate the biodegradation potential of this material.
Bioaccumulation	Less than 1.0% of the components potentially bioconcentrate, based on octanol/water coefficients.
Soil Mobility	Not determined.

13	Disposal Considerations
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**Waste Disposal** This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14	Transport Information
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ICAO/IATA I	Not regulated.
ICAO/IATA II	Not regulated.
IMDG	Not regulated.
IMDG EMS Fire	Not applicable.
IMDG EMS Spill	Not applicable.
IMDG MFAG	Not applicable.
MARPOL Annex II	Not determined.
USCG Compatibility	Not determined.
U.S. DOT Bulk	UN3082 Environmentally hazardous substance, liquid, n.o.s. (Ammonia) 9 , III, RQ (Ammonia)
DOT NAERG	171
U.S. DOT (Intermediate)	UN3082 Environmentally hazardous substance, liquid, n.o.s. (Ammonia) 9 , III, RQ (Ammonia)
U.S. DOT Intermediate NAERG	171
U.S. DOT Non-Bulk	Not regulated.
U.S. DOT Non-Bulk NAERG	Not applicable.
Canada	Not regulated.
Mexico	Not regulated.
Bulk Quantity	85000 KG, 187391 lbs.
Intermediate Quantity	11000 KG, 24251 lbs.
Non-Bulk Quantity	400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	Regulatory Information
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- Global Chemical Inventories -

USA	All components of this material are in compliance with Section 5 of TSCA. This material is manufactured under the Polymer Exemption rule.
Other TSCA Reg.	None known.
EU	To obtain information on the REACH compliance status of this product, please visit <a href="http://Lubrizol.com/REACH">Lubrizol.com/REACH</a> , or e-mail us at <a href="mailto:REACH_MSDS_INQUIRIES@Lubrizol.com">REACH_MSDS_INQUIRIES@Lubrizol.com</a>
Japan	This product requires notification in Japan.
Australia	May require notification before sale under Australian regulations.
New Zealand	May require notification before sale under New Zealand regulations.
Canada	This product requires notification before sale in Canada.
Switzerland	May require notification before sale in Switzerland.
Korea	May require notification before sale in Korea.
Philippines	May require notification before sale under Philippines Republic Act 6969.
China	This product requires notification in China.
Taiwan	May require notification before sale in Taiwan.

- Other U.S. Federal Regulations -

**PERFORMAX(TM) 4372****SARA Ext. Haz. Subst.**

This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

**SARA Section 313**

4.3% N-Methyl-2-pyrrolidinone, CAS no. 872-50-4

**SARA 311 Classifications**

Acute Hazard	Yes
Chronic Hazard	Yes
Fire Hazard	No
Reactivity Hazard	No

**CERCLA Hazardous Substances****Transit Reportable Quantities**

Component	Reportable Quantity RQ	Units	Reportable Quantity RQ	Units
Ammonia	10652	lbs.	4832	KG

**- State Regulations -****Cal. Prop. 65**

This product may contain chemical(s) known to the state of California to cause cancer and/or birth defects. For additional information please contact Lubrizol Customer Assistance: America(s): AmerLZAMCustomerAssistance@Lubrizol.com ; Europe: EMEAICustomerAssistance@Lubrizol.com ; Asia: APCustomerAssistance@Lubrizol.com

**- Product Registrations -****U.S. Fuel Registration**

Not applicable.

**Finnish Registration Number**

Not Registered

**Swedish Registration Number**

Not Registered

**Norwegian Registration Number**

Not Registered

**Danish Registration Number**

Not Registered

**Swiss Registration Number**

Not Registered

**Italian Registration Number**

Not Registered

**- Other / International -****Miscellaneous Regulatory Information**

Not determined.

16	Other Information
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**US NFPA Codes**

Health	Fire	Reactivity	Special
2	1	0	N/E

(N/E) - None established

**HMIS Codes**

Health	Fire	Reactivity
2*	1	0

**Precautionary Labels**

Danger.

- Causes severe skin irritation.
- Causes eye irritation.
- Causes respiratory tract irritation.
- May cause reproductive effects based on data in laboratory animals.
- May be harmful if absorbed through skin.

**Revision Indicators**

This MSDS has no revisions since 23 April 2014

**Users Responsibility/Disclaimer of Liability:** The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.



Prepared according to 29CFR 1910.1200.

1	<b>Chemical Product and Company Identification</b>
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*Lubrizol Advanced Materials, Inc.*  
9911 Brecksville Road  
Cleveland, Ohio 44141-3247  
Telephone: (216) 447-5000

<b>Product Trade Name</b>	PERFORMAX(TM) 4374
<b>CAS Number</b>	Not applicable for mixtures.
<b>Synonyms</b>	None.
<b>Generic Chemical Name</b>	Mixture.
<b>Product Type</b>	Apparel
<b>Preparation/Revision Date</b>	23 April 2014
<b>Transportation Emergency Phone No.</b>	FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)
<b>MSDS No.</b>	24206822-2729524-101421-102103

2	<b>Hazards Identification</b>
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<b>Appearance</b>	White liquid.
<b>Odor</b>	Mild ammonia
<b>Principal Hazards</b>	Danger. <ul style="list-style-type: none"> <li>• Causes severe skin irritation.</li> <li>• Causes eye irritation.</li> <li>• Causes respiratory tract irritation.</li> <li>• May cause reproductive effects based on data in laboratory animals.</li> <li>• May be harmful if absorbed through skin.</li> </ul>
<b>Target Organs:</b>	Central nervous system

See Section 11 for complete health hazard information.

3	<b>Composition/Information on Ingredients</b>
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**Hazardous Ingredients**

Comp	CAS No.	Percentage (by wt.)	Carcinogen
Cyclic amide	872-50-4	4.1%	N/E
Ammonia	7664-41-7	0.9%	N/E

(N/E) - None established

4	<b>First Aid Measures</b>
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<b>Eyes</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.
<b>Skin</b>	Wash with plenty of soap and water. If skin irritation occurs, get medical attention. Take off contaminated clothing and wash before re-use.
<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor.
<b>Oral</b>	Treat symptomatically. Get medical attention.
<b>Additional Information</b>	If exposed or concerned: Get medical attention.

5	<b>Fire Fighting Measures</b>
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<b>Flash Point</b>	Not applicable.
<b>Extinguishing Media</b>	Water spray, dry chemical, foam. CO2 may be ineffective on large fires.
<b>Firefighting Procedures</b>	Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.
<b>Unusual Fire &amp; Explosion Hazards</b>	Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional

information.

6	<b>Accidental Release Measures</b>
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**Spill Procedures** Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate spill area. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

7	<b>Handling and Storage</b>
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**Pumping Temperature** Not determined.  
**Maximum Handling Temperature** Ambient  
**Handling Procedures** Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.  
**Maximum Storage Temperature** 5 - 30 °C, 41 - 86 °F  
**Storage Procedures** Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.  
**Maximum Loading Temperature** Not determined.

8	<b>Exposure Controls/Personal Protection</b>
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**Exposure Limits**

Comp	Exposure Guidelines					
	OSHA		ACGIH		Other	
	TWA	STEL	TWA	STEL	TWA	STEL
Cyclic amide	N/E	N/E	N/E	N/E	100 ppm (I)	N/E
Ammonia	50 ppm	N/E	25 ppm	35 ppm	N/E	N/E

- (s) - Skin exposure
- (p) - Proposed limit
- (c) - Ceiling exposure
- (I) - Recommended exposure limit
- (u) - Supplier recommended exposure limit
- (N/E) - None established
- Confidential - See section 1 for HMIRA exemption status

**Other Exposure Limits** None known.  
**Engineering Controls** Use local exhaust ventilation to control mists or vapors. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.  
**Gloves Procedures** Neoprene.  
**Eye Protection** Chemical goggles or faceshield.  
**Respiratory Protection** Use NIOSH/MSHA approved full face respirator with an organic vapor cartridge if the recommended exposure limit is exceeded. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator.  
**Clothing Recommendation** Gloves, coveralls, apron, boots as necessary to minimize contact. Wear either a chemical protective suit or apron when potential for contact with material exists. Use neoprene or nitrile rubber boots when necessary to avoid contaminating shoes. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction.

9	<b>Physical and Chemical Properties</b>
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**Flash Point** Not applicable.  
**Upper Flammable Limit** Not determined.  
**Lower Flammable Limit** Not determined.  
**Autoignition Point** Not determined.  
**Explosion Data** Material does not have explosive properties.  
**Vapor Pressure** ~ 18 mm Hg (20 °C)  
**pH** 9.5 - 10.5  
**Specific Gravity** 1.08 (25 °C)  
**Bulk Density** ~ 9 Lb/gal, ~ 1.08 Kg/L  
**Water Solubility** Dispersible.

**PERFORMAX(TM) 4374**

<b>Percent Solid</b>	~ 40.5% By Weight
<b>Percent Volatile</b>	58 - 61% By Weight
<b>Volatile Organic Compound</b>	Not determined.
<b>Vapor Density</b>	> 1 Air=1
<b>Evaporation Rate</b>	< 1 Butyl acetate=1
<b>Odor</b>	Mild ammonia
<b>Appearance</b>	White liquid.
<b>Viscosity</b>	< 800 Centipoise (25 °C)
<b>Odor Threshold</b>	Not determined.
<b>Boiling Point</b>	~ 100 °C, ~ 212 °F(Typical)
<b>Pour Point Temperature</b>	Not determined.
<b>Melting / Freezing Point</b>	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	<b>Stability and Reactivity</b>
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<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	Strong acids. Strong oxidizing agents. Acidic conditions will cause the polymer to precipitate out of solution.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. May also include isocyanates and small amounts of hydrogen cyanide.
<b>Conditions to Avoid</b>	Do not freeze.

11	<b>Toxicological Information</b>
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- ACUTE EXPOSURE -

<b>Eye Irritation</b>	Moderate to strong eye irritant. Based on data from similar materials. Vapors may cause irritation.
<b>Skin Irritation</b>	Severe skin irritant. Based on data from similar materials. Prolonged or repeated contact as from clothing wet with the material may cause severe irritation.
<b>Respiratory Irritation</b>	Nose, throat and lung irritant. Based on data from similar materials. Breathing vapor or mist may cause irritation of the respiratory tract. Use good occupational hygiene practices to minimize inhalation exposure. Overexposure to thermal decomposition products produced by high processing temperatures may be irritating to the respiratory tract.
<b>Dermal Toxicity</b>	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials. Components of this material may be absorbed through the skin.
<b>Inhalation Toxicity</b>	Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid inhalation of mists or vapors. Inhalation of fumes caused by overheating this material may cause "polymer fume fever", a temporary flu-like illness with fever, chills, and sometimes cough, of approximately 24 hours duration.
<b>Oral Toxicity</b>	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain.
<b>Dermal Sensitization</b>	No data available to indicate product or components may be a skin sensitizer.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

- CHRONIC EXPOSURE -

<b>Chronic Toxicity</b>	In a 4 week inhalation study with rats, cyclic amide caused effects on the lung, thymus, blood and lymph tissues. Repeated and prolonged ingestion of cyclic amide caused increased severity of spontaneous progressive nephropathy in male rats, and increased liver weight and cell hypertrophy in male and female mice.
<b>Carcinogenicity</b>	No data available to indicate any components present at greater than 0.1% may present a carcinogenic hazard.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive Toxicity</b>	Adverse effects on reproduction have been reported in rats after ingestion of cyclic amide, which also caused mild generalized changes in the parental animals. The relevance of these findings to human is unknown.
<b>Teratogenicity</b>	Fetal effects have been seen in pregnant animals exposed by ingestion, inhalation and skin contact to cyclic amide, which has occurred in the presence and absence of maternal toxicity. The relevance of these findings to humans is unknown.

- ADDITIONAL INFORMATION -

<b>Other</b>	Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization. Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons with sensitive airways (e.g., asthmatics) may react to vapors.
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12	<b>Ecological Information</b>
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- ENVIRONMENTAL TOXICITY -

# PERFORMAX(TM) 4374

<b>Freshwater Fish Toxicity</b>	The acute LC50 is 10 - 100 mg/L based on component data.
<b>Freshwater Invertebrates Toxicity</b>	Not determined.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

## - ENVIRONMENTAL FATE -

<b>Biodegradation</b>	Adequate data is not available to estimate the biodegradation potential of this material.
<b>Bioaccumulation</b>	Less than 1.0% of the components potentially bioconcentrate, based on octanol/water coefficients.
<b>Soil Mobility</b>	Not determined.

13	Disposal Considerations
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**Waste Disposal**                      This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14	Transport Information
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<b>ICAO/IATA I</b>	Not regulated.
<b>ICAO/IATA II</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IMDG EMS Fire</b>	Not applicable.
<b>IMDG EMS Spill</b>	Not applicable.
<b>IMDG MFAG</b>	Not applicable.
<b>MARPOL Annex II</b>	Not determined.
<b>USCG Compatibility</b>	Not determined.
<b>U.S. DOT Bulk</b>	UN3082 Environmentally hazardous substance, liquid, n.o.s. (Ammonia) 9 , III, RQ (Ammonia)
<b>DOT NAERG</b>	171
<b>U.S. DOT (Intermediate)</b>	UN3082 Environmentally hazardous substance, liquid, n.o.s. (Ammonia) 9 , III, RQ (Ammonia)
<b>U.S. DOT Intermediate NAERG</b>	171
<b>U.S. DOT Non-Bulk</b>	Not regulated.
<b>U.S. DOT Non-Bulk NAERG</b>	Not applicable.
<b>Canada</b>	Not regulated.
<b>Mexico</b>	Not regulated.
<b>Bulk Quantity</b>	85000 KG, 187391 lbs.
<b>Intermediate Quantity</b>	11000 KG, 24251 lbs.
<b>Non-Bulk Quantity</b>	400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	Regulatory Information
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## - Global Chemical Inventories -

<b>USA</b>	All components of this material are in compliance with Section 5 of TSCA. This material is manufactured under the Polymer Exemption rule.
<b>Other TSCA Reg.</b>	None known.
<b>EU</b>	To obtain information on the REACH compliance status of this product, please visit <a href="http://Lubrizol.com/REACH">Lubrizol.com/REACH</a> , or e-mail us at <a href="mailto:REACH_MSDS_INQUIRIES@Lubrizol.com">REACH_MSDS_INQUIRIES@Lubrizol.com</a>
<b>Japan</b>	This product requires notification in Japan.
<b>Australia</b>	May require notification before sale under Australian regulations.
<b>New Zealand</b>	May require notification before sale under New Zealand regulations.
<b>Canada</b>	This product requires notification before sale in Canada.
<b>Switzerland</b>	May require notification before sale in Switzerland.
<b>Korea</b>	May require notification before sale in Korea.
<b>Philippines</b>	May require notification before sale under Philippines Republic Act 6969.
<b>China</b>	This product requires notification in China.
<b>Taiwan</b>	May require notification before sale in Taiwan.

## - Other U.S. Federal Regulations -

**SARA Ext. Haz. Subst.**                      This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

**PERFORMAX(TM) 4374**

SARA Section 313

4.1% N-Methyl-2-pyrrolidinone, CAS no. 872-50-4

SARA 311 Classifications

Acute Hazard	Yes
Chronic Hazard	Yes
Fire Hazard	No
Reactivity Hazard	No

CERCLA Hazardous Substances

**Transit Reportable Quantities**

Component	Reportable Quantity RQ	Units	Reportable Quantity RQ	Units
Ammonia	10923	lbs.	4955	KG

**- State Regulations -**

Cal. Prop. 65

This product may contain chemical(s) known to the state of California to cause cancer and/or birth defects. For additional information please contact Lubrizol Customer Assistance: America(s): AmerLZAMCustomerAssistance@Lubrizol.com ; Europe: EMEAICustomerAssistance@Lubrizol.com ; Asia: APCustomerAssistance@Lubrizol.com

**- Product Registrations -**

U.S. Fuel Registration Not applicable.  
 Finnish Registration Number Not Registered  
 Swedish Registration Number Not Registered  
 Norwegian Registration Number Not Registered  
 Danish Registration Number Not Registered  
 Swiss Registration Number Not Registered  
 Italian Registration Number Not Registered

**- Other / International -**

Miscellaneous Regulatory Information Not determined.

16	Other Information
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US NFPA Codes

Health	Fire	Reactivity	Special
2	1	0	N/E

(N/E) - None established

HMIS Codes

Health	Fire	Reactivity
2*	1	0

Precautionary Labels

- Danger.
- Causes severe skin irritation.
  - Causes eye irritation.
  - Causes respiratory tract irritation.
  - May cause reproductive effects based on data in laboratory animals.
  - May be harmful if absorbed through skin.

Revision Indicators

This MSDS has no revisions since 23 April 2014

*Users Responsibility/Disclaimer of Liability: The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.*



Prepared according to 29CFR 1910.1200.

1	<b>Chemical Product and Company Identification</b>
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**Lubrizol Advanced Materials, Inc.**  
9911 Brecksville Road  
Cleveland, Ohio 44141-3247  
Telephone: (216) 447-5000

**Product Trade Name** PERFORMAX(TM) 4373  
**CAS Number** Not applicable for mixtures.  
**Synonyms** None.  
**Generic Chemical Name** Mixture.  
**Product Type** Apparel  
**Preparation/Revision Date** 23 April 2014  
**Transportation Emergency Phone No.** FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)  
**MSDS No.** 14206814-1322214-408421-102103

2	<b>Hazards Identification</b>
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**Appearance** White liquid.  
**Odor** Mild ammonia  
**Principal Hazards** Danger.  

- Causes severe skin irritation.
- Causes eye irritation.
- Causes respiratory tract irritation.
- May cause reproductive effects based on data in laboratory animals.
- May be harmful if absorbed through skin.

**Target Organs:** Central nervous system

See Section 11 for complete health hazard information.

3	<b>Composition/Information on Ingredients</b>
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**Hazardous Ingredients**

Comp	CAS No.	Percentage (by wt.)	Carcinogen
Cyclic amide	872-50-4	4.5%	N/E
Ammonia	7664-41-7	0.9%	N/E

(N/E) - None established

4	<b>First Aid Measures</b>
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**Eyes** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.  
**Skin** Wash with plenty of soap and water. If skin irritation occurs, get medical attention. Take off contaminated clothing and wash before re-use.  
**Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor.  
**Oral** Treat symptomatically. Get medical attention.  
**Additional Information** If exposed or concerned: Get medical attention.

5	<b>Fire Fighting Measures</b>
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**Flash Point** Not applicable.  
**Extinguishing Media** Water spray, dry chemical, foam. CO2 may be ineffective on large fires.  
**Firefighting Procedures** Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.  
**Unusual Fire & Explosion Hazards** Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional

information.

6	<b>Accidental Release Measures</b>
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**Spill Procedures** Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate spill area. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

7	<b>Handling and Storage</b>
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**Pumping Temperature** Not determined.  
**Maximum Handling Temperature** Ambient  
**Handling Procedures** Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.  
**Maximum Storage Temperature** 5 - 30 °C, 41 - 86 °F  
**Storage Procedures** Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.  
**Maximum Loading Temperature** Not determined.

8	<b>Exposure Controls/Personal Protection</b>
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**Exposure Limits**

Comp	Exposure Guidelines					
	OSHA		ACGIH		Other	
	TWA	STEL	TWA	STEL	TWA	STEL
Cyclic amide	N/E	N/E	N/E	N/E	100 ppm (l)	N/E
Ammonia	50 ppm	N/E	25 ppm	35 ppm	N/E	N/E

- (s) - Skin exposure
- (p) - Proposed limit
- (c) - Ceiling exposure
- (l) - Recommended exposure limit
- (u) - Supplier recommended exposure limit
- (N/E) - None established

Confidential - See section 1 for HMIRA exemption status

**Other Exposure Limits** Contains mineral oil. Under conditions which may generate mists, observe the OSHA PEL of 5 mg per cubic meter, ACGIH TWA of 5 mg per cubic meter.  
**Engineering Controls** Use local exhaust ventilation to control mists or vapors. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.  
**Gloves Procedures** Neoprene.  
**Eye Protection** Chemical goggles or faceshield.  
**Respiratory Protection** Use NIOSH/MSHA approved full face respirator with an organic vapor cartridge if the recommended exposure limit is exceeded. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator.  
**Clothing Recommendation** Gloves, coveralls, apron, boots as necessary to minimize contact. Wear either a chemical protective suit or apron when potential for contact with material exists. Use neoprene or nitrile rubber boots when necessary to avoid contaminating shoes. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction.

9	<b>Physical and Chemical Properties</b>
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**Flash Point** Not applicable.  
**Upper Flammable Limit** Not determined.  
**Lower Flammable Limit** Not determined.  
**Autoignition Point** Not determined.  
**Explosion Data** Material does not have explosive properties.  
**Vapor Pressure** ~ 18 mm Hg (20 °C)  
**pH** 9.5 - 10.5  
**Specific Gravity** 1.08 (25 °C)  
**Bulk Density** ~ 9 Lb/gal, ~ 1.08 Kg/L  
**Water Solubility** Dispersible.

## PERFORMAX(TM) 4373

Percent Solid	~ 40.5% By Weight
Percent Volatile	Not determined.
Volatile Organic Compound	Not determined.
Vapor Density	< 1 Air=1
Evaporation Rate	< 1 Butyl acetate=1
Odor	Mild ammonia
Appearance	White liquid.
Viscosity	< 1500 Centipoise (25 °C)
Odor Threshold	Not determined.
Boiling Point	~ 100 °C, ~ 212 °F(Typical)
Pour Point Temperature	Not determined.
Melting / Freezing Point	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	Stability and Reactivity
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<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	Strong acids. Strong oxidizing agents. Acidic conditions will cause the polymer to precipitate out of solution.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. May also include isocyanates and small amounts of hydrogen cyanide.
<b>Conditions to Avoid</b>	Do not freeze.

11	Toxicological Information
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### - ACUTE EXPOSURE -

<b>Eye Irritation</b>	Moderate to strong eye irritant. Based on data from similar materials. Vapors may cause irritation.
<b>Skin Irritation</b>	Severe skin irritant. Based on data from similar materials. Prolonged or repeated contact as from clothing wet with the material may cause severe irritation.
<b>Respiratory Irritation</b>	Nose, throat and lung irritant. Based on data from similar materials. At processing or combustion temperatures this product may emit fumes and vapors that cause irritation, possibly severe, to the respiratory tract, eyes, or skin. Overexposure to thermal decomposition products produced by high processing temperatures may be irritating to the respiratory tract.
<b>Dermal Toxicity</b>	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials. Components of this material may be absorbed through the skin.
<b>Inhalation Toxicity</b>	Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid inhalation of mists or vapors. Inhalation of fumes caused by overheating this material may cause "polymer fume fever", a temporary flu-like illness with fever, chills, and sometimes cough, of approximately 24 hours duration.
<b>Oral Toxicity</b>	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain.
<b>Dermal Sensitization</b>	No data available to indicate product or components may be a skin sensitizer.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

### - CHRONIC EXPOSURE -

<b>Chronic Toxicity</b>	In a 4 week inhalation study with rats, cyclic amide caused effects on the lung, thymus, blood and lymph tissues. Repeated and prolonged ingestion of cyclic amide caused increased severity of spontaneous progressive nephropathy in male rats, and increased liver weight and cell hypertrophy in male and female mice.
<b>Carcinogenicity</b>	This product contains mineral oils which are considered to be severely refined and not considered to be carcinogenic under IARC. All of the oils in this product have been demonstrated to contain less than 3% extractables by the IP 346 test.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive Toxicity</b>	Adverse effects on reproduction have been reported in rats after ingestion of cyclic amide, which also caused mild generalized changes in the parental animals. The relevance of these findings to human is unknown.
<b>Teratogenicity</b>	Fetal effects have been seen in pregnant animals exposed by ingestion, inhalation and skin contact to cyclic amide, which has occurred in the presence and absence of maternal toxicity. The relevance of these findings to humans is unknown.

### - ADDITIONAL INFORMATION -

<b>Other</b>	Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization. Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons with sensitive airways (e.g., asthmatics) may react to vapors.
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12	Ecological Information
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– ENVIRONMENTAL TOXICITY –

<b>Freshwater Fish Toxicity</b>	The acute LC50 is 10 - 100 mg/L based on component data.
<b>Freshwater Invertebrates Toxicity</b>	Not determined.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

– ENVIRONMENTAL FATE –

<b>Biodegradation</b>	Adequate data is not available to estimate the biodegradation potential of this material.
<b>Bioaccumulation</b>	Less than 1.0% of the components potentially bioconcentrate, based on octanol/water coefficients.
<b>Soil Mobility</b>	Not determined.

13	<b>Disposal Considerations</b>
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**Waste Disposal** This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14	<b>Transport Information</b>
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<b>ICAO/IATA I</b>	Not regulated.
<b>ICAO/IATA II</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IMDG EMS Fire</b>	Not applicable.
<b>IMDG EMS Spill</b>	Not applicable.
<b>IMDG MFAG</b>	Not applicable.
<b>MARPOL Annex II</b>	Not determined.
<b>USCG Compatibility</b>	Not determined.
<b>U.S. DOT Bulk</b>	UN3082 Environmentally hazardous substance, liquid, n.o.s. (Ammonia) 9 , III, RQ (Ammonia)
<b>DOT NAERG</b>	171
<b>U.S. DOT (Intermediate)</b>	UN3082 Environmentally hazardous substance, liquid, n.o.s. (Ammonia) 9 , III, RQ (Ammonia)
<b>U.S. DOT Intermediate NAERG</b>	171
<b>U.S. DOT Non-Bulk</b>	Not regulated.
<b>U.S. DOT Non-Bulk NAERG</b>	Not applicable.
<b>Canada</b>	Not regulated.
<b>Mexico</b>	Not regulated.
<b>Bulk Quantity</b>	85000 KG, 187391 lbs.
<b>Intermediate Quantity</b>	11000 KG, 24251 lbs.
<b>Non-Bulk Quantity</b>	400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	<b>Regulatory Information</b>
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– Global Chemical Inventories –

<b>USA</b>	All components of this material are in compliance with Section 5 of TSCA. This material is manufactured under the Polymer Exemption rule.
<b>Other TSCA Reg.</b>	None known.
<b>EU</b>	To obtain information on the REACH compliance status of this product, please visit <a href="http://Lubrizol.com/REACH">Lubrizol.com/REACH</a> , or e-mail us at <a href="mailto:REACH_MSDS_INQUIRIES@Lubrizol.com">REACH_MSDS_INQUIRIES@Lubrizol.com</a>
<b>Japan</b>	This product requires notification in Japan.
<b>Australia</b>	May require notification before sale under Australian regulations.
<b>New Zealand</b>	May require notification before sale under New Zealand regulations.
<b>Canada</b>	This product requires notification before sale in Canada.
<b>Switzerland</b>	May require notification before sale in Switzerland.
<b>Korea</b>	May require notification before sale in Korea.
<b>Philippines</b>	May require notification before sale under Philippines Republic Act 6969.
<b>China</b>	This product requires notification in China.
<b>Taiwan</b>	May require notification before sale in Taiwan.

– Other U.S. Federal Regulations –

# PERFORMAX(TM) 4373

SARA Ext. Haz. Subst.

This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

SARA Section 313

4.5% N-Methyl-2-pyrrolidinone, CAS no. 872-50-4

SARA 311 Classifications

Acute Hazard	Yes
Chronic Hazard	Yes
Fire Hazard	No
Reactivity Hazard	No

CERCLA Hazardous Substances

### Transit Reportable Quantities

Component	Reportable Quantity RQ	Units	Reportable Quantity RQ	Units
Ammonia	10682	lbs.	4845	KG

### - State Regulations -

Cal. Prop. 65

This product may contain chemical(s) known to the state of California to cause cancer and/or birth defects. For additional information please contact Lubrizol Customer Assistance: America(s): AmerLZAMCustomerAssistance@Lubrizol.com ; Europe: EMEAICustomerAssistance@Lubrizol.com ; Asia: APCustomerAssistance@Lubrizol.com

### - Product Registrations -

U.S. Fuel Registration Not applicable.  
Finnish Registration Number Not Registered  
Swedish Registration Number Not Registered  
Norwegian Registration Number Not Registered  
Danish Registration Number Not Registered  
Swiss Registration Number Not Registered  
Italian Registration Number Not Registered

### - Other / International -

Miscellaneous Regulatory Information Not determined.

16	Other Information
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US NFPA Codes

Health	Fire	Reactivity	Special
2	1	0	N/E

(N/E) - None established

HMIS Codes

Health	Fire	Reactivity
2*	1	0

Precautionary Labels

- Danger.
- Causes severe skin irritation.
  - Causes eye irritation.
  - Causes respiratory tract irritation.
  - May cause reproductive effects based on data in laboratory animals.
  - May be harmful if absorbed through skin.

Revision Indicators

This MSDS has no revisions since 23 April 2014

*Users Responsibility/Disclaimer of Liability: The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.*



Prepared according to 29CFR 1910.1200.

1	Chemical Product and Company Identification
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*The Lubrizol Corporation  
29400 Lakeland Boulevard  
Wickliffe, Ohio 44092  
Tel: (440) 943-4200*

**Product Trade Name** PERFORMAX(TM) 4385  
**CAS Number** Not applicable for mixtures.  
**Synonyms** None.  
**Generic Chemical Name** Mixture.  
**Product Type** Window Treatment  
**Preparation/Revision Date** 21 November 2014  
**Transportation Emergency Phone No.** FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)  
**MSDS No.** 24444855-1628331-016481-102103

2	Hazards Identification
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**Appearance** Black liquid.  
**Odor** Ammonia  
**Principal Hazards** Caution.  

- May cause eye irritation.
- May cause skin irritation.
- Contains components which may cause cancer based on animal data.

See Section 11 for complete health hazard information.

3	Composition/Information on Ingredients
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## Hazardous Ingredients

Comp	CAS No.	Percentage (by wt.)	Carcinogen
Amorphous silica	7631-86-9	From 5 to 9.9 percent	N/E
Carbon black	1333-86-4	From 1 to 4.9 percent	IARC Suspect Carcinogen

(N/E) - Non established

4	First Aid Measures
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**Eyes** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.  
**Skin** Wash with soap and water. Remove contaminated clothing. If skin irritation occurs, get medical attention.  
**Inhalation** Remove exposed person to fresh air if adverse effects are observed.  
**Oral** Treat symptomatically. Get medical attention.  
**Additional Information** If exposed or concerned: Get medical attention.

5	Fire Fighting Measures
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**Flash Point**  $\geq 94$  °C, 201.2 °F PMCC (Minimum)  
**Extinguishing Media** Water spray, dry chemical, foam. CO2 may be ineffective on large fires.  
**Firefighting Procedures** Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.  
**Unusual Fire & Explosion Hazards** Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional

information.

6	<b>Accidental Release Measures</b>
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**Spill Procedures** Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

7	<b>Handling and Storage</b>
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**Pumping Temperature** Not determined.  
**Maximum Handling Temperature** Ambient  
**Handling Procedures** Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.  
**Maximum Storage Temperature** 5 -- 30 °C, 41 -- 86 °F  
**Storage Procedures** Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.  
**Maximum Loading Temperature** Not determined.

8	<b>Exposure Controls/Personal Protection</b>
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**Exposure Limits**

Comp	Exposure Guidelines					
	OSHA		ACGIH		Other	
	TWA	STEL	TWA	STEL	TWA	STEL
Carbon black	3.50 mg/cu. M	N/E	3 mg/cu. M	N/E	3.50 mg/cu. M (u)	N/E

- (s) - Skin exposure
- (p) - Proposed limit
- (c) - Ceiling exposure
- (l) - Recommended exposure limit
- (u) - Supplier recommended exposure limit
- (N/E) - None established
- Confidential - See section 1 for HMIRA exemption status

**Other Exposure Limits** The OSHA PEL and ACGIH TLV for amorphous silica are 6 mg/m3 and 10 mg/m3, respectively. This product contains formaldehyde, which has an OSHA PEL TWA of 0.75 ppm and ACGIH TLV TWA of 0.3 ppm.

**Engineering Controls** Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.

**Gloves Procedures** Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.

**Eye Protection** Safety Glasses.

**Respiratory Protection** Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.

**Clothing Recommendation** Gloves, coveralls, apron, boots as necessary to minimize contact. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction.

9	<b>Physical and Chemical Properties</b>
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**Flash Point** >= 94 °C, 201.2 °F PMCC (Minimum)  
**Upper Flammable Limit** Not determined.  
**Lower Flammable Limit** Not determined.  
**Autoignition Point** Not determined.  
**Explosion Data** Material does not have explosive properties.  
**Vapor Pressure** ~ 18 mm Hg (20 °C)  
**pH** 8.5 – 9.5  
**Specific Gravity** 1.08 (25 °C)  
**Bulk Density** ~ 8.75 Lb/gal, ~ 1.05 Kg/L

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<b>Water Solubility</b>	Dispersible.
<b>Percent Solid</b>	44% By Weight
<b>Percent Volatile</b>	54 – 58% By Weight
<b>Volatile Organic Compound</b>	Not determined.
<b>Vapor Density</b>	< 1 Air=1
<b>Evaporation Rate</b>	< 1 Butyl acetate=1
<b>Odor</b>	Ammonia
<b>Appearance</b>	Black liquid.
<b>Viscosity</b>	< 16000 Centipoise (25 °C)
<b>Odor Threshold</b>	Not determined.
<b>Boiling Point</b>	~ 100 °C, ~ 212 °F(Typical)
<b>Pour Point Temperature</b>	Not determined.
<b>Melting / Freezing Point</b>	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	Stability and Reactivity
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<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	Acids. Bases. Strong oxidizing agents.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. Nitrogen oxides. Acrylate monomers
<b>Conditions to Avoid</b>	Do not freeze.

11	Toxicological Information
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– ACUTE EXPOSURE –

<b>Eye Irritation</b>	May cause eye irritation. Does not meet Canadian D2B or EU R36 criteria. Based on data from components or similar materials. Vapors may cause irritation.
<b>Skin Irritation</b>	May cause mild skin irritation. Does not meet Canadian D2B or EU R38 criteria. Based on data from components or similar materials. Repeated or prolonged skin contact may cause irritation.
<b>Respiratory Irritation</b>	If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract. Based on data from components or similar materials.
<b>Dermal Toxicity</b>	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.
<b>Inhalation Toxicity</b>	Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid the inhalation of dust, mists, or vapors.
<b>Oral Toxicity</b>	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Ingestion of this material may cause gastrointestinal irritation.
<b>Dermal Sensitization</b>	No data available to indicate product or components may be a skin sensitizer.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

– CHRONIC EXPOSURE –

<b>Chronic Toxicity</b>	No data available to indicate product or components present at greater than 1% are chronic health hazards.
<b>Carcinogenicity</b>	Based on rat inhalation studies IARC concluded that there is sufficient evidence of carbon black's carcinogenicity in animals but inadequate evidence of carcinogenicity in humans (Group 2B). Recent studies suggest that tumors induced by biologically inert particles such as carbon black, under conditions of overload, may be rat-specific effects as they are not seen in mice or hamsters tested under similar conditions or in studies of carbon black workers.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive Toxicity</b>	No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
<b>Teratogenicity</b>	No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

– ADDITIONAL INFORMATION –

<b>Other</b>	Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons with sensitive airways (e.g., asthmatics) may react to vapors.
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12	Ecological Information
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## – ENVIRONMENTAL TOXICITY –

<b>Freshwater Fish Toxicity</b>	The acute LC50 is 10 - 100 mg/L based on component data.
<b>Freshwater Invertebrates Toxicity</b>	Chronic effects expected at 10 - 100 mg/L based on component data.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

## – ENVIRONMENTAL FATE –

<b>Biodegradation</b>	Adequate data is not available to estimate the biodegradation potential of this material.
<b>Bioaccumulation</b>	Less than 1.0% of the components potentially bioconcentrate, based on octanol/water coefficients.
<b>Soil Mobility</b>	Not determined.

13	<b>Disposal Considerations</b>
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**Waste Disposal** This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14	<b>Transport Information</b>
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<b>ICAO/IATA I</b>	Not regulated.
<b>ICAO/IATA II</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IMDG EMS Fire</b>	Not applicable.
<b>IMDG EMS Spill</b>	Not applicable.
<b>IMDG MFAG</b>	Not applicable.
<b>MARPOL Annex II</b>	Not determined.
<b>USCG Compatibility</b>	Not determined.
<b>U.S. DOT Bulk</b>	Not regulated.
<b>DOT NAERG</b>	Not applicable.
<b>U.S. DOT (Intermediate)</b>	Not regulated.
<b>U.S. DOT Intermediate NAERG</b>	Not applicable.
<b>U.S. DOT Non-Bulk</b>	Not regulated.
<b>U.S. DOT Non-Bulk NAERG</b>	Not applicable.
<b>Canada</b>	Not regulated.
<b>Mexico</b>	Not regulated.
<b>Bulk Quantity</b>	85000 KG, 187391 lbs.
<b>Intermediate Quantity</b>	11000 KG, 24251 lbs.
<b>Non-Bulk Quantity</b>	400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	<b>Regulatory Information</b>
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## – Global Chemical Inventories –

<b>USA</b>	All components of this material are on the US TSCA Inventory or are exempt.
<b>Other TSCA Reg.</b>	None known.
<b>EU</b>	To obtain information on the REACH compliance status of this product, please visit <a href="http://Lubrizol.com/REACH">Lubrizol.com/REACH</a> , or e-mail us at <a href="mailto:REACH_MSDS_INQUIRIES@Lubrizol.com">REACH_MSDS_INQUIRIES@Lubrizol.com</a>
<b>Japan</b>	This product requires notification in Japan.
<b>Australia</b>	May require notification before sale under Australian regulations.
<b>New Zealand</b>	This product requires notification before sale in New Zealand.
<b>Canada</b>	This product requires notification before sale in Canada.
<b>Switzerland</b>	May require notification before sale in Switzerland.
<b>Korea</b>	This product requires notification before sale in Korea.
<b>Philippines</b>	May require notification before sale under Philippines Republic Act 6969.
<b>China</b>	This product requires notification in China.
<b>Taiwan</b>	May require notification before sale in Taiwan.

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**- Other U.S. Federal Regulations -**

**SARA Ext. Haz. Subst.** This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

**SARA Section 313** This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.

**SARA 311 Classifications**

Acute Hazard	No
Chronic Hazard	Yes
Fire Hazard	No
Reactivity Hazard	No

**CERCLA Hazardous Substances** None known.

**- State Regulations -**

**Cal. Prop. 65** This product may contain chemical(s) known to the state of California to cause cancer and/or birth defects. For additional information please contact Lubrizol Customer Assistance: America(s): AmerLZAMCustomerAssistance@Lubrizol.com ; Europe: EMEAICustomerAssistance@Lubrizol.com ; Asia: APCustomerAssistance@Lubrizol.com

**- Product Registrations -**

**U.S. Fuel Registration** Not applicable.  
**Finnish Registration Number** Not Registered  
**Swedish Registration Number** Not Registered  
**Norwegian Registration Number** Not Registered  
**Danish Registration Number** Not Registered  
**Swiss Registration Number** Not Registered  
**Italian Registration Number** Not Registered

**- Other / International -**

**Miscellaneous Regulatory Information** Not determined.

16	Other Information
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**US NFPA Codes**

Health	Env.	Reactivity	Special
1	1	0	N/E

(N/E) - None established

**HMIS Codes**

Health	Env.	Reactivity
1	1	0

**Precautionary Labels** Caution.  

- May cause eye irritation.
- May cause skin irritation.
- Contains components which may cause cancer based on animal data.

**Revision Indicators** This MSDS has no revisions since 21 November 2014

*As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.*



Prepared according to 29CFR 1910.1200.

1	Chemical Product and Company Identification
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*The Lubrizol Corporation  
29400 Lakeland Boulevard  
Wickliffe, Ohio 44092  
Tel: (440) 943-4200*

Product Trade Name	PERMAX(TM) 202
CAS Number	Confidential
Synonyms	None.
Generic Chemical Name	Polyurethane
Product Type	Adhesives
Preparation/Revision Date	26 May 2012
Transportation Emergency Phone No.	FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)
MSDS No.	11671196-2423215-4072221-102103

2	Hazards Identification
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Appearance	Off-white, Opaque liquid.
Odor	Odorless
Principal Hazards	<ul style="list-style-type: none"> <li>• This material has no known health hazards.</li> </ul>

See Section 11 for complete health hazard information.

3	Composition/Information on Ingredients
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Hazardous Ingredients	This material has no known hazards under applicable laws.
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4	First Aid Measures
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Eyes	Flush with water at least 30 minutes. Get medical attention if eye irritation develops or persists.
Skin	Wash with soap and water. Get medical attention if irritation develops.
Inhalation	Remove exposed person to fresh air if adverse effects are observed.
Oral	Treat symptomatically. Get medical attention.
Additional Information	Note to physician: Treat symptomatically.

5	Fire Fighting Measures
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Flash Point	Not applicable.
Extinguishing Media	Water spray, dry chemical, foam. CO2 may be ineffective on large fires.
Firefighting Procedures	Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.
Unusual Fire & Explosion Hazards	Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional information.

6	Accidental Release Measures
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Spill Procedures	Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.
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7	Handling and Storage
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**PERMAX(TM) 202**

<b>Pumping Temperature</b>	Not determined.
<b>Maximum Handling Temperature</b>	Not determined.
<b>Handling Procedures</b>	Keep containers closed when not in use. Avoid eye contact. Avoid repeated or prolonged skin contact. Avoid drinking, tasting, swallowing or ingesting this product. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.
<b>Maximum Storage Temperature</b>	Not determined.
<b>Storage Procedures</b>	Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.
<b>Maximum Loading Temperature</b>	Not determined.

8	<b>Exposure Controls/Personal Protection</b>
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<b>Exposure Limits</b>	None established
<b>Other Exposure Limits</b>	None known.
<b>Engineering Controls</b>	Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.
<b>Gloves Procedures</b>	Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.
<b>Eye Protection</b>	Safety Glasses.
<b>Respiratory Protection</b>	Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.
<b>Clothing Recommendation</b>	No special clothing requirement.

9	<b>Physical and Chemical Properties</b>
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<b>Flash Point</b>	Not applicable.
<b>Upper Flammable Limit</b>	Not determined.
<b>Lower Flammable Limit</b>	Not determined.
<b>Autoignition Point</b>	Not determined.
<b>Explosion Data</b>	Material does not have explosive properties.
<b>Vapor Pressure</b>	18 mm Hg (20 °C)
<b>pH</b>	4.5 - 6.5
<b>Specific Gravity</b>	1.03 (20 °C)
<b>Bulk Density</b>	Not determined.
<b>Water Solubility</b>	Dispersible.
<b>Percent Solid</b>	~ 42%
<b>Percent Volatile</b>	56 - 60%
<b>Volatile Organic Compound</b>	Not determined.
<b>Vapor Density</b>	< 1 Air=1
<b>Evaporation Rate</b>	< 1 Butyl acetate=1
<b>Odor</b>	Odorless
<b>Appearance</b>	Off-white, Opaque liquid.
<b>Viscosity</b>	< 1500 Centipoise (25 °C)
<b>Odor Threshold</b>	Not determined.
<b>Boiling Point</b>	~ 100 °C, ~ 212 °F(Typical)
<b>Four Point Temperature</b>	Not determined.
<b>Melting / Freezing Point</b>	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	<b>Stability and Reactivity</b>
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<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	Strong oxidizing agents. Acidic conditions will cause the polymer to precipitate out of solution.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. May also include isocyanates and small amounts of hydrogen cyanide.
<b>Conditions to Avoid</b>	Do not freeze.

**- ACUTE EXPOSURE -**

<b>Eye Irritation</b>	Not expected to cause eye irritation. Based on data from components or similar materials. At processing or combustion temperatures this product may emit fumes and vapors that cause irritation, possibly severe, to the eyes.
<b>Skin Irritation</b>	Not expected to be a primary skin irritant. Based on data from components or similar materials.
<b>Respiratory Irritation</b>	At processing or combustion temperatures this product may emit fumes and vapors that cause irritation, possibly severe, to the respiratory tract, eyes, or skin.
<b>Dermal Toxicity</b>	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.
<b>Inhalation Toxicity</b>	Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid inhalation of mists or vapors.
<b>Oral Toxicity</b>	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Ingestion of this material may cause gastrointestinal irritation.
<b>Dermal Sensitization</b>	No data available to indicate product or components may be a skin sensitizer.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

**- CHRONIC EXPOSURE -**

<b>Chronic Toxicity</b>	No data available to indicate product or components present at greater than 1% are chronic health hazards.
<b>Carcinogenicity</b>	No data available to indicate any components present at greater than 0.1% may present a carcinogenic hazard.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive Toxicity</b>	No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
<b>Teratogenicity</b>	No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

**- ADDITIONAL INFORMATION -**

<b>Other</b>	Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization. Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons with sensitive airways (e.g., asthmatics) may react to vapors.
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**- ENVIRONMENTAL TOXICITY -**

<b>Freshwater Fish Toxicity</b>	Not determined.
<b>Freshwater Invertebrates Toxicity</b>	Not determined.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

**- ENVIRONMENTAL FATE -**

<b>Biodegradation</b>	Adequate data is not available to estimate the biodegradation potential of this material.
<b>Bioaccumulation</b>	25% or greater of the components display no potential to bioconcentrate.
<b>Soil Mobility</b>	Not determined.

<b>Waste Disposal</b>	This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.
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<b>ICAO/IATA I</b>	Not regulated.
<b>ICAO/IATA II</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IMDG EMS Fire</b>	Not applicable.
<b>IMDG EMS Spill</b>	Not applicable.
<b>IMDG MFAG</b>	Not applicable.
<b>MARPOL Annex II</b>	Not determined.
<b>USCG Compatibility</b>	Not determined.
<b>U.S. DOT Bulk</b>	Not regulated.
<b>DOT NAERG</b>	Not applicable.
<b>U.S. DOT (Intermediate)</b>	Not regulated.

**PERMAX(TM) 202**

U.S. DOT Intermediate NAERG Not applicable.  
 U.S. DOT Non-Bulk Not regulated.  
 U.S. DOT Non-Bulk NAERG Not applicable.  
 Canada Not regulated.  
 Mexico Not regulated.  
 Bulk Quantity 85000 KG, 187391 lbs.  
 Intermediate Quantity 11000 KG, 24251 lbs.  
 Non-Bulk Quantity 400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	Regulatory Information
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**-- Global Chemical Inventories --**

**USA** This product is on the TSCA inventory. When used as a biocide it is regulated under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). This product is not FIFRA registered.

**Other TSCA Reg.** None known.

**EU** To obtain information on the REACH compliance status of this product, please visit [Lubrizol.com/REACH](http://Lubrizol.com/REACH), or e-mail us at [REACH\\_MSDS\\_INQUIRIES@Lubrizol.com](mailto:REACH_MSDS_INQUIRIES@Lubrizol.com)

**Japan** All components are in compliance with the Chemical Substances Control Law of Japan.

**Australia** This product requires notification before sale in Australia.

**New Zealand** This product requires notification before sale in New Zealand.

**Canada** All components are in compliance with the Canadian Environmental Protection Act and are present on the Domestic Substances List.

**Switzerland** All components are in compliance with the Environmentally Hazardous Substances Ordinance in Switzerland.

**Korea** This product requires notification before sale in Korea.

**Philippines** All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).

**China** This product requires notification in China.

**Taiwan** May require notification before sale in Taiwan.

**-- Other U.S. Federal Regulations --**

**SARA Ext. Haz. Subst.** This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

**SARA Section 313** This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.

**SARA 311 Classifications**

Acute Hazard	No
Chronic Hazard	No
Fire Hazard	No
Reactivity Hazard	No

**CERCLA Hazardous Substances** None known.

**-- State Regulations --**

**Cal. Prop. 65** This product does not intentionally contain any chemicals known by the State of California to cause cancer and/or birth defects. Moreover, we do not routinely analyze its products for impurities which may be such chemicals.

**-- Product Registrations --**

**U.S. Fuel Registration** Not applicable.  
**Finnish Registration Number** Not Registered  
**Swedish Registration Number** Not Registered  
**Norwegian Registration Number** Not Registered  
**Danish Registration Number** Not Registered  
**Swiss Registration Number** Not Registered  
**Italian Registration Number** Not Registered

**-- Other / International --**

**Miscellaneous Regulatory Information** Not determined.

16	Other Information
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**US NFPA Codes**

Health	Env.	Reactivity	Special
2	1	0	N/E

(N/E) - None established

# PERMAX(TM) 202

## HMS Codes

1	1	0
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## Precautionary Labels

- This material has no known health hazards.

## Revision Indicators

Section: 1 Product type.	Changed: 26 May 2012
Section: 11 Dermal toxicity.	Changed: 26 May 2012
Section: 15 New Zealand	Changed: 26 May 2012

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*As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.*



Prepared according to 29CFR 1910.1200.

1	Chemical Product and Company Identification
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*The Lubrizol Corporation  
29400 Lakeland Boulevard  
Wickliffe, Ohio 44092  
Tel: (440) 943-4200*

Product Trade Name	PERMAX(TM) 232
CAS Number	Confidential.
Synonyms	None.
Generic Chemical Name	Polyurethane
Product Type	Construction - Other
Preparation/Revision Date	26 May 2012
Transportation Emergency Phone No.	FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)
MSDS No.	11671109-242331 5-005421 1-102103

2	Hazards Identification
---	------------------------

Appearance	Off white liquid.
Odor	Odorless
Principal Hazards	<ul style="list-style-type: none"> <li>• This material has no known health hazards.</li> </ul>

See Section 11 for complete health hazard information.

3	Composition/Information on Ingredients
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Hazardous Ingredients	This material has no known hazards under applicable laws.
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4	First Aid Measures
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Eyes	Flush with water at least 30 minutes. Get medical attention if eye irritation develops or persists.
Skin	Wash with soap and water. Get medical attention if irritation develops.
Inhalation	Remove exposed person to fresh air if adverse effects are observed.
Oral	Treat symptomatically. Get medical attention.
Additional Information	Note to physician: Treat symptomatically.

5	Fire Fighting Measures
---	------------------------

Flash Point	Not applicable.
Extinguishing Media	CO2, dry chemical, foam, water spray, water fog.
Firefighting Procedures	Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.
Unusual Fire & Explosion Hazards	Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional information.

6	Accidental Release Measures
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Spill Procedures	Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.
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7	Handling and Storage
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**PERMAX(TM) 232**

<b>Pumping Temperature</b>	Not determined.
<b>Maximum Handling Temperature</b>	Not determined.
<b>Handling Procedures</b>	Keep containers closed when not in use. Avoid eye contact. Avoid repeated or prolonged skin contact. Avoid drinking, tasting, swallowing or ingesting this product. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.
<b>Maximum Storage Temperature</b>	Not determined.
<b>Storage Procedures</b>	Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers.
<b>Maximum Loading Temperature</b>	Not determined.

8	Exposure Controls/Personal Protection
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<b>Exposure Limits</b>	None established
<b>Other Exposure Limits</b>	None known.
<b>Engineering Controls</b>	Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.
<b>Gloves Procedures</b>	Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.
<b>Eye Protection</b>	Safety Glasses.
<b>Respiratory Protection</b>	Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.
<b>Clothing Recommendation</b>	No special clothing requirement.

9	Physical and Chemical Properties
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<b>Flash Point</b>	Not applicable.
<b>Upper Flammable Limit</b>	Not determined.
<b>Lower Flammable Limit</b>	Not determined.
<b>Autoignition Point</b>	Not determined.
<b>Explosion Data</b>	Material does not have explosive properties.
<b>Vapor Pressure</b>	18 mm Hg (20 °C)
<b>pH</b>	4.5 - 6.5
<b>Specific Gravity</b>	1.03 (20 °C)
<b>Bulk Density</b>	Not determined.
<b>Water Solubility</b>	Dispersible.
<b>Percent Solid</b>	35%
<b>Percent Volatile</b>	63 - 67%
<b>Volatile Organic Compound</b>	Not determined.
<b>Vapor Density</b>	Not determined.
<b>Evaporation Rate</b>	< 1 Butyl acetate=1
<b>Odor</b>	Odorless
<b>Appearance</b>	Off white liquid.
<b>Viscosity</b>	< 1500 Centipoise (25 °C)
<b>Odor Threshold</b>	Not determined.
<b>Boiling Point</b>	> 100 °C, > 212 °F(Typical)
<b>Pour Point Temperature</b>	Not determined.
<b>Melting / Freezing Point</b>	- 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	Stability and Reactivity
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<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	None known, avoid contact with reactive chemicals.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. May also include isocyanates and small amounts of hydrogen cyanide.
<b>Conditions to Avoid</b>	Not determined.

11	Toxicological Information
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**PERMAX(TM) 232**

**- ACUTE EXPOSURE -**

<b>Eye Irritation</b>	Not expected to cause eye irritation. Based on data from components or similar materials. At processing or combustion temperatures this product may emit fumes and vapors that cause irritation, possibly severe, to the eyes.
<b>Skin Irritation</b>	Not expected to be a primary skin irritant. Based on data from components or similar materials.
<b>Respiratory Irritation</b>	At processing or combustion temperatures this product may emit fumes and vapors that cause irritation, possibly severe, to the respiratory tract, eyes, or skin.
<b>Dermal Toxicity</b>	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.
<b>Inhalation Toxicity</b>	Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid inhalation of mists or vapors.
<b>Oral Toxicity</b>	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Ingestion of this material may cause gastrointestinal irritation.
<b>Dermal Sensitization</b>	No data available to indicate product or components may be a skin sensitizer.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

**- CHRONIC EXPOSURE -**

<b>Chronic Toxicity</b>	No data available to indicate product or components present at greater than 1% are chronic health hazards.
<b>Carcinogenicity</b>	No data available to indicate any components present at greater than 0.1% may present a carcinogenic hazard.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive Toxicity</b>	No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
<b>Teratogenicity</b>	No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

**- ADDITIONAL INFORMATION -**

<b>Other</b>	Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization. Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons with sensitive airways (e.g., asthmatics) may react to vapors.
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12	Ecological Information
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**- ENVIRONMENTAL TOXICITY -**

<b>Freshwater Fish Toxicity</b>	Not determined.
<b>Freshwater Invertebrates Toxicity</b>	Not determined.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

**- ENVIRONMENTAL FATE -**

<b>Biodegradation</b>	Adequate data is not available to estimate the biodegradation potential of this material.
<b>Bioaccumulation</b>	25% or greater of the components display no potential to bioconcentrate.
<b>Soil Mobility</b>	Not determined.

13	Disposal Considerations
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<b>Waste Disposal</b>	This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.
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14	Transport Information
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<b>ICAO/IATA I</b>	Not regulated.
<b>ICAO/IATA II</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IMDG EMS Fire</b>	Not applicable.
<b>IMDG EMS Spill</b>	Not applicable.
<b>IMDG MFAG</b>	Not applicable.
<b>MARPOL Annex II</b>	Not determined.
<b>USCG Compatibility</b>	Not determined.
<b>U.S. DOT Bulk</b>	Not regulated.
<b>DOT NAERG</b>	Not applicable.
<b>U.S. DOT (Intermediate)</b>	Not regulated.
<b>U.S. DOT Intermediate NAERG</b>	Not applicable.
<b>U.S. DOT Non-Bulk</b>	Not regulated.

**PERMAX(TM) 232**

U.S. DOT Non-Bulk NAERG

Canada

Mexico

Bulk Quantity

Intermediate Quantity

Non-Bulk Quantity

Not applicable.

Not regulated.

Not regulated.

85000 KG, 187391 lbs.

11000 KG, 24251 lbs.

400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	Regulatory Information
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- Global Chemical Inventories -

**USA** This product is on the TSCA inventory. When used as a biocide it is regulated under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). This product is not FIFRA registered.

**Other TSCA Reg.** None known.

**EU** To obtain information on the REACH compliance status of this product, please visit [Lubrizol.com/REACH](http://Lubrizol.com/REACH), or e-mail us at [REACH\\_MSDS\\_INQUIRIES@Lubrizol.com](mailto:REACH_MSDS_INQUIRIES@Lubrizol.com)

**Japan** All components are in compliance with the Chemical Substances Control Law of Japan.

**Australia** This product requires notification before sale in Australia.

**New Zealand** This product requires notification before sale in New Zealand.

**Canada** All components are in compliance with the Canadian Environmental Protection Act and are present on the Domestic Substances List.

**Switzerland** All components are in compliance with the Environmentally Hazardous Substances Ordinance in Switzerland.

**Korea** This product requires notification before sale in Korea.

**Philippines** All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).

**China** This product requires notification in China.

**Taiwan** May require notification before sale in Taiwan.

- Other U.S. Federal Regulations -

**SARA Ext. Haz. Subst.** This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

**SARA Section 313** This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.

**SARA 311 Classifications**

Acute Hazard	No
Chronic Hazard	No
Fire Hazard	No
Reactivity Hazard	No

**CERCLA Hazardous Substances** None known.

- State Regulations -

**Cal. Prop. 65** This product does not intentionally contain any chemicals known by the State of California to cause cancer and/or birth defects. Moreover, we do not routinely analyze its products for impurities which may be such chemicals.

- Product Registrations -

**U.S. Fuel Registration** Not applicable.

**Finnish Registration Number** Not Registered

**Swedish Registration Number** Not Registered

**Norwegian Registration Number** Not Registered

**Danish Registration Number** Not Registered

**Swiss Registration Number** Not Registered

**Italian Registration Number** Not Registered

- Other / International -

**Miscellaneous Regulatory Information** Not determined.

16	Other Information
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**US NFPA Codes**

	2	1	0
	N/E		

(N/E) - None established

**HMIS Codes**

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# PERMAX(TM) 232



## Precautionary Labels

- This material has no known health hazards.

## Revision Indicators

Section: 1 Product type.

Changed: 26 May 2012

Section: 15 New Zealand

Changed: 26 May 2012

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*As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.*



Prepared according to 29CFR 1910.1200.

1	Chemical Product and Company Identification
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*Lubrizol Advanced Materials, Inc.*  
9911 Brecksville Road  
Cleveland, Ohio 44141-3247  
Telephone: (216) 447-5000

**Product Trade Name** PF4186B  
**CAS Number** Not applicable for mixtures.  
**Synonyms** None.  
**Generic Chemical Name** Mixture.  
**Product Type** Leather & Artificial Leather  
**Preparation/Revision Date** 13 February 2014  
**Transportation Emergency Phone No.** FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)  
**MSDS No.** 24104147-5111622-3089421-102103

2	Hazards Identification
---	------------------------

**Appearance** Gray liquid.  
**Odor** Mild ammonia  
**Principal Hazards** Caution.  

- May cause eye irritation.
- May cause skin irritation.
- Contains components which may cause cancer based on animal data.

See Section 11 for complete health hazard information.

3	Composition/Information on Ingredients
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## Hazardous Ingredients

Comp	CAS No.	Percentage (by wt.)	Carcinogen
2-Pyrrolidinone, 1-ethyl-	2687-91-4	From 1 to 4.9 percent	N/E
Carbon black	1333-86-4	From 1 to 4.9 percent	IARC Suspect Carcinogen

(N/E) - None established

4	First Aid Measures
---	--------------------

**Eyes** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.  
**Skin** Wash with soap and water. Remove contaminated clothing. If skin irritation occurs, get medical attention.  
**Inhalation** Remove exposed person to fresh air if adverse effects are observed.  
**Oral** Treat symptomatically. Get medical attention.  
**Additional Information** If exposed or concerned: Get medical attention.

5	Fire Fighting Measures
---	------------------------

**Flash Point**  $\geq 94$  °C, 201.2 °F PMCC (Minimum)  
**Extinguishing Media** Water spray, dry chemical, foam. CO<sub>2</sub> may be ineffective on large fires.  
**Firefighting Procedures** Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.  
**Unusual Fire & Explosion Hazards** Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional

information.

6	Accidental Release Measures
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**Spill Procedures** Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

7	Handling and Storage
---	----------------------

**Pumping Temperature** Not determined.  
**Maximum Handling Temperature** Ambient  
**Handling Procedures** Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.  
**Maximum Storage Temperature** 5 – 30 °C, 41 – 86 °F  
**Storage Procedures** Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.  
**Maximum Loading Temperature** Not determined.

8	Exposure Controls/Personal Protection
---	---------------------------------------

**Exposure Limits**

Comp	Exposure Guidelines					
	OSHA		ACGIH		Other	
	TWA	STEL	TWA	STEL	TWA	STEL
Carbon black	3.50 mg/cu. M	N/E	3 mg/cu. M	N/E	3.50 mg/cu. M (u)	N/E

- (s) - Skin exposure
- (p) - Proposed limit
- (c) - Ceiling exposure
- (l) - Recommended exposure limit
- (u) - Supplier recommended exposure limit
- (N/E) - None established
- Confidential - See section 1 for HMIRA exemption status

**Other Exposure Limits** This product contains formaldehyde, which has an OSHA PEL TWA of 0.75 ppm and ACGIH TLV TWA of 0.3 ppm.  
**Engineering Controls** Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.  
**Gloves Procedures** Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.  
**Eye Protection** Safety Glasses.  
**Respiratory Protection** Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.  
**Clothing Recommendation** Gloves, coveralls, apron, boots as necessary to minimize contact. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction.

9	Physical and Chemical Properties
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**Flash Point** >= 94 °C, 201.2 °F PMCC (Minimum)  
**Upper Flammable Limit** Not determined.  
**Lower Flammable Limit** Not determined.  
**Autoignition Point** Not determined.  
**Explosion Data** Material does not have explosive properties.  
**Vapor Pressure** ~ 18 mm Hg (20 °C)  
**pH** 9 – 9.5  
**Specific Gravity** 1.08 (20 °C)  
**Bulk Density** ~ 9 Lb/gal, ~ 1.08 Kg/L  
**Water Solubility** Dispersible.

PF4186B

Percent Solid	~44% By Weight
Percent Volatile	53.5 – 58% By Weight
Volatile Organic Compound	Not determined.
Vapor Density	< 1 Air=1
Evaporation Rate	< 1 Butyl acetate=1
Odor	Mild ammonia
Appearance	Gray liquid.
Viscosity	< 7000 Centipoise (25 °C)
Odor Threshold	Not determined.
Boiling Point	~ 100 °C, ~ 212 °F(Typical)
Pour Point Temperature	Not determined.
Melting / Freezing Point	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	Stability and Reactivity
----	--------------------------

<b>Stability</b>	Material is normally stable at moderately elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not determined.
<b>Incompatibility</b>	Strong acids. Strong oxidizing agents. Acidic conditions will cause the polymer to precipitate out of solution.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. May also include isocyanates and small amounts of hydrogen cyanide.
<b>Conditions to Avoid</b>	Do not freeze.

11	Toxicological Information
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– ACUTE EXPOSURE –

<b>Eye Irritation</b>	Weak to moderate eye irritant. Does not meet EU R36 criteria. Based on data from components or similar materials. At processing or combustion temperatures this product may emit fumes and vapors that cause irritation, possibly severe, to the eyes.
<b>Skin Irritation</b>	May cause mild skin irritation. Does not meet Canadian D2B or EU R38 criteria. Based on data from components or similar materials.
<b>Respiratory Irritation</b>	If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract. Based on data from components or similar materials. At processing or combustion temperatures this product may emit fumes and vapors that cause irritation, possibly severe, to the respiratory tract, eyes, or skin.
<b>Dermal Toxicity</b>	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.
<b>Inhalation Toxicity</b>	Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid the inhalation of dust, mists, or vapors.
<b>Oral Toxicity</b>	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Ingestion of this material may cause gastrointestinal irritation.
<b>Dermal Sensitization</b>	No data available to indicate product or components may be a skin sensitizer.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

– CHRONIC EXPOSURE –

<b>Chronic Toxicity</b>	No data available to indicate product or components present at greater than 1% are chronic health hazards.
<b>Carcinogenicity</b>	Based on rat inhalation studies IARC concluded that there is sufficient evidence of carbon black's carcinogenicity in animals but inadequate evidence of carcinogenicity in humans (Group 2B). Recent studies suggest that tumors induced by biologically inert particles such as carbon black, under conditions of overload, may be rat-specific effects as they are not seen in mice or hamsters tested under similar conditions or in studies of carbon black workers.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive Toxicity</b>	No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
<b>Teratogenicity</b>	No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

– ADDITIONAL INFORMATION –

<b>Other</b>	Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization. Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons with sensitive airways (e.g., asthmatics) may react to vapors.
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12	Ecological Information
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– ENVIRONMENTAL TOXICITY –

<b>Freshwater Fish Toxicity</b>	The acute LC50 is 10 - 100 mg/L based on component data.
<b>Freshwater Invertebrates Toxicity</b>	Not determined.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

– ENVIRONMENTAL FATE –

<b>Biodegradation</b>	Adequate data is not available to estimate the biodegradation potential of this material.
<b>Bioaccumulation</b>	Less than 1.0% of the components potentially bioconcentrate, based on octanol/water coefficients.
<b>Soil Mobility</b>	Not determined.

13	Disposal Considerations
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**Waste Disposal** This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14	Transport Information
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<b>ICAO/IATA I</b>	Not regulated.
<b>ICAO/IATA II</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IMDG EMS Fire</b>	Not applicable.
<b>IMDG EMS Spill</b>	Not applicable.
<b>IMDG MFAG</b>	Not applicable.
<b>MARPOL Annex II</b>	Not determined.
<b>USCG Compatibility</b>	Not determined.
<b>U.S. DOT Bulk</b>	Not regulated.
<b>DOT NAERG</b>	Not applicable.
<b>U.S. DOT (Intermediate)</b>	Not regulated.
<b>U.S. DOT Intermediate NAERG</b>	Not applicable.
<b>U.S. DOT Non-Bulk</b>	Not regulated.
<b>U.S. DOT Non-Bulk NAERG</b>	Not applicable.
<b>Canada</b>	Not regulated.
<b>Mexico</b>	Not regulated.
<b>Bulk Quantity</b>	85000 KG, 187391 lbs.
<b>Intermediate Quantity</b>	11000 KG, 24251 lbs.
<b>Non-Bulk Quantity</b>	400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	Regulatory Information
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– Global Chemical Inventories –

<b>USA</b>	All components of this material are in compliance with Section 5 of TSCA. This material is manufactured under the Polymer Exemption rule.
<b>Other TSCA Reg.</b>	None known.
<b>EU</b>	To obtain information on the REACH compliance status of this product, please visit <a href="http://Lubrizon.com/REACH">Lubrizon.com/REACH</a> , or e-mail us at <a href="mailto:REACH_MSDS_INQUIRIES@Lubrizon.com">REACH_MSDS_INQUIRIES@Lubrizon.com</a>
<b>Japan</b>	This product requires notification in Japan.
<b>Australia</b>	This product requires notification before sale in Australia.
<b>New Zealand</b>	This product requires notification before sale in New Zealand.
<b>Canada</b>	This product requires notification before sale in Canada.
<b>Switzerland</b>	This product requires notification before sale in Switzerland.
<b>Korea</b>	This product requires notification before sale in Korea.
<b>Philippines</b>	This product requires notification before sale in the Philippines.

PF4186B

China

This product requires notification in China.

Taiwan

May require notification before sale in Taiwan.

**-- Other U.S. Federal Regulations --**

SARA Ext. Haz. Subst.

This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

SARA Section 313

This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.

SARA 311 Classifications

Acute Hazard	Yes
Chronic Hazard	Yes
Fire Hazard	No
Reactivity Hazard	No

CERCLA Hazardous Substances

None known.

**-- State Regulations --**

Cal. Prop. 65

This product may contain chemical(s) known to the state of California to cause cancer and/or birth defects. For additional information please contact Lubrizol Customer Assistance: America(s): AmerLZAMCustomerAssistance@Lubrizol.com ; Europe: EMEAICustomerAssistance@Lubrizol.com ; Asia: APCustomerAssistance@Lubrizol.com

**-- Product Registrations --**

U.S. Fuel Registration

Not applicable.

Finnish Registration Number

Not Registered

Swedish Registration Number

Not Registered

Norwegian Registration Number

Not Registered

Danish Registration Number

Not Registered

Swiss Registration Number

Not Registered

Italian Registration Number

Not Registered

**-- Other / International --**

Miscellaneous Regulatory Information

Not determined.

16	Other Information
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US NFPA Codes

Health	Flam.	Reactivity	Special
2	1	0	N/E

(N/E) - None established

HMS Codes

Health	Flam.	Reactivity
1	1	0

Precautionary Labels

Caution.

- May cause eye irritation.
- May cause skin irritation.
- Contains components which may cause cancer based on animal data.

Revision Indicators

This MSDS has no revisions since 13 February 2014

*As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.*



Prepared according to 29CFR 1910.1200.

1	Chemical Product and Company Identification
---	---

**Lubrizol Advanced Materials, Inc.**  
**9911 Brecksville Road**  
**Cleveland, Ohio 44141-3247**  
**Telephone: (216) 447-5000**

**Product Trade Name** PF4198T  
**CAS Number** Not applicable for mixtures.  
**Synonyms** None.  
**Generic Chemical Name** Mixture.  
**Product Type** Leather & Artificial Leather  
**Preparation/Revision Date** 23 August 2013  
**Transportation Emergency Phone No.** FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)  
**MSDS No.** 43462637-2222518-802341-102103

2	Hazards Identification
---	------------------------

**Appearance** Gray liquid.  
**Odor** Mild ammonia  
**Principal Hazards** Caution.  

- May cause eye irritation.
- May cause skin irritation.
- Contains components which may cause cancer based on animal data.
- May cause chronic health effects.

**Target Organs:** Lung

See Section 11 for complete health hazard information.

3	Composition/Information on Ingredients
---	--

**Hazardous Ingredients**

Comp	CAS No.	Percentage (by wt.)	Carcinogen
Calcium carbonate	1317-65-3	From 5 to 9.9 percent	N/E
Carbon black.	1333-86-4	From 1 to 4.9 percent	IARC Suspect Carcinogen

(N/E) - None established

4	First Aid Measures
---	--------------------

**Eyes** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.  
**Skin** Wash with soap and water. Remove contaminated clothing. If skin irritation occurs, get medical attention.  
**Inhalation** Remove exposed person to fresh air if adverse effects are observed.  
**Oral** Treat symptomatically. Get medical attention.  
**Additional Information** If exposed or concerned: Get medical attention.

5	Fire Fighting Measures
---	------------------------

**Flash Point**  $\geq 94$  °C, 201.2 °F PMCC (Minimum)  
**Extinguishing Media** Water spray, dry chemical, foam. CO2 may be ineffective on large fires.  
**Firefighting Procedures** Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full

facepiece, coat, pants, gloves and boots. Water may cause splattering.

**Unusual Fire & Explosion Hazards**

Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional information.

6	Accidental Release Measures
---	-----------------------------

**Spill Procedures**

Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

7	Handling and Storage
---	----------------------

**Pumping Temperature**

Not determined.

**Maximum Handling Temperature**

Ambient

**Handling Procedures**

Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.

**Maximum Storage Temperature**

5 – 30 °C, 41 – 86 °F

**Storage Procedures**

Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.

**Maximum Loading Temperature**

Not determined.

8	Exposure Controls/Personal Protection
---	---------------------------------------

**Exposure Limits**

Comp	Exposure Guidelines					
	OSHA		ACGIH		Other	
	TWA	STEL	TWA	STEL	TWA	STEL
Calcium carbonate	15 mg/cu. M	N/E	N/E	N/E	N/E	N/E
Carbon black	3.50 mg/cu. M	N/E	3 mg/cu. M	N/E	3.50 mg/cu. M (u)	N/E

(s) - Skin exposure

(p) - Proposed limit

(c) - Ceiling exposure

(l) - Recommended exposure limit

(u) - Supplier recommended exposure limit

(N/E) - None established

Confidential - See section 1 for HMIRA exemption status

**Other Exposure Limits**

This product contains formaldehyde, which has an OSHA PEL TWA of 0.75 ppm and ACGIH TLV TWA of 0.3 ppm.

**Engineering Controls**

Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.

**Gloves Procedures**

Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.

**Eye Protection**

Safety Glasses.

**Respiratory Protection**

Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.

**Clothing Recommendation**

Gloves, coveralls, apron, boots as necessary to minimize contact. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction.

9	Physical and Chemical Properties
---	----------------------------------

**Flash Point**

≥ 94 °C, 201.2 °F PMCC (Minimum)

**Upper Flammable Limit**

Not determined.

**Lower Flammable Limit**

Not determined.

**Autoignition Point**

Not determined.

**Explosion Data**

Material does not have explosive properties.

**Vapor Pressure**

~ 18 mm Hg (20 °C)

**pH**

9 – 9.5

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Specific Gravity	1.08 (20 °C)
Bulk Density	~ 9 Lb/gal, ~ 1.08 Kg/L
Water Solubility	Dispersible.
Percent Solid	~ 50% By Weight
Percent Volatile	48 – 52% By Weight
Volatile Organic Compound	Not determined.
Vapor Density	< 1 Air=1
Evaporation Rate	< 1 Butyl acetate=1
Odor	Mild ammonia
Appearance	Gray liquid.
Viscosity	< 7000 Centipoise (25 °C)
Odor Threshold	Not determined.
Boiling Point	~ 100 °C, ~ 212 °F(Typical)
Pour Point Temperature	Not determined.
Melting / Freezing Point	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	Stability and Reactivity
----	--------------------------

Stability	Material is normally stable at moderately elevated temperatures and pressures.
Decomposition Temperature	Not determined.
Incompatibility	Acids. Bases. Strong oxidizing agents.
Polymerization	Will not occur.
Thermal Decomposition	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: calcium, nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. May also include isocyanates and small amounts of hydrogen cyanide. Nitrogen oxides. Acrylate monomers
Conditions to Avoid	Do not freeze.

11	Toxicological Information
----	---------------------------

– ACUTE EXPOSURE –

Eye Irritation	May cause eye irritation. Does not meet Canadian D2B or EU R36 criteria. Based on data from components or similar materials. Vapors may cause irritation.
Skin Irritation	May cause mild skin irritation. Does not meet Canadian D2B or EU R38 criteria. Based on data from components or similar materials. Repeated or prolonged skin contact may cause irritation.
Respiratory Irritation	If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract. Based on data from components or similar materials. At processing or combustion temperatures this product may emit fumes and vapors that cause irritation, possibly severe, to the respiratory tract, eyes, or skin.
Dermal Toxicity	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.
Inhalation Toxicity	Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid the inhalation of dust, mists, or vapors.
Oral Toxicity	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain.
Dermal Sensitization	No data available to indicate product or components may be a skin sensitizer.
Inhalation Sensitization	No data available to indicate product or components may be respiratory sensitizers.

– CHRONIC EXPOSURE –

Chronic Toxicity	Chronic exposure to respirable limestone dust in excess of appropriate exposure limits has caused pneumomconiosis.
Carcinogenicity	Based on rat inhalation studies IARC concluded that there is sufficient evidence of carbon black's carcinogenicity in animals but inadequate evidence of carcinogenicity in humans (Group 2B). Recent studies suggest that tumors induced by biologically inert particles such as carbon black, under conditions of overload, may be rat-specific effects as they are not seen in mice or hamsters tested under similar conditions or in studies of carbon black workers.
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Reproductive Toxicity	No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
Teratogenicity	No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

– ADDITIONAL INFORMATION –

Other	Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization. Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons
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with sensitive airways (e.g., asthmatics) may react to vapors.

12	Ecological Information
----	------------------------

-- ENVIRONMENTAL TOXICITY --

<b>Freshwater Fish Toxicity</b>	The acute LC50 is 10 - 100 mg/L based on component data.
<b>Freshwater Invertebrates Toxicity</b>	Not determined.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

-- ENVIRONMENTAL FATE --

<b>Biodegradation</b>	Adequate data is not available to estimate the biodegradation potential of this material.
<b>Bioaccumulation</b>	Less than 1.0% of the components potentially bioconcentrate, based on octanol/water coefficients.
<b>Soil Mobility</b>	Not determined.

13	Disposal Considerations
----	-------------------------

**Waste Disposal** This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14	Transport Information
----	-----------------------

<b>ICAO/IATA I</b>	Not regulated.
<b>ICAO/IATA II</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IMDG EMS Fire</b>	Not applicable.
<b>IMDG EMS Spill</b>	Not applicable.
<b>IMDG MFAG</b>	Not applicable.
<b>MARPOL Annex II</b>	Not determined.
<b>USCG Compatibility</b>	Not determined.
<b>U.S. DOT Bulk</b>	Not regulated.
<b>DOT NAERG</b>	Not applicable.
<b>U.S. DOT (Intermediate)</b>	Not regulated.
<b>U.S. DOT Intermediate NAERG</b>	Not applicable.
<b>U.S. DOT Non-Bulk</b>	Not regulated.
<b>U.S. DOT Non-Bulk NAERG</b>	Not applicable.
<b>Canada</b>	Not regulated.
<b>Mexico</b>	Not regulated.
<b>Bulk Quantity</b>	85000 KG, 187391 lbs.
<b>Intermediate Quantity</b>	11000 KG, 24251 lbs.
<b>Non-Bulk Quantity</b>	400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	Regulatory Information
----	------------------------

-- Global Chemical Inventories --

<b>USA</b>	All components of this material are in compliance with Section 5 of TSCA. This material is manufactured under the Polymer Exemption rule.
<b>Other TSCA Reg.</b>	None known.
<b>EU</b>	To obtain information on the REACH compliance status of this product, please visit <a href="http://Lubrizol.com/REACH">Lubrizol.com/REACH</a> , or e-mail us at <a href="mailto:REACH_MSDS_INQUIRIES@Lubrizol.com">REACH_MSDS_INQUIRIES@Lubrizol.com</a>
<b>Japan</b>	This product requires notification in Japan.
<b>Australia</b>	This product requires notification before sale in Australia.
<b>New Zealand</b>	This product requires notification before sale in New Zealand.
<b>Canada</b>	This product requires notification before sale in Canada.

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Switzerland This product requires notification before sale in Switzerland.  
 Korea This product requires notification before sale in Korea.  
 Philippines This product requires notification before sale in the Philippines.  
 China This product requires notification in China.  
 Taiwan May require notification before sale in Taiwan.

**– Other U.S. Federal Regulations –**

**SARA Ext. Haz. Subst.** This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

**SARA Section 313** This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.

**SARA 311 Classifications**

Acute Hazard	No
Chronic Hazard	Yes
Fire Hazard	No
Reactivity Hazard	No

**CERCLA Hazardous Substances** None known.

**– State Regulations –**

**Cal. Prop. 65** This product may contain chemical(s) known to the state of California to cause cancer and/or birth defects. For additional information please contact Lubrizol Customer Assistance: America(s): AmerLZAMCustomerAssistance@Lubrizol.com ; Europe: EMEAICustomerAssistance@Lubrizol.com ; Asia: APCustomerAssistance@Lubrizol.com

**– Product Registrations –**

**U.S. Fuel Registration** Not applicable.  
**Finnish Registration Number** Not Registered  
**Swedish Registration Number** Not Registered  
**Norwegian Registration Number** Not Registered  
**Danish Registration Number** Not Registered  
**Swiss Registration Number** Not Registered  
**Italian Registration Number** Not Registered

**– Other / International –**

**Miscellaneous Regulatory Information** Not determined.

16	Other Information
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**US NFPA Codes**

Health	Fire	Reactivity	Special
2	1	0	N/E

(N/E) - None established

**HMIS Codes**

Health	Fire	Reactivity
1*	1	0

**Precautionary Labels** Caution.

- May cause eye irritation.
- May cause skin irritation.
- Contains components which may cause cancer based on animal data.
- May cause chronic health effects.

**Revision Indicators** This MSDS has no revisions since 23 August 2013

*As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.*

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.  
RLHW-54

**1. PRODUCT & COMPANY IDENTIFICATION**

<b>Manufacturer:</b> PIONEER CHEMICAL, INC. 300 Goldsmith Street Greenville, SC 29609	<b>Emergency Phone:</b> (864) 232-4304 <b>Information:</b> (864) 232-4304 <b>Print Date:</b> 6/26/15 <b>Revision Date:</b> 6/9/15
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<b>Product Name:</b> RLHW-54	<b>HMIS Rating</b>								
<b>Generic Name:</b> Coating compound									
<b>CAS Number:</b> Mixture									
<b>Product usage:</b> Coatings									
	<table border="1"> <tr> <td>Health Hazard:</td> <td>1</td> </tr> <tr> <td>Flammability:</td> <td>0</td> </tr> <tr> <td>Physical Hazard:</td> <td>0</td> </tr> <tr> <td>Protective Equip.:</td> <td>C</td> </tr> </table>	Health Hazard:	1	Flammability:	0	Physical Hazard:	0	Protective Equip.:	C
Health Hazard:	1								
Flammability:	0								
Physical Hazard:	0								
Protective Equip.:	C								

**2. HAZARDS IDENTIFICATION**

<b>Classification:</b>																			
<b>Pictogram(s):</b>																			
<b>Signal Word:</b>	Warning!																		
<b>Hazard Statement(s):</b>	<table border="1"> <tr> <td>H303</td> <td>May be harmful if swallowed</td> </tr> <tr> <td>H316</td> <td>Causes mild skin irritation</td> </tr> <tr> <td>H320</td> <td>Causes eye irritation</td> </tr> </table>	H303	May be harmful if swallowed	H316	Causes mild skin irritation	H320	Causes eye irritation												
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P333+P313	If skin irritation or rash occurs: Get medical advice																		
P337+P313	If eye irritation persists get medical attention																		
<b>Hazards Not Otherwise Classified:</b>																			

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Components	CAS #	%	Hazard Classification(s)
Poly vinyl acetate	116698-48-7	40 – 60%	H303, H316, H320

**4. FIRST AID MEASURES**

<b>Eyes:</b>	Flush with large amounts of water for 15 minutes. Get medical attention if symptoms persist.
<b>Inhalation:</b>	Inhalation of product should not occur, but if breathing becomes difficult, remove to fresh air and if symptoms persist, seek medical attention.
<b>Skin:</b>	Wash thoroughly with soap and water. Remove contaminated clothing and launder before re-use. Get medical attention if irritation develops and persists.

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.  
*RLHW-54*

**5. FIRE FIGHTING MEASURES**

**Extinguishing Media:** Foam, carbon dioxide, water spray, dry chemical  
**Special Fire Fighting Procedures:** Firefighters should wear self-contained breathing apparatus.  
**Unusual Fire & Explosion Hazards:** None known.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal Protection:** Wear appropriate personal protection equipment as described in Section 8.  
**Environmental Protection:** Confine spill. Transfer liquid to containers for disposal. Place absorbents and diking materials in separate containers. Dispose of in accordance with local, state, and federal regulations.

**7. HANDLING AND STORAGE**

**Handling:** Wear appropriate personal protection equipment as described in Section 8. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. Avoid contact with skin, eyes, and clothing.  
**Storage:** Store in a cool dry area. Store between 34 and 110 degrees F.  
**Other Precautions:** None known.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

<u>Component</u>	<u>CAS #</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Poly vinyl acetate	116698-48-7	Not determined	Not determined

**Respiration Protection:** None normally required.  
**Eye Protection:** Chemical safety goggles with side shields.  
**Glove Protection:** Rubber or neoprene  
**Other Protective Equipment:** Eye wash station and safety shower are suggested.  
**Engineering Controls:** Good general ventilation is acceptable.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	White liquid	<b>Vapor Pressure:</b>	23 hPa (17mm Hg)
<b>Odor:</b>	Mild	<b>Vapor Density:</b>	Not determined
<b>pH:</b>	8.5 - 9.5	<b>Specific Gravity:</b>	1.08
<b>Melting/Freezing Point:</b>	32° F	<b>Solubility:</b>	Dispersible
<b>Initial Boiling Point and Boiling Range:</b>	212° F	<b>Auto-Ignition Temp.</b>	N/A
<b>Flash Point:</b>	Non-combustible	<b>Decomposition Temp:</b>	Not determined.
<b>Evaporation Rate:</b>	Not determined	<b>Viscosity:</b>	~15,500 cps
<b>Flammability:</b>	Non-combustible	<b>Non-Volatiles:</b>	~51 - 57%
<b>Upper/Lower Flammability Limits:</b>	N/A	<b>VOC Content:</b>	Not determined

**10. STABILITY AND REACTIVITY**

**Reactivity:** Not available.  
**Chemical Stability:** Product is stable.  
**Possibility of Hazardous Reactions:** None known.  
**Conditions to Avoid:** None known.  
**Incompatibility (Materials to Avoid):** Strong oxidizing agents.  
**Hazardous Decomposition Products:** Carbon monoxide & carbon dioxide.

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.  
RLHW-54

**11. TOXICOLOGY INFORMATION**

No toxicological information is available.

<u>Carcinogens</u>	<u>CAS #</u>	<u>NTP</u>	<u>IARC Monographs</u>	<u>OSHA Regulated</u>
None				

**12. ECOLOGICAL INFORMATION**

No ecological information is available.

**13. DISPOSAL CONSIDERATION**

Discarded product is not considered a hazardous waste under RCRA, 40 CFR 261. Please dispose of in accordance with all local, state, and federal regulations.

**14. TRANSPORTATION INFORMATION**

<b>DOT Proper Shipping Name:</b>	Not regulated.	<b>DOT Hazard Class:</b>	N/A
<b>DOT Identification Number:</b>	N/A	<b>DOT Packing Group:</b>	N/A

**15. REGULATORY INFORMATION**

<b>OSHA Status:</b> Non-hazardous under Federal OSHA Hazard Communication Standard 29 CFR 1910.1200					
<b>TSCA Status:</b> All ingredients are listed.					
<b>SARA Title III:</b>					
<b>Section 311/312 Hazard Categories:</b>	<b>Immediate (Acute)</b>	<b>Delayed (Chronic)</b>	<b>Fire</b>	<b>Reactive</b>	<b>Sudden Release of Pressure</b>
	No	No	No	No	No
	<b><u>Reportable Components</u></b>			<b><u>CAS Number</u></b>	<b><u>Weight Percent</u></b>
<b>Section 302 Extremely Hazardous Substances:</b>	None at levels greater than 1% (or 0.1% if carcinogenic)				
<b>Section 313: Toxic Chemicals:</b>	None at or above de minimus concentrations				
<b>CERCLA Reportable Quantity:</b>	None at concentrations greater than 1%				
<b>RCRA Status:</b>	If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)				

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.  
*RLHW-54*

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**16. OTHER INFORMATION**

This bulletin cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information contained herein should be passed on to your customers or employees, as the case may be. Pioneer Chemical, Inc. must rely on the user to utilize the information we have supplied to develop work practice guidelines and employee instructional programs for the individual operation.

**DISCLAIMER OF LIABILITY**

The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist. Final determination of suitability of the chemical is the sole responsibility of the user. Users of any chemical should satisfy themselves that the conditions and methods of use assure that the chemical is used safely. No representations of warranties, either expressed or implied, of merchantability, fitness for a particular purpose or of any other nature are made herein with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

Nothing contained herein is to be construed as a recommendation for use in violation of any patents or of appropriate laws or regulations.

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.  
RLHW-61

**1. PRODUCT & COMPANY IDENTIFICATION**

<b>Manufacturer:</b> PIONEER CHEMICAL, INC. 300 Goldsmith Street Greenville, SC 29609	<b>Emergency Phone:</b> (864) 232-4304 <b>Information:</b> (864) 232-4304 <b>Print Date:</b> 7/1/15 <b>Revision Date:</b> 7/1/15
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<b>Product Name:</b> RLHW-61	<table border="1"> <thead> <tr> <th colspan="2">HMIS Rating</th> </tr> </thead> <tbody> <tr> <td>Health</td> <td>1</td> </tr> <tr> <td>Flammability:</td> <td>0</td> </tr> <tr> <td>Physical Hazard:</td> <td>0</td> </tr> <tr> <td>Protective Equip.:</td> <td>B</td> </tr> </tbody> </table>	HMIS Rating		Health	1	Flammability:	0	Physical Hazard:	0	Protective Equip.:	B
HMIS Rating											
Health		1									
Flammability:		0									
Physical Hazard:	0										
Protective Equip.:	B										
<b>Generic Name:</b> Coating compound											
<b>CAS Number:</b> Mixture											
<b>Product usage:</b> Coatings											

**2. HAZARDS IDENTIFICATION**

<b>Pictogram(s):</b>		
<b>Signal Word:</b>	Warning!	
<b>Hazard Statement(s):</b>	H303	May be harmful if swallowed
	H316	Causes mild skin irritation
	H320	Causes eye irritation
<b>Precautionary Statement(s):</b>	P262	Do not get in eyes, on skin, or on clothing
	P264	Wash skin thoroughly after handling
	P270	Do not eat, drink, or smoke when using this product
	P280	Wear protective gloves and eye protection
	P301+P312	IF SWALLOWED: Call a doctor if you feel unwell
	P302+P352	IF ON SKIN: Wash with plenty of water and soap
	P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing
	P333+P313	If skin irritation or rash occurs: Get medical advice
<b>Hazards Not Otherwise Classified:</b>	P337+P313	If eye irritation persists get medical attention

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Components	CAS #	%	Hazard Classification(s)
Titanium dioxide	13463-67-7	<20.0%	
Ammonium hydroxide	1336-21-6	<1.0%	

**4. FIRST AID MEASURES**

<b>Eyes:</b>	Flush with large amounts of water for 15 minutes. Get medical attention if symptoms persist.
<b>Inhalation:</b>	Inhalation of product should not occur, but if breathing becomes difficult, remove to fresh air and if symptoms persist, seek medical attention.
<b>Skin:</b>	Wash thoroughly with soap and water. Remove contaminated clothing and launder before re-use. Get medical attention if irritation develops and persists.

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.  
*RLHW-61*

**5. FIRE FIGHTING MEASURES**

**Extinguishing Media:** Foam, carbon dioxide, water spray, dry chemical  
**Special Fire Fighting Procedures:** Firefighters should wear self-contained breathing apparatus.  
**Unusual Fire & Explosion Hazards:** None known.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal Protection:** Wear appropriate personal protection equipment as described in Section 8.  
**Environmental Protection:** Confine spill. Transfer liquid to containers for disposal. Place absorbents and diking materials in separate containers. Dispose of in accordance with local, state, and federal regulations.

**7. HANDLING AND STORAGE**

**Handling:** Wear appropriate personal protection equipment as described in Section 8. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. Avoid contact with skin, eyes, and clothing.  
**Storage:** Store in a cool dry area. Store between 34 and 110 degrees F.  
**Other Precautions:** None known.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

<u>Component</u>	<u>CAS #</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Titanium dioxide (dust form only)	13463-67-7	15 mg/m <sup>3</sup> 8 h TWA	10 mg/m <sup>3</sup> 8 h TWA
Ammonium hydroxide	1336-21-6	50 ppm TWA	25 ppm TWA

**Respiration Protection:** None normally required.  
**Eye Protection:** Chemical safety goggles with side shields.  
**Glove Protection:** Rubber or neoprene  
**Other Protective Equipment:** Eye wash station and safety shower are suggested.  
**Engineering Controls:** Good general ventilation is acceptable.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	White paste	<b>Vapor Pressure:</b>	Not determined
<b>Odor:</b>	Ammoniacal	<b>Vapor Density:</b>	Not determined
<b>pH:</b>	9.0 -11.0	<b>Relative Density:</b>	Not determined.
<b>Melting/Freezing Point:</b>	32° F	<b>Solubility:</b>	Dispersible
<b>Initial Boiling Point and Boiling Range:</b>	212° F	<b>Auto-Ignition Temp.</b>	N/A
<b>Flash Point:</b>	Non-combustible	<b>Decomposition Temp:</b>	Not determined
<b>Evaporation Rate:</b>	Not determined	<b>Viscosity:</b>	~16,000 cps
<b>Flammability:</b>	Non-combustible	<b>Non-Volatiles:</b>	~61%
<b>Upper/Lower Flammability Limits:</b>	N/A	<b>VOC Content:</b>	Not determined

**10. STABILITY AND REACTIVITY**

**Reactivity:** Not available.  
**Chemical Stability:** Product is stable.  
**Possibility of Hazardous Reactions:** None known.  
**Conditions to Avoid:** None known.  
**Incompatibility (Materials to Avoid):** Strong oxidizing agents.  
**Hazardous Decomposition Products:** Carbon monoxide & carbon dioxide.

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.

**RLHW-61**

**11. TOXICOLOGY INFORMATION**

**Carcinogenicity – Titanium dioxide – dry(respirable)**

In lifetime inhalation studies rats were exposed for 2 years to respectively 10, 50 and 250 mg/m<sup>3</sup> of respirable TiO<sub>2</sub>. Slight lung fibrosis was observed at 50 and 250 mg/m<sup>3</sup> levels. Microscopic lung tumors were also observed in 13 percent of the rats exposed to 250 mg/m<sup>3</sup>, an exposure level that caused lung overloading and impairment of rat lungs clearance mechanisms. In further studies, these tumors were found to occur only under particle overload conditions in a uniquely sensitive species, the rat, and have little or no relevance for humans. The pulmonary inflammatory response to TiO<sub>2</sub> particles exposure was also found to be much more severe in rats than in other rodent species. In February 2006, IARC has re-evaluated Titanium dioxide as pertaining to Group 2B: "possibly carcinogenic to humans", based upon inadequate evidence in humans and sufficient evidence in experimental animals for the carcinogenicity of titanium dioxide. IARC evaluation guidelines consider the generation of tumors, in 2 different studies within the same animal species, to be adequate criteria for an assessment of sufficient evidence. The conclusions of several epidemiology studies on more than 20000 TiO<sub>2</sub> industry workers in Europe and the USA did not suggest a carcinogenic effect of TiO<sub>2</sub> dust on the human lung. Mortality from other chronic diseases, including other respiratory diseases, was also not associated with exposure to TiO<sub>2</sub> dust. Based upon all available study results, our titanium manufacturer's scientists conclude that titanium dioxide will not cause lung cancer or chronic respiratory diseases in humans at concentrations experienced in the workplace.

<u>Carcinogens</u>	<u>CAS #</u>	<u>NTP</u>	<u>IARC Monographs</u>	<u>OSHA Regulated</u>
Titanium dioxide	13463-67-7	N/A	2B	N/A

**12. ECOLOGICAL INFORMATION**

No ecological information is available.

**13. DISPOSAL CONSIDERATION**

Discarded product is not considered a hazardous waste under RCRA, 40 CFR 261. Please dispose of in accordance with all local, state, and federal regulations.

**14. TRANSPORTATION INFORMATION**

<b>DOT Proper Shipping Name:</b>	Not regulated.	<b>DOT Hazard Class:</b>	N/A
<b>DOT Identification Number:</b>	N/A	<b>DOT Packing Group:</b>	N/A

SAFETY DATA SHEET  
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**15. REGULATORY INFORMATION**

<b>OSHA Status:</b> Hazardous under Federal OSHA Hazard Communication Standard 29 CFR 1910.1200					
<b>TSCA Status:</b> All ingredients are listed.					
<b>SARA Title III:</b>					
<b>Section 311/312 Hazard Categories:</b>	<b>Immediate (Acute)</b> Yes	<b>Delayed (Chronic)</b> No	<b>Fire</b> No	<b>Reactive</b> No	<b>Sudden Release of Pressure</b> No
	<b><u>Reportable Components</u></b>			<b><u>CAS Number</u></b>	<b><u>Weight Percent</u></b>
<b>Section 302 Extremely Hazardous Substances:</b>	None at levels greater than 1% (or 0.1% if carcinogenic)				
<b>Section 313: Toxic Chemicals:</b>	Ammonium hydroxide			1336-21-6	<1.0%
<b>CERCLA Reportable Quantity:</b>	Ammonium hydroxide (RQ: 1000 lbs)			1336-21-6	<1.0%
<b>RCRA Status:</b> If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)					

**16. OTHER INFORMATION**

This bulletin cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information contained herein should be passed on to your customers or employees, as the case may be. Pioneer Chemical, Inc. must rely on the user to utilize the information we have supplied to develop work practice guidelines and employee instructional programs for the individual operation.

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Nothing contained herein is to be construed as a recommendation for use in violation of any patents or of appropriate laws or regulations.

**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 10/11/2004

Reviewed on 10/08/2004

**1 Identification of substance**

• **Product details**

- **Trade name:** SCR 30
- **Article number:** SCR30
- **Application of the substance / the preparation** Endring glue remover

• **Manufacturer/Supplier:**

Stork Prints B.V.  
Raamstraat 1-3  
P.O. Box 67  
5830 AB Boxmeer  
The Netherlands

Tel. +31485588200  
Fax. +31485588363

E-mail: [info.storkprints@stork.com](mailto:info.storkprints@stork.com)  
Internet: <http://www.storkprints.com>

• **Information department:**

Health and Safety Department  
Emergency telephone number: +31485599194  
Emergency fax number: +31485574148

**2 Composition/Data on components**

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

• **Dangerous components:**

75-09-2	dichloromethane	 Xn; R 40	78-82%
67-56-1	methanol	 T,  F; R 11-23/24/25-39/23/24/25	17-19%
64-18-6	formic acid	 C; R 35	1.8-2.0%

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

**3 Hazards identification**

• **Hazard description:**



T Toxic  
F Highly flammable

• **Information pertaining to particular dangers for man and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

- R 11 Highly flammable.
- R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
- R 36/38 Irritating to eyes and skin.
- R 39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
- R 40 Limited evidence of a carcinogenic effect.

• **Classification system:**

The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

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Trade name: SCR 30

(Contd. of page 1)

· **NFPA ratings (scale 0 - 4)**



Health = 1  
Fire = 3  
Reactivity = 0

· **HMS-ratings (scale 0 - 4)**



Health = \*1  
Fire = 3  
Reactivity = 0

#### 4 First aid measures

· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:** Rinse opened eye for several minutes under running water.

· **After swallowing:** Immediately call a doctor.

#### 5 Fire fighting measures

· **Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **Special hazards caused by the material, its products of combustion or resulting gases:**

In certain fire conditions, traces of other toxic gases cannot be excluded.

· **Protective equipment:**

Wear fully protective suit.

Mouth respiratory protective device.

#### 6 Accidental release measures

· **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.

· **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.

· **Measures for cleaning/collecting:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

#### 7 Handling and storage

· **Handling:**

· **Information for safe handling:**

Keep away from heat and direct sunlight.

Store in cool, dry place in tightly closed receptacles.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

· **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

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Trade name: SCR 30

(Contd. of page 2)

Keep respiratory protective device available.

- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
Store only in the original receptacle.  
Store in a cool location.
- **Information about storage in one common storage facility: Not required.**
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.

**8 Exposure controls and personal protection**

- **Additional information about design of technical systems: No further data; see item 7.**

- **Components with limit values that require monitoring at the workplace:**

**75-09-2 dichloromethane**

PEL Short-term value: 125 ppm  
Long-term value: 25 ppm  
see 29 CFR 1910.1052  
REL Lowest feasible conc.  
TLV 174 mg/m<sup>3</sup>, 50 ppm

**67-56-1 methanol**

PEL 260 mg/m<sup>3</sup>, 200 ppm  
REL Short-term value: 325 mg/m<sup>3</sup>, 250 ppm  
Long-term value: 260 mg/m<sup>3</sup>, 200 ppm  
Skin  
TLV Short-term value: 328 mg/m<sup>3</sup>, 250 ppm  
Long-term value: 262 mg/m<sup>3</sup>, 200 ppm  
Skin; BEI

**64-18-6 formic acid**

PEL 9 mg/m<sup>3</sup>, 5 ppm  
REL 9 mg/m<sup>3</sup>, 5 ppm  
TLV Short-term value: 19 mg/m<sup>3</sup>, 10 ppm  
Long-term value: 9.4 mg/m<sup>3</sup>, 5 ppm

- **Additional information: The lists that were valid during the creation were used as basis.**

- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.
- **Breathing equipment:**  
Use suitable respiratory protective device in case of insufficient ventilation.  
Filter AX
- **Protection of hands:**



Protective gloves

**Solvent resistant gloves**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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**Trade name: SCR 30**

(Contd. of page 3)

*Butyl rubber, BR*

*Neoprene gloves*

*Penetration time of glove material*

*The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.*

*Eye protection:*



*Tightly sealed goggles*

*Body protection: Protective work clothing*

**9 Physical and chemical properties**

**General Information**

<b>Form:</b>	<i>Fluid</i>
<b>Color:</b>	<i>Red</i>
<b>Odor:</b>	<i>Characteristic</i>

**Change in condition**

**Melting point/Melting range:** *Undetermined.*

**Boiling point/Boiling range:** *40°C (104°F)*

**Flash point:** *15°C (59°F)*

**Ignition temperature:** *455°C (851°F)*

**Auto igniting:** *Product is not selfigniting.*

**Danger of explosion:** *Product is not explosive. However, formation of explosive air/vapor mixtures are possible.*

**Explosion limits:**

**Lower:** *5.5 Vol %*

**Upper:** *44.0 Vol %*

**Vapor pressure at 20°C (68°F):** *453 hPa (340 mm Hg)*

**Density at 20°C (68°F):** *1.175 g/cm<sup>3</sup>*

**Solubility in / Miscibility with**

**Water:** *Not miscible or difficult to mix.*

**pH-value at 20°C (68°F):** *2.3 - 3.6*

**Solvent content:**

**Organic solvents:** *98.0 %*

**Swiss-VOCV:** *1152 g/l = 98.0 %*

**10 Stability and reactivity**

**Thermal decomposition / conditions to be avoided:** *No decomposition if used according to specifications.*

**Dangerous reactions** *No dangerous reactions known.*

**Dangerous products of decomposition:** *No dangerous decomposition products known.*

USA

(Contd. on page 5)

# Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 10/11/2004

Reviewed on 10/08/2004

Trade name: SCR 30

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## 11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

Oral	LD50	2000 mg/kg (rat) Calculated for the mixture
------	------	--

**75-09-2 dichloromethane**

Oral	LD50	1600 mg/kg (rat)
Inhalative	LC50/4 h	88 mg/l (rat)

**67-56-1 methanol**

Oral	LD50	5628 mg/kg (rat)
Dermal	LD50	15800 mg/kg (rabbit)

· **Primary irritant effect:**

· **on the skin:** Irritant to skin and mucous membranes.

· **on the eye:** Irritating effect.

· **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

## 12 Ecological information

· **Ecotoxicological effects:**

· **Acquatic toxicity:**

COD	400000 mg/l (6633)
-----	--------------------

**75-09-2 dichloromethane**

LC50/fish (48 hrs)	330 mg/l (Fish)
--------------------	-----------------

**67-56-1 methanol**

48h EC50 Daphnia mag	100 mg/l (daphnia)
----------------------	--------------------

· **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

## 13 Disposal considerations

· **Product:**

· **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

USA

(Contd. on page 6)

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acc. to ISO/DIS 11014

Printing date 10/11/2004

Reviewed on 10/08/2004

Trade name: SCR 30

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**14 Transport information**

**· DOT regulations:**



- Hazard class: 3
- Identification number: UN1993
- Packing group: II
- Proper shipping name (technical name): FLAMMABLE LIQUID, N.O.S. (METHANOL, DICHLOROMETHANE)
- Label: 3

**· Land transport ADR/RID (cross-border):**



- ADR/RID class: 3 Flammable liquids
- Danger code (Kemler): 33
- UN-Number: 1993
- Packaging group: II
- Description of goods: 1993 FLAMMABLE LIQUID, N.O.S. (METHANOL, DICHLOROMETHANE)

**· Maritime transport IMDG:**



- IMDG Class: 3
- UN Number: 1993
- Label: 3
- Packaging group: II
- EMS Number: F-E,S-E
- Marine pollutant: No
- Proper shipping name: FLAMMABLE LIQUID, N.O.S. (METHANOL, DICHLOROMETHANE)

**· Air transport ICAO-TI and IATA-DGR:**



- ICAO/IATA Class: 3
- UNID Number: 1993
- Label: 3
- Packaging group: II
- Proper shipping name: FLAMMABLE LIQUID, N.O.S. (METHANOL, DICHLOROMETHANE)

**15 Regulations**

- Sara
- Section 355 (extremely hazardous substances):

None of the ingredient is listed

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Reviewed on 10/08/2004

Trade name: SCR 30

(Contd. of page 6)

· <b>Section 313 (Specific toxic chemical listings):</b>		
All ingredients are listed.		
· <b>TSCA (Toxic Substances Control Act):</b>		
All ingredients are listed.		
· <b>Proposition 65</b>		
· <b>Chemicals known to cause cancer:</b>		
75-09-2	dichloromethane	
· <b>Chemicals known to cause reproductive toxicity:</b>		
None of the ingredients is listed.		
· <b>Carcinogenity categories</b>		
· <b>EPA (Environmental Protection Agency)</b>		
75-09-2	dichloromethane	B2
· <b>IARC (International Agency for Research on Cancer)</b>		
75-09-2	dichloromethane	2B
· <b>NTP (National Toxicology Program)</b>		
75-09-2	dichloromethane	R
· <b>TLV (Threshold Limit Value established by ACGIH)</b>		
75-09-2	dichloromethane	A3
· <b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>		
75-09-2	dichloromethane	
· <b>OSHA-Ca (Occupational Safety &amp; Health Administration)</b>		
75-09-2	dichloromethane	

- **Product related hazard informations:**  
The product has been classified and marked in accordance with directives on hazardous materials.
- **Hazard symbols:**  
T Toxic  
F Highly flammable
- **Hazard-determining components of labelling:**  
methanol  
dichloromethane
- **Risk phrases:**  
11 Highly flammable.  
20/21/22 Harmful by inhalation, in contact with skin and if swallowed.  
36/38 Irritating to eyes and skin.  
39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.  
40 Limited evidence of a carcinogenic effect.
- **Safety phrases:**  
36/37 Wear suitable protective clothing and gloves.  
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
53 Avoid exposure - obtain special instructions before use.
- **National regulations:**
- **Water hazard class: Water hazard class 2 (Self-assessment): hazardous for water.**

**16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any

**Material Safety Data Sheet**  
*acc. to ISO/DIS 11014*

*Printing date 10/11/2004*

*Reviewed on 10/08/2004*

**Trade name: SCR 30**

(Contd. of page 7)

- *Department issuing MSDS: Health and Safety Department*
- *Contact: Mr J.Bongers H&S department*

USA



Prepared according to 29CFR 1910.1200.

1	Chemical Product and Company Identification
---	---

*Lubrizol Advanced Materials, Inc.*  
9911 Brecksville Road  
Cleveland, Ohio 44141-3247  
Telephone: (216) 447-5000

**Product Trade Name** PF4198T  
**CAS Number** Not applicable for mixtures.  
**Synonyms** None.  
**Generic Chemical Name** Mixture.  
**Product Type** Leather & Artificial Leather  
**Preparation/Revision Date** 23 August 2013  
**Transportation Emergency Phone No.** FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)  
**MSDS No.** 43462637-2222518-802341-102103

2	Hazards Identification
---	------------------------

**Appearance** Gray liquid.  
**Odor** Mild ammonia  
**Principal Hazards** Caution.  

- May cause eye irritation.
- May cause skin irritation.
- Contains components which may cause cancer based on animal data.
- May cause chronic health effects.

**Target Organs:** Lung

See Section 11 for complete health hazard information.

3	Composition/Information on Ingredients
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**Hazardous Ingredients**

Comp	CAS No.	Percentage (by wt.)	Carcinogen
Calcium carbonate	1317-65-3	From 5 to 9.9 percent	N/E
Carbon black	1333-86-4	From 1 to 4.9 percent	IARC Suspect Carcinogen

(N/E) - None established

4	First Aid Measures
---	--------------------

**Eyes** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.  
**Skin** Wash with soap and water. Remove contaminated clothing. If skin irritation occurs, get medical attention.  
**Inhalation** Remove exposed person to fresh air if adverse effects are observed.  
**Oral** Treat symptomatically. Get medical attention.  
**Additional Information** If exposed or concerned: Get medical attention.

5	Fire Fighting Measures
---	------------------------

**Flash Point**  $\geq 94$  °C, 201.2 °F PMCC (Minimum)  
**Extinguishing Media** Water spray, dry chemical, foam. CO2 may be ineffective on large fires.  
**Firefighting Procedures** Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full

facepiece, coat, pants, gloves and boots. Water may cause splattering.

**Unusual Fire & Explosion Hazards** Material will not burn until water has been evaporated. Container may rupture on heating. See section 10 for additional information.

6	<b>Accidental Release Measures</b>
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**Spill Procedures** Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Spilled liquid and dried film are slippery. Use care to avoid falls. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash spill area with soap and water.

7	<b>Handling and Storage</b>
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**Pumping Temperature** Not determined.  
**Maximum Handling Temperature** Ambient  
**Handling Procedures** Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Avoid eye contact. Avoid repeated or prolonged skin contact. When handling, do not eat, drink, or smoke. Avoid drinking, tasting, swallowing or ingesting this product. Stir well before use. Avoid breathing dust, fume, gas, mist, vapors or spray. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling. Empty container contains product residue which may exhibit hazards of product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.  
**Maximum Storage Temperature** 5 – 30 °C, 41 – 86 °F  
**Storage Procedures** Take precautions to avoid release to the environment. Keep from freezing. Keep container closed when not in use. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials.  
**Maximum Loading Temperature** Not determined.

8	<b>Exposure Controls/Personal Protection</b>
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**Exposure Limits**

Comp	Exposure Guidelines					
	OSHA		ACGIH		Other	
	TWA	STEL	TWA	STEL	TWA	STEL
Calcium carbonate	15 mg/cu. M	N/E	N/E	N/E	N/E	N/E
Carbon black	3.50 mg/cu. M	N/E	3 mg/cu. M	N/E	3.50 mg/cu. M (u)	N/E

- (s) - Skin exposure
- (p) - Proposed limit
- (c) - Ceiling exposure
- (l) - Recommended exposure limit
- (u) - Supplier recommended exposure limit
- (N/E) - None established
- Confidential - See section 1 for HMIRA exemption status

**Other Exposure Limits** This product contains formaldehyde, which has an OSHA PEL TWA of 0.75 ppm and ACGIH TLV TWA of 0.3 ppm.

**Engineering Controls** Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.

**Gloves Procedures** Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.

**Eye Protection** Safety Glasses.

**Respiratory Protection** Use NIOSH/MSHA approved respirator with a combination organic vapor and high efficiency filter cartridge if recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.

**Clothing Recommendation** Gloves, coveralls, apron, boots as necessary to minimize contact. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction.

9	<b>Physical and Chemical Properties</b>
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**Flash Point** >= 94 °C, 201.2 °F PMCC (Minimum)  
**Upper Flammable Limit** Not determined.  
**Lower Flammable Limit** Not determined.  
**Autoignition Point** Not determined.  
**Explosion Data** Material does not have explosive properties.  
**Vapor Pressure** ~ 18 mm Hg (20 °C)  
**pH** 9 – 9.5

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Specific Gravity	1.08 (20 °C)
Bulk Density	~ 9 Lb/gal, ~ 1.08 Kg/L
Water Solubility	Dispersible.
Percent Solid	~ 50% By Weight
Percent Volatile	48 – 52% By Weight
Volatile Organic Compound	Not determined.
Vapor Density	< 1 Air=1
Evaporation Rate	< 1 Butyl acetate=1
Odor	Mild ammonia
Appearance	Gray liquid.
Viscosity	< 7000 Centipoise (25 °C)
Odor Threshold	Not determined.
Boiling Point	~ 100 °C, ~ 212 °F(Typical)
Pour Point Temperature	Not determined.
Melting / Freezing Point	~ 0 °C, ~ 32 °F

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10	Stability and Reactivity
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Stability	Material is normally stable at moderately elevated temperatures and pressures.
Decomposition Temperature	Not determined.
Incompatibility	Acids. Bases. Strong oxidizing agents.
Polymerization	Will not occur.
Thermal Decomposition	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: calcium, nitrogen. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids. May also include isocyanates and small amounts of hydrogen cyanide. Nitrogen oxides. Acrylate monomers
Conditions to Avoid	Do not freeze.

11	Toxicological Information
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– ACUTE EXPOSURE –

Eye Irritation	May cause eye irritation. Does not meet Canadian D2B or EU R36 criteria. Based on data from components or similar materials. Vapors may cause irritation.
Skin Irritation	May cause mild skin irritation. Does not meet Canadian D2B or EU R38 criteria. Based on data from components or similar materials. Repeated or prolonged skin contact may cause irritation.
Respiratory Irritation	If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract. Based on data from components or similar materials. At processing or combustion temperatures this product may emit fumes and vapors that cause irritation, possibly severe, to the respiratory tract, eyes, or skin.
Dermal Toxicity	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.
Inhalation Toxicity	Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid the inhalation of dust, mists, or vapors.
Oral Toxicity	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain.
Dermal Sensitization	No data available to indicate product or components may be a skin sensitizer.
Inhalation Sensitization	No data available to indicate product or components may be respiratory sensitizers.

– CHRONIC EXPOSURE –

Chronic Toxicity	Chronic exposure to respirable limestone dust in excess of appropriate exposure limits has caused pneumoconiosis.
Carcinogenicity	Based on rat inhalation studies IARC concluded that there is sufficient evidence of carbon black's carcinogenicity in animals but inadequate evidence of carcinogenicity in humans (Group 2B). Recent studies suggest that tumors induced by biologically inert particles such as carbon black, under conditions of overload, may be rat-specific effects as they are not seen in mice or hamsters tested under similar conditions or in studies of carbon black workers.
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Reproductive Toxicity	No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
Teratogenicity	No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

– ADDITIONAL INFORMATION –

Other	Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization. Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons
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with sensitive airways (e.g., asthmatics) may react to vapors.

12	Ecological Information
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– ENVIRONMENTAL TOXICITY –

<b>Freshwater Fish Toxicity</b>	The acute LC50 is 10 - 100 mg/L based on component data.
<b>Freshwater Invertebrates Toxicity</b>	Not determined.
<b>Algal Inhibition</b>	Not determined.
<b>Saltwater Fish Toxicity</b>	Not determined.
<b>Saltwater Invertebrates Toxicity</b>	Not determined.
<b>Bacteria Toxicity</b>	Not determined.
<b>Miscellaneous Toxicity</b>	Not determined.

– ENVIRONMENTAL FATE –

<b>Biodegradation</b>	Adequate data is not available to estimate the biodegradation potential of this material.
<b>Bioaccumulation</b>	Less than 1.0% of the components potentially bioconcentrate, based on octanol/water coefficients.
<b>Soil Mobility</b>	Not determined.

13	Disposal Considerations
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<b>Waste Disposal</b>	This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.
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14	Transport Information
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<b>ICAO/IATA I</b>	Not regulated.
<b>ICAO/IATA II</b>	Not regulated.
<b>IMDG</b>	Not regulated.
<b>IMDG EMS Fire</b>	Not applicable.
<b>IMDG EMS Spill</b>	Not applicable.
<b>IMDG MFAG</b>	Not applicable.
<b>MARPOL Annex II</b>	Not determined.
<b>USCG Compatibility</b>	Not determined.
<b>U.S. DOT Bulk</b>	Not regulated.
<b>DOT NAERG</b>	Not applicable.
<b>U.S. DOT (Intermediate)</b>	Not regulated.
<b>U.S. DOT Intermediate NAERG</b>	Not applicable.
<b>U.S. DOT Non-Bulk</b>	Not regulated.
<b>U.S. DOT Non-Bulk NAERG</b>	Not applicable.
<b>Canada</b>	Not regulated.
<b>Mexico</b>	Not regulated.
<b>Bulk Quantity</b>	85000 KG, 187391 lbs.
<b>Intermediate Quantity</b>	11000 KG, 24251 lbs.
<b>Non-Bulk Quantity</b>	400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	Regulatory Information
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– Global Chemical Inventories –

<b>USA</b>	All components of this material are in compliance with Section 5 of TSCA. This material is manufactured under the Polymer Exemption rule.
<b>Other TSCA Reg.</b>	None known.
<b>EU</b>	To obtain information on the REACH compliance status of this product, please visit <a href="http://Lubrizol.com/REACH">Lubrizol.com/REACH</a> , or e-mail us at <a href="mailto:REACH_MSDS_INQUIRIES@Lubrizol.com">REACH_MSDS_INQUIRIES@Lubrizol.com</a>
<b>Japan</b>	This product requires notification in Japan.
<b>Australia</b>	This product requires notification before sale in Australia.
<b>New Zealand</b>	This product requires notification before sale in New Zealand.
<b>Canada</b>	This product requires notification before sale in Canada.

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Switzerland This product requires notification before sale in Switzerland.  
 Korea This product requires notification before sale in Korea.  
 Philippines This product requires notification before sale in the Philippines.  
 China This product requires notification in China.  
 Taiwan May require notification before sale in Taiwan.

**-- Other U.S. Federal Regulations --**

**SARA Ext. Haz. Subst.** This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

**SARA Section 313** This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.

**SARA 311 Classifications**

Acute Hazard	No
Chronic Hazard	Yes
Fire Hazard	No
Reactivity Hazard	No

**CERCLA Hazardous Substances** None known.

**-- State Regulations --**

**Cal. Prop. 65** This product may contain chemical(s) known to the state of California to cause cancer and/or birth defects. For additional information please contact Lubrizol Customer Assistance: America(s): AmerLZAMCustomerAssistance@Lubrizol.com ; Europe: EMEAICustomerAssistance@Lubrizol.com ; Asia: APCustomerAssistance@Lubrizol.com

**-- Product Registrations --**

**U.S. Fuel Registration** Not applicable.  
**Finnish Registration Number** Not Registered  
**Swedish Registration Number** Not Registered  
**Norwegian Registration Number** Not Registered  
**Danish Registration Number** Not Registered  
**Swiss Registration Number** Not Registered  
**Italian Registration Number** Not Registered

**-- Other / International --**

**Miscellaneous Regulatory Information** Not determined.

16	Other Information
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**US NFPA Codes**

Health	Fire	Reactivity	Special
2	1	0	N/E

(N/E) - None established

**HMIS Codes**

Health	Fire	Reactivity
1*	1	0

**Precautionary Labels**

- Caution.
- May cause eye irritation.
  - May cause skin irritation.
  - Contains components which may cause cancer based on animal data.
  - May cause chronic health effects.

**Revision Indicators**

This MSDS has no revisions since 23 August 2013

*As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.*

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.  
RLHW-54

**1. PRODUCT & COMPANY IDENTIFICATION**

<b>Manufacturer:</b> PIONEER CHEMICAL, INC. 300 Goldsmith Street Greenville, SC 29609	<b>Emergency Phone:</b> (864) 232-4304 <b>Information:</b> (864) 232-4304 <b>Print Date:</b> 6/26/15 <b>Revision Date:</b> 6/9/15
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<b>Product Name:</b> RLHW-54	<b>HMIS Rating</b>								
<b>Generic Name:</b> Coating compound									
<b>CAS Number:</b> Mixture									
<b>Product usage:</b> Coatings									
	<table border="1"> <tr> <td>Health:</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Flammability:</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Physical Hazard:</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Protective Equip.:</td> <td style="text-align: center;">C</td> </tr> </table>	Health:	1	Flammability:	0	Physical Hazard:	0	Protective Equip.:	C
Health:	1								
Flammability:	0								
Physical Hazard:	0								
Protective Equip.:	C								

**2. HAZARDS IDENTIFICATION**

<b>Classification:</b>																			
<b>Pictogram(s):</b>																			
<b>Signal Word:</b>	Warning!																		
<b>Hazard Statement(s):</b>	<table border="1"> <tr> <td>H303</td> <td>May be harmful if swallowed</td> </tr> <tr> <td>H316</td> <td>Causes mild skin irritation</td> </tr> <tr> <td>H320</td> <td>Causes eye irritation</td> </tr> </table>	H303	May be harmful if swallowed	H316	Causes mild skin irritation	H320	Causes eye irritation												
H303	May be harmful if swallowed																		
H316	Causes mild skin irritation																		
H320	Causes eye irritation																		
<b>Precautionary Statement(s):</b>	<table border="1"> <tr> <td>P262</td> <td>Do not get in eyes, on skin, or on clothing</td> </tr> <tr> <td>P264</td> <td>Wash skin thoroughly after handling</td> </tr> <tr> <td>P270</td> <td>Do not eat, drink, or smoke when using this product</td> </tr> <tr> <td>P280</td> <td>Wear protective gloves and eye protection</td> </tr> <tr> <td>P301+P312</td> <td>IF SWALLOWED: Call a doctor if you feel unwell</td> </tr> <tr> <td>P302+P352</td> <td>IF ON SKIN: Wash with plenty of water and soap</td> </tr> <tr> <td>P305+P351+P338</td> <td>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing</td> </tr> <tr> <td>P333+P313</td> <td>If skin irritation or rash occurs: Get medical advice</td> </tr> <tr> <td>P337+P313</td> <td>If eye irritation persists get medical attention</td> </tr> </table>	P262	Do not get in eyes, on skin, or on clothing	P264	Wash skin thoroughly after handling	P270	Do not eat, drink, or smoke when using this product	P280	Wear protective gloves and eye protection	P301+P312	IF SWALLOWED: Call a doctor if you feel unwell	P302+P352	IF ON SKIN: Wash with plenty of water and soap	P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing	P333+P313	If skin irritation or rash occurs: Get medical advice	P337+P313	If eye irritation persists get medical attention
P262	Do not get in eyes, on skin, or on clothing																		
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P333+P313	If skin irritation or rash occurs: Get medical advice																		
P337+P313	If eye irritation persists get medical attention																		
<b>Hazards Not Otherwise Classified:</b>																			

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Components	CAS #	%	Hazard Classification(s)
Poly vinyl acetate	116698-48-7	40 – 60%	H303, H316, H320

**4. FIRST AID MEASURES**

<b>Eyes:</b>	Flush with large amounts of water for 15 minutes. Get medical attention if symptoms persist.
<b>Inhalation:</b>	Inhalation of product should not occur, but if breathing becomes difficult, remove to fresh air and if symptoms persist, seek medical attention.
<b>Skin:</b>	Wash thoroughly with soap and water. Remove contaminated clothing and launder before re-use. Get medical attention if irritation develops and persists.

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.  
*RLHW-54*

**5. FIRE FIGHTING MEASURES**

**Extinguishing Media:** Foam, carbon dioxide, water spray, dry chemical  
**Special Fire Fighting Procedures:** Firefighters should wear self-contained breathing apparatus.  
**Unusual Fire & Explosion Hazards:** None known.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal Protection:** Wear appropriate personal protection equipment as described in Section 8.  
**Environmental Protection:** Confine spill. Transfer liquid to containers for disposal. Place absorbents and diking materials in separate containers. Dispose of in accordance with local, state, and federal regulations.

**7. HANDLING AND STORAGE**

**Handling:** Wear appropriate personal protection equipment as described in Section 8. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. Avoid contact with skin, eyes, and clothing.  
**Storage:** Store in a cool dry area. Store between 34 and 110 degrees F.  
**Other Precautions:** None known.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

<u>Component</u>	<u>CAS #</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Poly vinyl acetate	116698-48-7	Not determined	Not determined

**Respiration Protection:** None normally required.  
**Eye Protection:** Chemical safety goggles with side shields.  
**Glove Protection:** Rubber or neoprene  
**Other Protective Equipment:** Eye wash station and safety shower are suggested.  
**Engineering Controls:** Good general ventilation is acceptable.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	White liquid	<b>Vapor Pressure:</b>	23 hPa (17mm Hg)
<b>Odor:</b>	Mild	<b>Vapor Density:</b>	Not determined
<b>pH:</b>	8.5 - 9.5	<b>Specific Gravity:</b>	1.08
<b>Melting/Freezing Point:</b>	32° F	<b>Solubility:</b>	Dispersible
<b>Initial Boiling Point and Boiling Range:</b>	212° F	<b>Auto-Ignition Temp.</b>	N/A
<b>Flash Point:</b>	Non-combustible	<b>Decomposition Temp:</b>	Not determined.
<b>Evaporation Rate:</b>	Not determined	<b>Viscosity:</b>	~15,500 cps
<b>Flammability:</b>	Non-combustible	<b>Non-Volatiles:</b>	~51 - 57%
<b>Upper/Lower Flammability Limits:</b>	N/A	<b>VOC Content:</b>	Not determined

**10. STABILITY AND REACTIVITY**

**Reactivity:** Not available.  
**Chemical Stability:** Product is stable.  
**Possibility of Hazardous Reactions:** None known.  
**Conditions to Avoid:** None known.  
**Incompatibility (Materials to Avoid):** Strong oxidizing agents.  
**Hazardous Decomposition Products:** Carbon monoxide & carbon dioxide.

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.  
RLHW-54

**11. TOXICOLOGY INFORMATION**

No toxicological information is available.

<u>Carcinogens</u>	<u>CAS #</u>	<u>NTP</u>	<u>IARC Monographs</u>	<u>OSHA Regulated</u>
None				

**12. ECOLOGICAL INFORMATION**

No ecological information is available.

**13. DISPOSAL CONSIDERATION**

Discarded product is not considered a hazardous waste under RCRA, 40 CFR 261. Please dispose of in accordance with all local, state, and federal regulations.

**14. TRANSPORTATION INFORMATION**

<b>DOT Proper Shipping Name:</b>	Not regulated.	<b>DOT Hazard Class:</b>	N/A
<b>DOT Identification Number:</b>	N/A	<b>DOT Packing Group:</b>	N/A

**15. REGULATORY INFORMATION**

<b>OSHA Status:</b> Non-hazardous under Federal OSHA Hazard Communication Standard 29 CFR 1910.1200						
<b>TSCA Status:</b> All ingredients are listed.						
<b>SARA Title III:</b>						
<b>Section 311/312 Hazard Categories:</b>	<b>Immediate (Acute)</b>	<b>Delayed (Chronic)</b>	<b>Fire</b>	<b>Reactive</b>	<b>Sudden Release of Pressure</b>	
	No	No	No	No	No	
	<b><u>Reportable Components</u></b>				<b><u>CAS Number</u></b>	<b><u>Weight Percent</u></b>
<b>Section 302 Extremely Hazardous Substances:</b>	None at levels greater than 1% (or 0.1% if carcinogenic)					
<b>Section 313: Toxic Chemicals:</b>	None at or above de minimus concentrations					
<b>CERCLA Reportable Quantity:</b>	None at concentrations greater than 1%					
<b>RCRA Status:</b>	If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)					

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.  
*RLHW-54*

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**16. OTHER INFORMATION**

This bulletin cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information contained herein should be passed on to your customers or employees, as the case may be. Pioneer Chemical, Inc. must rely on the user to utilize the information we have supplied to develop work practice guidelines and employee instructional programs for the individual operation.

**DISCLAIMER OF LIABILITY**

The information contained herein is, to the best offer knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist. Final determination of suitability of the chemical is the sole responsibility of the user. Users of any chemical should satisfy themselves that the conditions and methods of use assure that the chemical is used safely. No representations of warranties, either expressed or implied, of merchantability, fitness for a particular purpose of any other nature are made herein with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

Nothing contained herein is to be construed as a recommendation for use in violation of any patents or of appropriate laws or regulations.

SAFETY DATA SHEET  
PIONEER CHEMICAL, INC.  
*RLHW-61*

**1. PRODUCT & COMPANY IDENTIFICATION**

<b>Manufacturer:</b> PIONEER CHEMICAL, INC. 300 Goldsmith Street Greenville, SC 29609	<b>Emergency Phone:</b> (864) 232-4304 <b>Information:</b> (864) 232-4304 <b>Print Date:</b> 7/1/15 <b>Revision Date:</b> 7/1/15
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<b>Product Name:</b> RLHW-61	<b>Generic Name:</b> Coating compound	<b>HMIS Rating</b>
<b>CAS Number:</b> Mixture	<b>Product usage:</b> Coatings	<b>Health:</b> 1
		<b>Flammability:</b> 0
		<b>Physical Hazard:</b> 0
		<b>Protective Equip.:</b> B

**2. HAZARDS IDENTIFICATION**

<b>Pictogram(s):</b>		
<b>Signal Word:</b>	Warning!	
<b>Hazard Statement(s):</b>	<b>H303</b>	May be harmful if swallowed
	<b>H316</b>	Causes mild skin irritation
	<b>H320</b>	Causes eye irritation
<b>Precautionary Statement(s):</b>	<b>P262</b>	Do not get in eyes, on skin, or on clothing
	<b>P264</b>	Wash skin thoroughly after handling
	<b>P270</b>	Do not eat, drink, or smoke when using this product
	<b>P280</b>	Wear protective gloves and eye protection
	<b>P301+P312</b>	IF SWALLOWED: Call a doctor if you feel unwell
	<b>P302+P352</b>	IF ON SKIN: Wash with plenty of water and soap
	<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
	<b>P333+P313</b>	If skin irritation or rash occurs: Get medical advice
	<b>P337+P313</b>	If eye irritation persists get medical attention
<b>Hazards Not Otherwise Classified:</b>		

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

<b>Components</b>	<b>CAS #</b>	<b>%</b>	<b>Hazard Classification(s)</b>
Titanium dioxide	13463-67-7	<20.0%	
Ammonium hydroxide	1336-21-6	<1.0%	

**4. FIRST AID MEASURES**

<b>Eyes:</b>	Flush with large amounts of water for 15 minutes. Get medical attention if symptoms persist.
<b>Inhalation:</b>	Inhalation of product should not occur, but if breathing becomes difficult, remove to fresh air and if symptoms persist, seek medical attention.
<b>Skin:</b>	Wash thoroughly with soap and water. Remove contaminated clothing and launder before re-use. Get medical attention if irritation develops and persists.

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PIONEER CHEMICAL, INC.  
RLHW-61

**5. FIRE FIGHTING MEASURES**

**Extinguishing Media:** Foam, carbon dioxide, water spray, dry chemical  
**Special Fire Fighting Procedures:** Firefighters should wear self-contained breathing apparatus.  
**Unusual Fire & Explosion Hazards:** None known.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal Protection:** Wear appropriate personal protection equipment as described in Section 8.  
**Environmental Protection:** Confine spill. Transfer liquid to containers for disposal. Place absorbents and diking materials in separate containers. Dispose of in accordance with local, state, and federal regulations.

**7. HANDLING AND STORAGE**

**Handling:** Wear appropriate personal protection equipment as described in Section 8. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. Avoid contact with skin, eyes, and clothing.  
**Storage:** Store in a cool dry area. Store between 34 and 110 degrees F.  
**Other Precautions:** None known.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

<u>Component</u>	<u>CAS #</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Titanium dioxide (dust form only)	13463-67-7	15 mg/m <sup>3</sup> 8 h TWA	10 mg/m <sup>3</sup> 8 h TWA
Ammonium hydroxide	1336-21-6	50 ppm TWA	25 ppm TWA

**Respiration Protection:** None normally required.  
**Eye Protection:** Chemical safety goggles with side shields.  
**Glove Protection:** Rubber or neoprene  
**Other Protective Equipment:** Eye wash station and safety shower are suggested.  
**Engineering Controls:** Good general ventilation is acceptable.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	White paste	<b>Vapor Pressure:</b>	Not determined
<b>Odor:</b>	Ammoniacal	<b>Vapor Density:</b>	Not determined
<b>pH:</b>	9.0 -11.0	<b>Relative Density:</b>	Not determined.
<b>Melting/Freezing Point:</b>	32° F	<b>Solubility:</b>	Dispersible
<b>Initial Boiling Point and Boiling Range:</b>	212° F	<b>Auto-Ignition Temp.</b>	N/A
<b>Flash Point:</b>	Non-combustible	<b>Decomposition Temp:</b>	Not determined
<b>Evaporation Rate:</b>	Not determined	<b>Viscosity:</b>	~16,000 cps
<b>Flammability:</b>	Non-combustible	<b>Non-Volatiles:</b>	~61%
<b>Upper/Lower Flammability Limits:</b>	N/A	<b>VOC Content:</b>	Not determined

**10. STABILITY AND REACTIVITY**

**Reactivity:** Not available.  
**Chemical Stability:** Product is stable.  
**Possibility of Hazardous Reactions:** None known.  
**Conditions to Avoid:** None known.  
**Incompatibility (Materials to Avoid):** Strong oxidizing agents.  
**Hazardous Decomposition Products:** Carbon monoxide & carbon dioxide.

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**11. TOXICOLOGY INFORMATION**

**Carcinogenicity – Titanium dioxide – dry(respirable)**

In lifetime inhalation studies rats were exposed for 2 years to respectively 10, 50 and 250 mg/m<sup>3</sup> of respirable TiO<sub>2</sub>. Slight lung fibrosis was observed at 50 and 250 mg/m<sup>3</sup> levels. Microscopic lung tumors were also observed in 13 percent of the rats exposed to 250 mg/m<sup>3</sup>, an exposure level that caused lung overloading and impairment of rat lungs clearance mechanisms. In further studies, these tumors were found to occur only under particle overload conditions in a uniquely sensitive species, the rat, and have little or no relevance for humans. The pulmonary inflammatory response to TiO<sub>2</sub> particles exposure was also found to be much more severe in rats than in other rodent species. In February 2006, IARC has re-evaluated Titanium dioxide as pertaining to Group 2B: "possibly carcinogenic to humans", based upon inadequate evidence in humans and sufficient evidence in experimental animals for the carcinogenicity of titanium dioxide. IARC evaluation guidelines consider the generation of tumors, in 2 different studies within the same animal species, to be adequate criteria for an assessment of sufficient evidence. The conclusions of several epidemiology studies on more than 20000 TiO<sub>2</sub> industry workers in Europe and the USA did not suggest a carcinogenic effect of TiO<sub>2</sub> dust on the human lung. Mortality from other chronic diseases, including other respiratory diseases, was also not associated with exposure to TiO<sub>2</sub> dust. Based upon all available study results, our titanium manufacturer's scientists conclude that titanium dioxide will not cause lung cancer or chronic respiratory diseases in humans at concentrations experienced in the workplace.

<u>Carcinogens</u>	<u>CAS #</u>	<u>NTP</u>	<u>IARC Monographs</u>	<u>OSHA Regulated</u>
Titanium dioxide	13463-67-7	N/A	2B	N/A

**12. ECOLOGICAL INFORMATION**

No ecological information is available.

**13. DISPOSAL CONSIDERATION**

Discarded product is not considered a hazardous waste under RCRA, 40 CFR 261. Please dispose of in accordance with all local, state, and federal regulations.

**14. TRANSPORTATION INFORMATION**

<b>DOT Proper Shipping Name:</b>	Not regulated.	<b>DOT Hazard Class:</b>	N/A
<b>DOT Identification Number:</b>	N/A	<b>DOT Packing Group:</b>	N/A

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PIONEER CHEMICAL, INC.  
*RLHW-61*

**15. REGULATORY INFORMATION**

<b>OSHA Status:</b> Hazardous under Federal OSHA Hazard Communication Standard 29 CFR 1910.1200					
<b>TSCA Status:</b> All ingredients are listed.					
<b>SARA Title III:</b>					
<b>Section 311/312 Hazard Categories:</b>	<b>Immediate (Acute)</b> Yes	<b>Delayed (Chronic)</b> No	<b>Fire</b> No	<b>Reactive</b> No	<b>Sudden Release of Pressure</b> No
				<b><u>CAS Number</u></b>	<b><u>Weight Percent</u></b>
<b>Section 302 Extremely Hazardous Substances:</b>	<b><u>Reportable Components</u></b> None at levels greater than 1% (or 0.1% if carcinogenic)				
<b>Section 313: Toxic Chemicals:</b>	Ammonium hydroxide			1336-21-6	<1.0%
<b>CERCLA Reportable Quantity:</b>	Ammonium hydroxide (RQ: 1000 lbs)			1336-21-6	<1.0%
<b>RCRA Status:</b> If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)					

**16. OTHER INFORMATION**

This bulletin cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions - in addition to those described herein - are required. Any health hazard and safety information contained herein should be passed on to your customers or employees, as the case may be. Pioneer Chemical, Inc. must rely on the user to utilize the information we have supplied to develop work practice guidelines and employee instructional programs for the individual operation.

**DISCLAIMER OF LIABILITY**

The information contained herein is, to the best offer knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist. Final determination of suitability of the chemical is the sole responsibility of the user. Users of any chemical should satisfy themselves that the conditions and methods of use assure that the chemical is used safely. No representations of warranties, either expressed or implied, of merchantability, fitness for a particular purpose of any other nature are made herein with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.

Nothing contained herein is to be construed as a recommendation for use in violation of any patents or of appropriate laws or regulations.

**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 10/11/2004

Reviewed on 10/08/2004

**1 Identification of substance**

- **Product details**
- **Trade name:** SCR 30
- **Article number:** SCR30
- **Application of the substance / the preparation** Endring glue remover
- **Manufacturer/Supplier:**  
Stork Prints B.V.  
Raamstraat 1-3  
P.O. Box 67  
5830 AB Boxmeer  
The Netherlands
- 
- **Tel.** +31485588200  
**Fax.** +31485588363
- 
- **E-mail:** info.storkprints@stork.com  
**Internet:** http://www.storkprints.com
- **Information department:**  
Health and Safety Department  
Emergency telephone number: +31485599194  
Emergency fax number: +31485574148

**2 Composition/Data on components**

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

• **Dangerous components:**

75-09-2	dichloromethane	 Xn; R 40	78-82%
67-56-1	methanol	 T,  F; R 11-23/24/25-39/23/24/25	17-19%
64-18-6	formic acid	 C; R 35	1.8-2.0%

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

**3 Hazards identification**

• **Hazard description:**



T Toxic  
F Highly flammable

• **Information pertaining to particular dangers for man and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

- R 11 Highly flammable.
- R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
- R 36/38 Irritating to eyes and skin.
- R 39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
- R 40 Limited evidence of a carcinogenic effect.

• **Classification system:**

The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

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**NFPA ratings (scale 0 - 4)**



Health = 1  
Fire = 3  
Reactivity = 0

**HMIS-ratings (scale 0 - 4)**



Health = \*1  
Fire = 3  
Reactivity = 0

**4 First aid measures**

- **General information:**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.  
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** Immediately call a doctor.

**5 Fire fighting measures**

- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards caused by the material, its products of combustion or resulting gases:**  
In certain fire conditions, traces of other toxic gases cannot be excluded.
- **Protective equipment:**  
Wear fully protective suit.  
Mouth respiratory protective device.

**6 Accidental release measures**

- **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.

**7 Handling and storage**

- **Handling:**
- **Information for safe handling:**  
Keep away from heat and direct sunlight.  
Store in cool, dry place in tightly closed receptacles.  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.

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Keep respiratory protective device available.

- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
Store only in the original receptacle.  
Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.

**8 Exposure controls and personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.

- **Components with limit values that require monitoring at the workplace:**

**75-09-2 dichloromethane**

PEL Short-term value: 125 ppm  
Long-term value: 25 ppm  
see 29 CFR 1910.1052  
REL Lowest feasible conc.  
TLV 174 mg/m<sup>3</sup>, 50 ppm

**67-56-1 methanol**

PEL 260 mg/m<sup>3</sup>, 200 ppm  
REL Short-term value: 325 mg/m<sup>3</sup>, 250 ppm  
Long-term value: 260 mg/m<sup>3</sup>, 200 ppm  
Skin  
TLV Short-term value: 328 mg/m<sup>3</sup>, 250 ppm  
Long-term value: 262 mg/m<sup>3</sup>, 200 ppm  
Skin; BEI

**64-18-6 formic acid**

PEL 9 mg/m<sup>3</sup>, 5 ppm  
REL 9 mg/m<sup>3</sup>, 5 ppm  
TLV Short-term value: 19 mg/m<sup>3</sup>, 10 ppm  
Long-term value: 9.4 mg/m<sup>3</sup>, 5 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.
- **Breathing equipment:**  
Use suitable respiratory protective device in case of insufficient ventilation.  
Filter AX
- **Protection of hands:**



Protective gloves

Solvent resistant gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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*Butyl rubber, BR*

*Neoprene gloves*

**· Penetration time of glove material**

*The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.*

**· Eye protection:**



*Tightly sealed goggles*

**· Body protection: Protective work clothing**

**9 Physical and chemical properties**

**· General Information**

<b>Form:</b>	<i>Fluid</i>
<b>Color:</b>	<i>Red</i>
<b>Odor:</b>	<i>Characteristic</i>

**· Change in condition**

**Melting point/Melting range:** *Undetermined.*  
**Boiling point/Boiling range:** *40°C (104°F)*

**· Flash point:** *15°C (59°F)*

**· Ignition temperature:** *455°C (851°F)*

**· Auto igniting:** *Product is not selfigniting.*

**· Danger of explosion:** *Product is not explosive. However, formation of explosive air/vapor mixtures are possible.*

**· Explosion limits:**

<b>Lower:</b>	<i>5.5 Vol %</i>
<b>Upper:</b>	<i>44.0 Vol %</i>

**· Vapor pressure at 20°C (68°F):** *453 hPa (340 mm Hg)*

**· Density at 20°C (68°F):** *1.175 g/cm<sup>3</sup>*

**· Solubility in / Miscibility with Water:**

*Not miscible or difficult to mix.*

**· pH-value at 20°C (68°F):** *2.3 - 3.6*

**· Solvent content:**

<b>Organic solvents:</b>	<i>98.0 %</i>
<b>Swiss-VOCV:</b>	<i>1152 g/l = 98.0 %</i>

**10 Stability and reactivity**

**· Thermal decomposition / conditions to be avoided:** *No decomposition if used according to specifications.*

**· Dangerous reactions** *No dangerous reactions known.*

**· Dangerous products of decomposition:** *No dangerous decomposition products known.*

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## 11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

Oral	LD50	2000 mg/kg (rat) Calculated for the mixture
------	------	--

**75-09-2 dichloromethane**

Oral	LD50	1600 mg/kg (rat)
Inhalative	LC50/4 h	88 mg/l (rat)

**67-56-1 methanol**

Oral	LD50	5628 mg/kg (rat)
Dermal	LD50	15800 mg/kg (rabbit)

· **Primary irritant effect:**

· **on the skin:** Irritant to skin and mucous membranes.

· **on the eye:** Irritating effect.

· **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

## 12 Ecological information

· **Ecotoxicological effects:**

· **Aquatic toxicity:**

COD	400000 mg/l (6633)
-----	--------------------

**75-09-2 dichloromethane**

LC50/fish (48 hrs)	330 mg/l (Fish)
--------------------	-----------------

**67-56-1 methanol**

48h EC50 Daphnia mag	100 mg/l (daphnia)
----------------------	--------------------

· **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

## 13 Disposal considerations

· **Product:**

· **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

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**14 Transport information**

**· DOT regulations:**



- Hazard class: 3
- Identification number: UN1993
- Packing group: II
- Proper shipping name (technical name): FLAMMABLE LIQUID, N.O.S. (METHANOL, DICHLOROMETHANE)
- Label: 3

**· Land transport ADR/RID (cross-border):**



- ADR/RID class: 3 Flammable liquids
- Danger code (Kemler): 33
- UN-Number: 1993
- Packaging group: II
- Description of goods: 1993 FLAMMABLE LIQUID, N.O.S. (METHANOL, DICHLOROMETHANE)

**· Maritime transport IMDG:**



- IMDG Class: 3
- UN Number: 1993
- Label: 3
- Packaging group: II
- EMS Number: F-E,S-E
- Marine pollutant: No
- Proper shipping name: FLAMMABLE LIQUID, N.O.S. (METHANOL, DICHLOROMETHANE)

**· Air transport ICAO-TI and IATA-DGR:**



- ICAO/IATA Class: 3
- UN/ID Number: 1993
- Label: 3
- Packaging group: II
- Proper shipping name: FLAMMABLE LIQUID, N.O.S. (METHANOL, DICHLOROMETHANE)

**15 Regulations**

**· Sara**

**· Section 355 (extremely hazardous substances):**

None of the ingredient is listed

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· <b>Section 313 (Specific toxic chemical listings):</b>		
All ingredients are listed.		
· <b>TSCA (Toxic Substances Control Act):</b>		
All ingredients are listed.		
· <b>Proposition 65</b>		
· <b>Chemicals known to cause cancer:</b>		
75-09-2	dichloromethane	
· <b>Chemicals known to cause reproductive toxicity:</b>		
None of the ingredients is listed.		
· <b>Carcinogenity categories</b>		
· <b>EPA (Environmental Protection Agency)</b>		
75-09-2	dichloromethane	B2
· <b>IARC (International Agency for Research on Cancer)</b>		
75-09-2	dichloromethane	2B
· <b>NTP (National Toxicology Program)</b>		
75-09-2	dichloromethane	R
· <b>TLV (Threshold Limit Value established by ACGIH)</b>		
75-09-2	dichloromethane	A3
· <b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>		
75-09-2	dichloromethane	
· <b>OSHA-Ca (Occupational Safety &amp; Health Administration)</b>		
75-09-2	dichloromethane	

- **Product related hazard informations:**  
The product has been classified and marked in accordance with directives on hazardous materials.
- **Hazard symbols:**  
T Toxic  
F Highly flammable
- **Hazard-determining components of labelling:**  
methanol  
dichloromethane
- **Risk phrases:**  
11 Highly flammable.  
20/21/22 Harmful by inhalation, in contact with skin and if swallowed.  
36/38 Irritating to eyes and skin.  
39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.  
40 Limited evidence of a carcinogenic effect.
- **Safety phrases:**  
36/37 Wear suitable protective clothing and gloves.  
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
53 Avoid exposure - obtain special instructions before use.
- **National regulations:**
- **Water hazard class: Water hazard class 2 (Self-assessment): hazardous for water.**

**16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any

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- *Department issuing MSDS: Health and Safety Department*
- *Contact: Mr J. Bongers H&S department*

USA

# Material Safety Data Sheet

**BYK-024**

Version 4

Revision Date 02/22/2013

Print Date 02/22/2013

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : BYK-024  
Product Use Description : Defoamer  
  
Company : BYK USA Inc.  
524 South Cherry Street  
Wallingford CT 06492  
  
Prepared by : J.Nole, Safety; M.McCutcheon, Regulatory  
Telephone : (203) 265-2086  
Visit our web site : [www.byk.com](http://www.byk.com)  
E-mail address : [ehs.byk.usa@altana.com](mailto:ehs.byk.usa@altana.com)  
Emergency telephone number : CHEMTREC 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

### Emergency Overview

Form : dispersion  
liquid  
Colour : gray - light yellow  
cloudy  
Odour : not significant

### OSHA Regulatory Status

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for other users of this product.

### Potential Health Effects

Eyes : Contact may cause irritation.  
Skin : Contact may cause irritation.  
Ingestion : Ingestion may irritate the digestive tract.  
Inhalation : None expected.  
Chronic Exposure : No known chronic health effects.  
Aggravated Medical Condition : None expected  
Primary Routes of Entry : Skin contact  
Skin absorption  
Inhalation  
Eyes  
Ingestion

# Material Safety Data Sheet

**BYK-024**

Version 4

Revision Date 02/22/2013

Print Date 02/22/2013

## **Carcinogenicity:**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

## **Environmental Effects**

Environmental Effects : No information available.

## **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

### **Chemical nature**

Mixture of foam destroying polysiloxanes and hydrophobic solids in polyglycol

### **Hazardous components**

No ingredients are hazardous according to OSHA criteria.

## **SECTION 4. FIRST AID MEASURES**

### **First aid procedures**

Inhalation : Remove to fresh air. Administer artificial respiration if necessary. Get medical aid as soon as possible.

Skin contact : Remove contaminated clothing. Wash thoroughly with soap and water.

Eye contact : Immediately flush with plenty of water for at least 20 minutes. Get medical aid.

Ingestion : Do not induce vomiting; aspiration hazard. Dilute with 1-2 glasses of water. Get medical aid. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into lungs.

### **Notes to physician**

Risks : No information available.

# Material Safety Data Sheet

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## SECTION 5. FIREFIGHTING MEASURES

### Flammable properties

- Flash point : > 100 °C (> 212.00 °F)  
Method: 49 (Pensky-Martens)
- Ignition temperature : > 200 °C (> 392 °F)  
Method: calculated
- Suitable extinguishing media : Foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical
- Unsuitable extinguishing media : No information available.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
- Specific hazards during firefighting : Cool closed containers exposed to fire with water spray.  
Will not explode on mechanical impact.
- Hazardous decomposition products due to incomplete combustion. : Carbon oxides  
nitrogen oxides (NO<sub>x</sub>)  
silicone compounds  
formaldehyde
- Further information : Keep away from heat and sources of ignition.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Eliminate all sources of ignition. Wear protective equipment: safety glasses, gloves and an appropriate respirator.
- Environmental precautions : Prevent spilled material from entering the ground, water and/or air by using appropriate containment methods.
- Methods for containment : Stop leak. Dike and contain spill.
- Methods for cleaning up : Pump into salvage tanks and/or absorb with suitable material.  
Use sparkless shovels to remove material.
- Additional advice : No further information is available.

## SECTION 7. HANDLING AND STORAGE

### Handling

- Handling : Avoid contact with skin and eyes.

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Handle as an industrial chemical.  
Keep container tightly closed.  
Keep away from oxidizing agents.

## Storage

Advice on common storage : Keep in a dry, cool and well-ventilated place.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines

Contains no substances with occupational exposure limit values.

### Engineering measures

Engineering measures : Use with local exhaust ventilation.

### Personal protective equipment

Eye protection : Safety Glasses

Hand protection : Protective gloves

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : Not necessary.

Hygiene measures : Clean long legged, long sleeved work clothes.  
Handle in accordance with good industrial hygiene and safety practice.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form : dispersion  
liquid

Colour : gray - light yellow  
cloudy

Odour : not significant

Odor Threshold : no data available

Flash point : > 100 °C (> 212.00 °F)  
Method: 49 (Pensky-Martens)

Ignition temperature : > 200 °C (> 392 °F)  
Method: calculated

Lower explosion limit : no data available

Upper explosion limit : no data available

pH : no data available

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Freezing point	: no data available
Boiling point	: no data available
Vapour pressure	: < 1.000000 hPa at 20 °C (68.00 °F) Method: calculated
Evaporation rate	: no data available
Density	: 1.0050 g/cm3 at 20 °C (68.00 °F) Method: DIN EN ISO 2811-3
Bulk density	: not applicable
Water solubility	: immiscible
Partition coefficient: n-octanol/water	: no data available
Viscosity, kinematic	: at 20 °C (68.00 °F) no data available  at 40 °C (104.00 °F) no data available
Relative vapor density	: no data available

## SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	: None known.
Materials to avoid	: Strong oxidizing agents
Hazardous decomposition products	: None expected
Chemical stability	: Stable; polymerization will not occur

## SECTION 11. TOXICOLOGICAL INFORMATION

Skin irritation (Product)	: no data available
Eye irritation (Product)	: no data available
Sensitisation (Product)	: no data available

## SECTION 12. ECOLOGICAL INFORMATION

Additional ecological information (Product)	: There is no data available for this product.
---	--

## SECTION 13. DISPOSAL CONSIDERATIONS

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Further information : Dispose of in accordance with applicable local/municipal, state/provincial and federal regulations.

**SECTION 14. TRANSPORT INFORMATION**

Container sizes: 55 gallon drums, 5 or 6-gallon pails, 2oz/16oz samples)

**DOT** Not dangerous goods

**IATA** Not dangerous goods

**IMDG\_US** Not dangerous goods

**SECTION 15. REGULATORY INFORMATION**

**HMIS Classification** : Health hazard: 1  
Flammability: 1  
Reactivity: 0  
PPI:B

**National Fire Protection Association (NFPA) Class** : III B

**Emergency Planning Community Right-To-Know (EPCRA)**

**SARA 302 Components** : Not applicable

If listed below, this product contains toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

**SARA 313 Components** Not applicable %

**SARA 311/312 Hazards** : No SARA Hazards

**Toxic Substances Control Act (TSCA)**

**TSCA Status** : We certify that all of the components of this product are either listed on the TSCA Inventory or are not subject to the notification requirements per 40 CFR 720 30(h).

**Section 4 / 12(b)** : Not applicable

**Clean Air Act & Related Information**

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**Non-volatile (Wt)** : 96 - 100 %  
Method: 51 (60min/105°C/ 1g)  
DIN EN ISO 3251

**Ozone Depleting Substances** : Not applicable.

Non-volatile information is not a specification.

### Hazardous Air Pollutants

If not listed above, this product does not contain HAPs at 1% or 0.1% or greater. Refer to Section 3 for HAP weight percentage.

### Resource Conservation and Recovery Act

**EPA Hazardous Waste Code(s)** : Not applicable.

### State Laws

**Massachusetts Right To Know Components** : No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components** : Polypropylene glycol 25322-69-4  
-  
-

**New Jersey Right To Know Components** : Polypropylene glycol 25322-69-4  
-  
-  
-

Siloxane

**New Jersey Trade Secret Registry Number for the product (NJ TSRN)** : 800963-5024

**California Prop. 65 Components** : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Does not contain heavy metals (according to formulation) except  
CONEG Heavy Metal: We certify that this product does not contain Lead, Mercury, Cadmium or hexavalent chromium in the sum concentration of 100 ppm by weight or greater.

### Canadian Environmental Protection Act

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Domestic Substances List  
**DSL Status**

: We certify that all of the components of this product are listed on the DSL.

**WHMIS Classification**

: Not controlled

**SECTION 16. OTHER INFORMATION**

**Further Information**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



The Shepherd Color Company  
We Brighten Lives

# SAFETY DATA SHEET

## 1. Identification

**Product identifier** BLACK 30C965

**Other means of identification**

**Product Code** BK0030C965

**Synonym(s)** C.I. Pigment Black 28 \* CI Constitution #77428 \* CPMA # 13-38-9

**Recommended use** Colorant

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

**Manufacturer information** THE SHEPHERD COLOR COMPANY  
4539 Dues Drive  
Cincinnati, OH 45246  
Phone: +1 513-874-0714  
SHEPHERD COLOR INTERNATIONAL  
Serskampsteenweg 135A  
B-9230 Wetteren, Belgium  
Phone: +32-9-366-1111  
SHEPHERD COLOR INTERNATIONAL  
Kingston Trade Centre  
100 Cochranes Road  
Moorabbin, Victoria 3189 Australia  
Phone: +61-3-9532-5260  
SHEPHERD COLOR INTERNATIONAL  
Odakyu Dai-ichi Seimei Building 4-F  
Shinjuku-ku  
Tokyo, Japan 163-0704  
Phone: +813-3344-3010  
EMERGENCY INFORMATION: CHEMTREC - Domestic 1-800-424-9300  
CHEMTREC - International +1 703 527 3887

## 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards** Not classified.

**Environmental hazards** Not classified.

**OSHA defined hazards** Not classified.

**Label elements**

**Hazard symbol** None.

**Signal word** Not assigned.

**Hazard statement** Not assigned.

**Precautionary statement**

**Prevention** Not assigned.

**Response** Not assigned.

**Storage** Not assigned.

**Disposal** Not assigned.

**Hazard(s) not otherwise classified (HNOC)** Not assigned.

**Supplemental information** Not assigned.

**Substance(s) formed under the condition of use** Not applicable.

## 3. Composition/information on ingredients

### Substances

Chemical name	Common name and synonyms	CAS number	%
COPPER CHROMITE BLACK SPINEL		68186-91-4*	100

**Composition comments** This product is the result of high temperature calcination of the component substances. Due to its unique crystalline structure the properties of this finished pigment do not necessarily reflect the properties of the component metals or oxides.

#### 4. First-aid measures

**Inhalation** Remove to fresh air. If the affected person is not breathing, apply artificial respiration. If breathing is difficult, give oxygen. Call a physician if symptoms develop or persist.

**Skin contact** Wash the skin immediately with soap and water. Get medical attention if irritation develops or persists.

**Eye contact** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.

**Ingestion** Never give anything by mouth to an unconscious person. If swallowed, do NOT induce vomiting. Give several glasses of water to dilute contents of stomach and call a physician.

**Most important symptoms/effects, acute and delayed** Contact with eyes may cause irritation. Inhalation of dusts may cause respiratory irritation. Contact with skin may cause irritation.

**General information** The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance. No special protective equipment required. Where there is a potential for eye exposure to this substance, an eye wash fountain should be provided within the immediate work area for emergency use.

#### 5. Fire-fighting measures

**Suitable extinguishing media** Use extinguishing agent suitable for type of surrounding fire.

**Unsuitable extinguishing media** Not applicable.

**Specific hazards arising from the chemical** None known.

**Special protective equipment and precautions for firefighters** Use protective equipment appropriate for surrounding materials.

**Fire-fighting equipment/instructions** Not a fire hazard.

**Specific methods** Not established.

**General fire hazards** This product is not flammable.

#### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust from the spilled material.

**Methods and materials for containment and cleaning up** Avoid dust formation. Following product recovery, flush area with water. Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into closed container.

**Environmental precautions** Do not discharge into drains, water courses or onto the ground.

#### 7. Handling and storage

**Precautions for safe handling** Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. Keep formation of airborne dusts to a minimum. When using, do not eat, drink or smoke. Wash hands thoroughly after handling.

**Conditions for safe storage, including any incompatibilities** Store in closed original container in a dry place. Room temperature - normal conditions. Use care in handling/storage. Keep in properly labelled containers.

#### 8. Exposure controls/personal protection

##### Occupational exposure limits

##### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Metals	Type	Value	Percent	Form
CHROMIUM (III) AND COMPOUNDS	PEL	1 mg/m <sup>3</sup>	30 - 50%	(as Cr)
COPPER DUSTS AND MISTS	PEL	1 mg/m <sup>3</sup>	15 - 30%	(as Cu) Dust and mist.
		0.1 mg/m <sup>3</sup>	15 - 30%	(as Cu) Fume.

##### US. ACGIH Threshold Limit Values

Metals	Type	Value	Percent	Form
CHROMIUM (III) AND COMPOUNDS	TWA	0.5 mg/m <sup>3</sup>	30 - 50%	(as Cr)
COPPER DUSTS AND MISTS	TWA	1 mg/m <sup>3</sup>	15 - 30%	(as Cu) Dust and mist.
		0.2 mg/m <sup>3</sup>	15 - 30%	(as Cu) Fume.

US. NIOSH: Pocket Guide to Chemical Hazards

Metals	Type	Value	Percent	Form
CHROMIUM (III) AND COMPOUNDS	TWA	0.5 mg/m <sup>3</sup>	30 - 50%	(as Cr)
COPPER DUSTS AND MISTS	TWA	1 mg/m <sup>3</sup>	15 - 30%	(as Cu) Dust and mist.

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Appropriate engineering controls</b>	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Safety glasses with side-shields.
<b>Skin protection</b>	
<b>Hand protection</b>	Rubber or plastic gloves. PVC disposable gloves. Use impervious gloves.
<b>Other</b>	Normal work clothing (long sleeved shirts and long pants) is recommended.
<b>Respiratory protection</b>	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a particulate filter respirator for particulate concentrations exceeding the Occupational Exposure Limit. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever work place conditions warrant a respirator's use. If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection. MSHA/NIOSH respirators approved for dusts TC-21C or NIOSH approved cartridges for Non-oil aerosols, N95, N99, N100 (42 CFR 84).
<b>Thermal hazards</b>	Not applicable.
<b>General hygiene considerations</b>	Use personal protective equipment as required. Handle in accordance with good industrial hygiene and safety practice.

**9. Physical and chemical properties**

<b>Appearance</b>	Powder.
<b>Physical state</b>	Solid.
<b>Form</b>	Powder.
<b>Color</b>	black
<b>Odor</b>	None.
<b>Odor threshold</b>	Not applicable.
<b>pH</b>	4.8 (Shepherd Color Test Method 101)
<b>Melting point/freezing point</b>	Not applicable.
<b>Initial boiling point and boiling range</b>	Not applicable.
<b>Flash point</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not applicable.
<b>Flammability limit - upper (%)</b>	Not applicable.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	Not applicable.
<b>Vapor density</b>	Not applicable.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Negligible
<b>Partition coefficient (n-octanol/water)</b>	Not applicable.
<b>Auto-ignition temperature</b>	Not applicable.
<b>Decomposition temperature</b>	Not applicable.
<b>Viscosity</b>	Not available.

**Other information**  
**Specific gravity** 5.4 (Shepherd Color Test Method 312)  
**Loose Packing Density** Not available.

**10. Stability and reactivity**

**Reactivity** Not available.  
**Chemical stability** Stable under normal temperature conditions and recommended use.  
**Possibility of hazardous reactions** Hazardous polymerization does not occur.  
**Conditions to avoid** None known.  
**Incompatible materials** None known.  
**Hazardous decomposition products** No hazardous decomposition products are known.

**11. Toxicological information**

**Information on likely routes of exposure**

**Ingestion** No adverse effects due to ingestion are expected.  
**Inhalation** May cause irritation to the respiratory system.  
**Skin contact** Contact with skin may cause irritation.  
**Eye contact** May irritate eyes.

**Symptoms related to the physical, chemical and toxicological characteristics** Product dust may be irritating to eyes, skin and respiratory system.

**Information on toxicological effects**

**Acute toxicity** May cause respiratory irritation. May be slightly irritating to skin and eyes.

Components	Species	Test Results
------------	---------	--------------

COPPER CHROMITE BLACK SPINEL (CAS 68186-91-4\*)

**Acute**

*Inhalation*

LD50	Rat	> 11.1 mg/Shepherd Color Test Data
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*Oral*

LD50	Rat	> 10000 mg/kgShepherd Color Test Data
------	-----	---------------------------------------

**Skin corrosion/irritation** Contact with skin may cause irritation.

**Serious eye damage/eye irritation** May irritate eyes.

**Respiratory or skin sensitization**

**Respiratory sensitization** No data available.

**Skin sensitization** No data available.

**Germ cell mutagenicity** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity**

**IARC Monographs. Overall Evaluation of Carcinogenicity**

CHROMIUM COMPOUND (CAS 7440-47-3) 3 Not classifiable as to carcinogenicity to humans.

**Reproductive toxicity** No data available.

**Specific target organ toxicity - single exposure** No data available.

**Specific target organ toxicity - repeated exposure** No data available.

**Aspiration hazard** No data available.

**Chronic effects** No data available.

**Further information** Repeated overexposure to this compound may cause eye, skin and respiratory tract irritation. Some compounds of the metals used in the manufacturing of this material have demonstrated various toxic properties. However, there is no evidence that this material has these toxic characteristics. This product is the result of high temperature calcination of the component substances. Due to its unique crystalline structure the properties of this finished material do not necessarily reflect the properties of the component metals or oxides.

## 12. Ecological information

**Ecotoxicity** Not expected to be harmful to aquatic organisms.

Constituents		Species	Test Results
CHROMIUM COMPOUND (CAS 7440-47-3)			
<b>Aquatic</b>			
Crustacea	EC50	Water flea ( <i>Daphnia magna</i> )	0.01 - 0.7 mg/l, 48 hours
Fish	LC50	Carp ( <i>Cyprinus carpio</i> )	14.3 mg/l, 96 hours
COPPER COMPOUNDS (CAS 7440-50-8)			
<b>Aquatic</b>			
Crustacea	EC50	Water flea ( <i>Daphnia magna</i> )	0.036 mg/l, 48 hours
Fish	LC50	Fathead minnow ( <i>Pimephales promelas</i> )	0.0319 - 0.0544 mg/l, 96 hours

**Persistence and degradability** The product is not expected to be biodegradable.  
**Bioaccumulative potential** The product does not contain any substances expected to be bioaccumulating.  
**Mobility in soil** No data available.  
**Mobility in general** No data available.  
**Other adverse effects** None known.

## 13. Disposal considerations

**Disposal instructions** All wastes must be handled in accordance with local, state and federal regulations.  
**Hazardous waste code** Not regulated.  
**Waste from residues / unused products** Dispose of in accordance with local regulations.  
**Contaminated packaging** Since emptied containers retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

### DOT

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not available.

## 15. Regulatory information

### US federal regulations

#### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

#### CERCLA Hazardous Substance List (40 CFR 302.4)

CHROMIUM COMPOUND (CAS 7440-47-3) LISTED

COPPER COMPOUNDS (CAS 7440-50-8) LISTED

#### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories** Immediate Hazard - Yes  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance** No

**SARA 311/312 Hazardous chemical** Yes

#### SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
COPPER COMPOUNDS	7440-50-8	100
CHROMIUM COMPOUND	7440-47-3	100

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

CHROMIUM COMPOUND (CAS 7440-47-3)

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations**

**US. Massachusetts RTK - Substance List**

CHROMIUM COMPOUND (CAS 7440-47-3)

COPPER COMPOUNDS (CAS 7440-50-8)

**US. New Jersey Worker and Community Right-to-Know Act**

CHROMIUM COMPOUND (CAS 7440-47-3) 500 LBS

COPPER COMPOUNDS (CAS 7440-50-8) 500 LBS

**US. Pennsylvania RTK - Hazardous Substances**

CHROMIUM COMPOUND (CAS 7440-47-3)

COPPER COMPOUNDS (CAS 7440-50-8)

**US. Rhode Island RTK**

CHROMIUM COMPOUND (CAS 7440-47-3)

COPPER COMPOUNDS (CAS 7440-50-8)

**US. California Proposition 65**

Not Listed.

**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision**

**Issue date** 09-20-2013

**Revision date** 10-28-2014

**Version #** 02

**Disclaimer** The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification unless specified in the text. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process,

**Revision Information** Composition / Information on Ingredients: Ingredients  
Physical & Chemical Properties: Multiple Properties  
Toxicological Information: Toxicological Data  
Regulatory Information: United States  
Other information, including date of preparation or last revision: Disclaimer  
HazReg Data: North America



Printing date 04/30/2013

Edition n° 6

Reviewed on 04/30/2013

### 1 Identification of the substance/mixture and of the company/undertaking

- \* **Product identifier**
- \* **Trade name: STOKAL SR**
- \* **Chemical composition: Sulphosuccinamide, sodium salt aqueous solution**
- \* **Application of the substance / the preparation Textile auxiliary**

\* **Details of the supplier of the safety data sheet**

\* **Manufacturer/Supplier:**  
BOZZETTO, Inc  
2507 South Elm Eugene St.  
Greensboro, NC 27406

Phone: 336-333-3526 - Toll Free: 866-866-8398  
Fax: 336-333-7964

productsafety@bozzetto.it

\* **Emergency telephone number: Phone No : 1-800-535-5059**

### 2 Composition/information on ingredients

- \* **Chemical characterization: Mixtures**
- \* **Description: Mixture of the substances listed below with nonhazardous additions.**

\* **Dangerous components:**

68988-69-2	Sodium alkyl-sulfosuccinamate	25-50%
------------	-------------------------------	--------

\* **Additional information: The complete text of the "R" phrases and of the "H" declarations is reported into section no. 16**

### 3 Hazards identification

- \* **Classification of the substance or mixture**
- \* **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Irritant

Irritating to eyes and skin.

- \* **Information concerning particular hazards for human and environment:**  
The product has to be labelled due to the calculation procedure of international guidelines.

-----  
\* **Label elements**

\* **Labelling according to EU guidelines:**

Observe the general safety regulations when handling chemicals.  
The product has been classified and marked in accordance with directives on hazardous materials.

\* **Risk phrases:**  
Irritating to eyes and skin.

\* **Safety phrases:**  
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

(Contd. on page 2)

USA

Printing date 04/30/2013

Edition n° 6

Reviewed on 04/30/2013

Trade name: STOKAL SR

(Contd. of page 1)

\* **Hazard description:**

\* **WHMIS-symbols:**

D2B - Toxic material causing other toxic effects



\* **Classification system:**

\* **NFPA ratings (scale 0 - 4)**



Health = 1  
Fire = 0  
Reactivity = 0

\* **HMIS-ratings (scale 0 - 4)**



Health = 1  
Fire = 0  
Reactivity = 0

\* **Personal Protection Code: C**

#### 4 First aid measures

\* **General information:** No special measures required.

\* **After inhalation:** Supply fresh air, consult doctor in case of complaints.

\* **After skin contact:** Generally the product does not irritate the skin.

\* **After eye contact:** Rinse opened eye for several minutes under running water.

\* **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.

#### 5 Firefighting measures

\* **Suitable extinguishing agents:**

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

\* **Special hazards arising from the substance or mixture** No further relevant information available.

\* **Protective equipment:** No special measures required.

#### 6 Accidental release measures

\* **Personal precautions, protective equipment and emergency procedures** Refer to point 8

\* **Environmental precautions:**

Dilute with plenty of water.

Do not allow undiluted product to enter sewers/surface or ground water

\* **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

(Contd. on page 3)

USA

**1 Identification of the substance/mixture and of the company/undertaking**

- \* **Product Identifier**
- \* Trade name: **STOKAL SR**
- \* **Chemical composition:** Sulphosuccinamide, sodium salt aqueous solution
- \* **Application of the substance / the preparation:** Textile auxiliary
- \* **Details of the supplier of the safety data sheet**
- \* **Manufacturer/Supplier:**  
BOZZETTO, Inc  
2507 South Elm Eugene St.  
Greensboro, NC 27406
- Phone: 336-333-3526 - Toll Free: 866-886-4388  
Fax: 336-333-7984
- productsafety@bozzetto.it
- \* **Emergency telephone number:** Phone No : 1-800-535-5053

**2 Composition/information on ingredients**

- \* **Chemical characterization: Mixtures**
- \* **Description:** Mixture of the substances listed below with nonhazardous additions.
- \* **Dangerous components:**

68985-89-2   Sodium alkyl-sulfosuccinamate	25-50%
--	--------

- \* **Additional information:** The complete text of the "R" phrases and of the "H" declarations is reported into section no. 16

**3 Hazards identification**

- \* **Classification of the substance or mixture**
- \* **Classification according to Directive 67/548/EEC or Directive 1989/45/EEC**  

	Irritant
---	----------

 Irritating to eyes and skin.
- \* **Information concerning particular hazards for human and environment:**  
The product has to be labelled due to the calculation procedure of international guidelines.
- \* **Label elements**
- \* **Labelling according to EU guidelines:**  
Observe the general safety regulations when handling chemicals.  
The product has been classified and marked in accordance with directives on hazardous materials.
- \* **Risk phrases:**  
Irritating to eyes and skin.

Trade name: **STOKAL SR**

(Contid. of page 1)

\* **Hazard description:**  
\* **WHMIS-symbols:**  
D2B - Toxic material causing other toxic effects



\* **Classification system:**  
\* **NFPA ratings (scale 0 - 4)**



\* **HMIS-ratings (scale 0 - 4)**

HEALTH	1
FIRE	0
REACTIVITY	0

\* **Personal Protection Code:** C

**4 First aid measures**

- \* **General information:** No special measures required.
- \* **After inhalation:** Supply fresh air, consult doctor in case of complaints.
- \* **After skin contact:** Generally the product does not irritate the skin.
- \* **After eye contact:** Rinse opened eye for several minutes under running water.
- \* **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a doctor.

**5 Firefighting measures**

- \* **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- \* **Special hazards arising from the substance or mixture** No further relevant information available.
- \* **Protective equipment:** No special measures required.

**6 Accidental release measures**

- \* **Personal precautions, protective equipment and emergency procedures** Refer to point 8
- \* **Environmental precautions:**  
Dilute with plenty of water.

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\* Reference to other sections No dangerous substances are released.

(Contd. of page 2)

### 7 Handling and storage

- \* **Handling:**
- \* Precautions for safe handling No special precautions are necessary if used correctly.
- \* Information about protection against explosions and fires: No special measures required.
- \* **Storage:**
- \* Requirements to be met by storerooms and receptacles: No special requirements.
- \* Information about storage in one common storage facility: Not required.
- \* Further information about storage conditions: Keep receptacle tightly sealed.
- \* Maximum storage temperature: 45 °C
- \* Minimum storage temperature: 10 °C
- \* **Storage class:**
- \* Class according to regulation on flammable liquids: Not applicable
- \* **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- \* **Additional information about design of technical systems:** No further data; see item 7.
- \* **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- \* **Personal protective equipment:**
- \* **General protective and hygienic measures:** The usual precautionary measures for handling chemicals should be followed.
- \* **Breathing equipment:** Not required.
- \* **Protection of hands:**
- \* The glove material has to be impermeable and resistant to the product/ the substance/ the preparation (EN 374).
- \* **Material of gloves**  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- \* **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- \* **Eye protection:** Goggles recommended during refilling.

### 9 Physical and chemical properties

\* **General Information**

\* **Appearance:**

**Form:**

Fluid  
Viscous

Trade name: STOKAL SR

(Contd. of page 3)

- \* **Change in condition**
- Melting point/Melting range: ~ 0 °C (~ 32 °F) (OECD 102)
- Boiling point/Boiling range: > 100 °C (> 212 °F) (OECD 103)
- \* **Flash point:** > 100 °C (> 212 °F) (DIN 51758)
- \* **Auto igniting:** Product does not selfignite.
- \* **Danger of explosion:** Product does not present an explosion hazard.
- \* **Vapor pressure at 20 °C (68 °F):** 23 hPa (17 mm Hg)
- \* **Density at 20 °C (68 °F):** 1.15 g/cm<sup>3</sup> (9.597 lbs/gal) (OECD 109)
- \* **Solubility in / Miscibility with**
- Water: Fully miscible.
- \* **Viscosity:**
- Dynamic at 20 °C (68 °F): ~ 40 mPas (OECD 111)
- \* **Solvent content:**
- Organic solvents: 0.0 %
- \* **Other information**
- No further relevant information available.

### 10 Stability and reactivity

- \* **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- \* **Incompatible materials:** No further relevant information available.
- \* **Hazardous decomposition products:**
- For combustion during a fire:  
  Carbon monoxide and carbon dioxide  
  Sulfur oxides (SO<sub>x</sub>)

### 11 Toxicological information

- \* **Acute toxicity:**
- There is no data available on the product itself; the information given hereafter concern the toxicological behaviour of its components.
- Literature data state LD-50 (oral-rat) > 2000 mg/Kg.

\* LD/LC50 values that are relevant for classification:

Oral	LD-50 (OECD 401)	> 5000 mg/kg (mouse)
	LC-50/96h (OECD 203)	~ 17 mg/l (Brachydanio Rerio)

\* **Primary irritant effect:**

- \* on the skin (Rabbit OECD 404): Irritant to skin and mucous membranes.
- \* on the eye (Rabbit OECD 405): Irritating effect.
- \* Sensitization (Guinea pig OECD 406): No sensitizing effects known.
- \* **Additional toxicological information:**
- The product shows the following dangers according to internally approved calculation methods for preparations:  
  Irritant

Trade name: STOKAL SR

(Contd. of page 4)

\* Carcinogenic categories

\* IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

\* NTP (National Toxicology Program)

None of the ingredients is listed.

**12 Ecological information**

\* Aquatic toxicity:

EC-50/24 h (DEVL 8) ~ 62500 mg/l (Pseudomonas Putida)

LC-50/96h (OECD 203) ~ 20 mg/l (Leuciscus idus)

\* Persistence and degradability > 90 % OECD 301 B

\* Other information:

Surfactants contained in this product assure compliance with European Detergency Regulations (EC/648/2004) for final biodegradability of surfactants in detergents.

Method: Enclosure III, Part A.

\* Behavior in environmental systems:

\* Bioaccumulative potential: No further relevant information available.

\* Additional ecological information:

\* General notes:

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

**13 Disposal considerations**

\* Waste treatment methods

\* Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

\* Waste disposal key: 07 07 99

\* Uncleaned packagings:

\* Recommendation: Disposal must be made according to official regulations.

\* Recommended cleansing agent: Water, if necessary with cleansing agents.

**14 Transport information**

\* UN-Number

\* DOT, ADR, ADN, IMDG, IATA

\* UN proper shipping name

Not applicable

Trade name: STOKAL SR

(Contd. of page 5)	
* Transport hazard class(es)	
* DOT, ADR, ADN, IMDG, IATA	Not applicable
* Class	
* Packing group	Not applicable
* DOT, ADR, IMDG, IATA	
* Environmental hazards:	
* Marine pollutant:	No
* Special precautions for user	Not applicable.
* Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
* Transport/Additional information:	
* ADR	
* Remarks:	Not dangerous goods for transport by road.
* IMDG	
* Remarks:	Not dangerous goods for transport by sea.
* IATA	
* Remarks:	Not dangerous goods for transport by air.

**15 Regulatory information**

* SARA	
* Section 355 (extremely hazardous substances):	
None of the ingredients is listed.	
* Section 313 (Specific toxic chemical listings):	
None of the ingredients is listed.	
* TSCA (Toxic Substances Control Act):	
7732-18-5   Water	
* Proposition 65	
* Chemicals known to cause cancer:	
None of the ingredients is listed.	
* Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	
* Chemicals known to cause reproductive toxicity for males:	
None of the ingredients is listed.	

Trade name: STOKAL SR

(Contd. of page 6)

\* **Carcinogenicity categories**

\* **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

\* **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

\* **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

\* **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

\* **Product related hazard informations:**

Observe the general safety regulations when handling chemicals.

The product has been classified and marked in accordance with directives on hazardous materials.

\* **Hazard symbols:**



Xi Irritant

\* **Risk phrases:**

Irritating to eyes and skin.

\* **Safety phrases:**

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

\* **National regulations:**

\* Classification according to VbF: Not applicable

\* Water hazard class: Water hazard class 2 (Self-assessment); hazardous for water.

\* **FDA**

None of the ingredients is listed.

**16 Other information**

The information contained herein is based on the present state of our knowledge and in compliance with 91/155/EEC Directive (subsequent modifications and integrations) and 1907/2006/EC Regulation. However, we make no guarantees concerning specific product features and shall not establish a legally valid contractual relationship.

It is prohibited to use the product for any purposes different than those specified in the technical sheet and without receiving written instructions. We take no responsibility for unauthorized use.

It is always the responsibility of the user to take all necessary steps in order to assure compliance with all current local, state, and Federal regulations as for hygiene, safety and environment protection.

The information in this MSDS is meant only as a description of the safety requirements of our product. It is not to be considered as a guarantee of the product properties.

\* **Department issuing MSDS:** Headquarter Laboratory.



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**Safety Data Sheet**  
acc. to ISO/DIS 11014



Printing date 04/30/2013

Reviewed on 04/30/2013

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Trade name: **STOKAL SR**

ACGIH "2001 TLV"  
TLV "2000/39/CE"  
R.D. Swisher - Surfactants biodegradation  
ECDIN DB  
KBwS list  
\*\* Data compared to the previous version altered.

(Contd. of page 7)

USA



Prepared according to 29CFR 1910.1200.

1	Chemical Product and Company Identification
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*Lubrizol Advanced Materials, Inc.*  
207 Telegraph Dr  
Gastonia, NC 28056  
Telephone: (704) 915-4118

Product Trade Name            TEF154456EXP.  
Number                            Not applicable for mixtures.  
Synonyms                        None.  
Generic Chemical Name        Mixture.  
Product Type                    Textile Print  
Preparation/Revision Date     30 March 2015  
Transportation Emergency Phone No.  
MSDS No.

2	Hazards Identification
---	------------------------

Appearance                    Opaque white liquid.  
Odor                              Mild  
Principal Hazards              Warning.  
                                      : Harmful if inhaled.  
                                      : Causes allergic skin reaction.  
                                      : May be harmful if swallowed.  
                                      : May cause eye irritation.  
                                      : May cause skin irritation.  
                                      : May cause chronic health effects.

Target Organs:                    Central nervous system Gastrointestinal tract Kidney Liver

See Section 11 for complete health hazard information.

3	Composition/Information on Ingredients
---	--

## Hazardous Ingredients

Comp	CAS No.	Percentage (by wt.)	Carcinogen
Mica	12001-26-2	From 5 to 9.9 percent	N/E
Diethylene glycol	111-46-6	From 5 to 9.9 percent	N/E
Petroleum naphtha	64742-47-8	From 5 to 9.9 percent	N/E
Chloromethyl isothiazolione	55965-84-9	< 0.1%	N/E

(N/E) - Non established

4	First Aid Measures
---	--------------------

Eyes                                Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.  
Skin                                 Wash with plenty of soap and water. Immediately remove contaminated clothing. If skin irritation occurs, get medical attention. Launder contaminated clothing before reuse and discard leather articles saturated with the material.  
Inhalation                         Remove exposed person to fresh air if adverse effects are observed.  
Oral                                  Treat symptomatically. Get medical attention.  
Additional Information         Note to physician: Treat symptomatically.

5	Fire Fighting Measures
---	------------------------

Flash Point                        Not applicable.

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Extinguishing Media  
 Firefighting Procedures  
 Unusual Fire & Explosion Hazards

CO2, dry chemical, foam, water spray, water fog.  
 Recommend wearing self-contained breathing apparatus.  
 Material will not burn. Container may rupture on heating.

6 Accidental Release Measures

**Spill Procedures** Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Ventilate area if spilled in confined space or other poorly ventilated areas. Prevent entry into sewers and waterways. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material.

7 Handling and Storage

**Pumping Temperature** Not determined.  
**Maximum Handling Temperature** Not determined.  
**Handling Procedures** Avoid inhalation of vapors upon opening container. Keep containers closed when not in use. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Launder contaminated clothing before reuse. Empty container contains product residue which may exhibit hazards of product.  
**Maximum Storage Temperature** Not determined.  
**Storage Procedures** Store in well ventilated place.  
**Loading Temperature** Not determined.

8 Exposure Controls/Personal Protection

**Exposure Limits**

Comp	Exposure Guidelines					
	OSHA		ACGIH		Other	
Misc	TWA	STEL	TWA	STEL	TWA	STEL
Petroleum naphtha	N/E	N/E	3 mg/cu. M	N/E	N/E	N/E
N/E	10 mg/cu. M	N/E	N/E	N/E	1200 mg/cu. M (u)	N/E
Chloromethyl isothiazolinone	N/E	N/E	N/E	N/E	0.08 mg/cu. M (u)	0.23 mg/cu. M (u)

- (s) - Skin exposure
- (p) - Proposed limit
- (c) - Ceiling exposure
- (l) - Recommended exposure limit
- (u) - Supplier recommended exposure limit
- (N/E) - None established

**Other Exposure Limits** This product contains formaldehyde, which has an OSHA PEL TWA of 0.75 ppm and ACGIH TLV TWA of 0.3 ppm.  
**Engineering Controls** Use with adequate ventilation.  
**Gloves Procedures** Use good industrial hygienic practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.  
**Eye Protection** Safety Glasses.  
**Respiratory Protection** Use NIOSH/MSHA approved full face respirator with a combination organic vapor and high efficiency filter cartridge if the recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.  
**Clothing Recommendation** Wear a chemically protective apron when contact with material may occur. Use chemically protective boots when necessary to avoid contaminating shoes. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction.

9 Physical and Chemical Properties

**Flash Point** Not applicable.  
**Upper Flammable Limit** Not determined.  
**Lower Flammable Limit** Not determined.  
**Autoignition Point** Not determined.  
**Explosion Data** Material does not have explosive properties.  
**Vapor Pressure** Not determined.  
**pH** Not determined.  
**Specific Gravity** 1.05 (20 °C)  
**Bulk Density** Not determined.  
**Water Solubility** Dispersible.  
**Percent Solid** Not determined.  
**Percent Volatile** Not determined.  
**Volatile Organic Compound** Not determined.

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Vapor Density	Not determined.
Evaporation Rate	Not determined.
Odor	Mild
Appearance	Opaque white liquid.
Viscosity	Not determined.
Odor Threshold	Not determined.
Boiling Point	Not determined.
Pour Point Temperature	Not determined.
Melting / Freezing Point	Not determined.

*The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.*

10 **Stability and Reactivity**

Stability	Material is normally stable at moderately elevated temperatures and pressures.
Decomposition Temperature	Not determined.
Incompatibility	Oxidizing agents.
Polymerization	Will not occur.
Thermal Decomposition	Thermal decomposition and combustion are not expected to occur except under extreme conditions.
Conditions to Avoid	Not determined.

11 **Toxicological Information**

**- ACUTE EXPOSURE -**

Eye Irritation	May cause eye irritation. Does not meet Canadian D2B or EU R36 criteria. Based on data from components or similar materials. Vapors formed from heating may cause eye irritation.
Skin Irritation	May cause mild skin irritation. Does not meet Canadian D2B or EU R38 criteria. Based on data from components or similar materials. Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, and cracking of the skin.
Respiratory Irritation	If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract. Based on data from components or similar materials. Exposure to a high concentration of vapor or mist may be irritating. Breathing of vapor or mist may aggravate asthma and inflammatory or fibrotic pulmonary disease.
Dermal Toxicity	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials. Not expected to be rapidly absorbed through skin. Based on actual data.
Inhalation Toxicity	High concentrations may cause headaches, dizziness, nausea, behavioral changes, weakness, drowsiness and stupor.
Oral Toxicity	The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain. Ingestion may cause CNS depression. The oral toxicity of diethylene glycol is expected to be moderate in humans even though tests with animals show a lower degree of toxicity.
Dermal Sensitization	Skin sensitizer. Based on data from similar materials.
Inhalation Sensitization	Prolonged or repeated exposure at concentrations above the exposure limits may cause respiratory tract and lung sensitization.

**- CHRONIC EXPOSURE -**

Chronic Toxicity	Repeated overexposure to petroleum naphtha can cause nervous system damage. Prolonged and repeated overexposure to diethylene glycol may cause severe kidney, liver and gastrointestinal effects.
Carcinogenicity	This product contains mineral oils which are considered to be severely refined and not considered to be carcinogenic under IARC.
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Reproductive Toxicity	No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
Teratogenicity	No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

**- ADDITIONAL INFORMATION -**

Other	Prolonged or repeated exposure to airborne dust may aggravate an existing respiratory condition. Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons with sensitive airways (e.g., asthmatics) may react to vapors.
-------	---

12 **Ecological Information**

**- ENVIRONMENTAL TOXICITY -**

Freshwater Fish Toxicity	Not determined.
Freshwater Invertebrates Toxicity	Not determined.
Algal Inhibition	Not determined.

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Saltwater Fish Toxicity	Not determined.
Saltwater Invertebrates Toxicity	Not determined.
Bacteria Toxicity	Not determined.
Miscellaneous Toxicity	Not determined.

- ENVIRONMENTAL FATE -

Biodegradation	Adequate data is not available to estimate the biodegradation potential of this material.
Bioaccumulation	Less than 1.0% of the components potentially bioconcentrate, based on octanol/water coefficients.
Soil Mobility	Not determined.

13	Disposal Considerations
----	-------------------------

Waste Disposal This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14	Transport Information
----	-----------------------

ICAO/IATA I	Not regulated.
ICAO/IATA II	Not regulated.
IMDG	Not regulated.
IMDG EMS Fire	Not applicable.
IMDG EMS Spill	Not applicable.
IMDG MFAG	Not applicable.
MARPOL Annex II	Not determined.
USCG Compatibility	Not determined.
U.S. DOT Bulk	Not regulated.
DOT NAERG	Not applicable.
U.S. DOT (Intermediate)	Not regulated.
U.S. DOT Intermediate NAERG	Not applicable.
U.S. DOT Non-Bulk	Not regulated.
U.S. DOT Non-Bulk NAERG	Not applicable.
Canada	Not regulated.
Mexico	Not regulated.
Bulk Quantity	85000 KG, 187391 lbs.
Intermediate Quantity	11000 KG, 24251 lbs.
Non-Bulk Quantity	400 KG, 882 lbs.

*Review classification requirements before shipping materials at elevated temperatures.*

15	Regulatory Information
----	------------------------

- Global Chemical Inventories -

USA	This product contains a component that is regulated under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) when it is used as a biocide. All other components of this product are on the US TSCA Inventory.
Other TSCA Reg.	None known.
EU	All components are in compliance with the EC Seventh amendment Directive 92 /32/EEC.
Japan	This product requires notification in Japan.
Australia	All components are in compliance with chemical notification requirements in Australia.
New Zealand	This product requires notification before sale in New Zealand.
Canada	This product contains a component that is regulated under the Pest Control Products Act (PCPA) when it is used as a biocide. All other components of this product are on the Domestic Substances List.
Switzerland	All components are in compliance with the Environmentally Hazardous Substances Ordinance in Switzerland.
Korea	This product requires notification before sale in Korea.
Philippines	All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).
China	All components of this product are listed on the Inventory of Existing Chemical Substances in China.

- Other U.S. Federal Regulations -

SARA Ext. Haz. Subst.	This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.
SARA Section 313	This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.
SARA 311 Classifications	Acute Hazard <span style="margin-left: 100px;">Yes</span>

--	--

TEF154456EXP.

Chronic Hazard	Yes
Fire Hazard	No
Reactivity Hazard	No

CERCLA Hazardous Substances

None known.

- State Regulations -

Cal. Prop. 65

This product contains the following chemical(s) known to the state of California to cause cancer and/or birth defects based on maximum impurity levels of components: <0.01 ppm Benzene, CAS no. 71-43-2 1 ppm Acrylonitrile, CAS no. 107-13-1 8 ppm N-(Hydroxymethyl)acrylamide, CAS no. 924-42-5 0.001% Acrylamide, CAS no. 79-06-1 0.002% Ethyl acrylate, CAS no. 140-88-5 0.010% Formaldehyde, CAS no. 50-00-0

- Product Registrations -

U.S. Fuel Registration Not applicable.  
 Finnish Registration Number Not Registered  
 Swedish Registration Number Not Registered  
 Norwegian Registration Number Not Registered  
 Danish Registration Number Not Registered  
 Swiss Registration Number Not Registered  
 Italian Registration Number Not Registered

- Other / International -

Miscellaneous Regulatory Information

Not determined.

16	Other Information
----	-------------------

US NFPA Codes

Health	Fire	Reactivity	Special
2	0	0	N/E

(N/E) - None established

HMIS Codes

Health	Fire	Reactivity
2*	0	0

Precautionary Labels

Warning.

- | Harmful if inhaled.
- | Causes allergic skin reaction.
- | May be harmful if swallowed.
- | May cause eye irritation.
- | May cause skin irritation.
- | May cause chronic health effects.

Revision Indicators

Section: 3 Hazardous ingredients.	Changed: 17 October 2009
Section: 4 Additional first aid measures.	Changed: 13 November 2009
Section: 7 Handling procedures.	Changed: 13 November 2009
Section: 8 Hazardous ingredients.	Changed: 17 October 2009
Section: 11 Skin irritation.	Changed: 17 October 2009
Section: 14 U.S. DOT Intermediate shipping description.	Changed: 15 October 2009

*Users Responsibility/Disclaimer of Liability: The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.*



## MATERIAL SAFETY DATA SHEET

Effective Date: 3-11-09

**Product:** Tychem@68710

### 1. Chemical Product and Company Identification

**Product name:** Tychem@68710

**Chemical product name:** Anionic Emulsion of Carboxy Modified Styrene Butadiene Polymer

**Product code:** none

**Manufacturer Name:**

Mallard Creek Polymers, Inc.  
14800 Mallard Creek Rd  
Charlotte, NC 28262

**Information Contact:**

Rob Beyersdorf  
Mallard Creek Polymers  
14800 Mallard Creek Rd  
Charlotte, NC 28262  
1-704-547-0622 Ext 1006

#### HMIS

Health:	1
Flammability:	0
Reactivity:	0
Personal Protection:	

**Emergency phone number:**

1-800-424-9300 or 1-703-527-3887 (CHEMTREC)

#### NFPA

Health:	1
Flammability:	0
Reactivity:	0

### 2. Composition / information or ingredients

**Chemical name:**

	CAS No.	% by Wt.
1) Carboxylated SBR emulsion	Proprietary	30.0 - 39.0%
3) Water	7732-18-5	59.0 - 61.0%

**Additional Information:**

Refer to Section 8 for exposure guidelines and Section 15 for regulatory information.

### 3. Hazards identification

#### Emergency Overview

The health hazards of this product should be low under normal industrial and commercial uses.

**Potential Health Effects:**

**EYES:** Contact may cause eye irritation.

**SKIN:** Prolonged or repeated contact may cause skin irritation.

**INHALATION:** Inhalation of vapor or mist can cause the following: headache and nausea, irritation of the eyes, nose, throat, and lungs.

**INGESTION:** Ingestion is not considered a potential route of exposure. If swallowed, give 2 glasses of water to drink. Consult a physician. Do not induce vomiting unless directed to do so by medical personnel.

**CARCINOGENICITY INFORMATION:** Suspect cancer hazard (contains material which) may cause cancer.

This product contains trace levels of a component or components known to the state of California to cause cancer:

- Formaldehyde (gas) (50-00-0).

#### 4. First-aid measures

**EYE CONTACT:** Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.

**SKIN CONTACT:** Wash skin with soap and water. Get medical attention if irritation develops or persists.

**INHALATION FIRST:** If exposed to excessive levels of fumes, remove to fresh air. If breathing is difficult, give oxygen. Get medical attention.

**INGESTION:** Ingestion is not considered a potential route of exposure. If swallowed, immediately give 2 glasses of water. Get medical attention immediately. Do not induce vomiting unless directed to do so by medical personnel.

#### 5. Fire-fighting measures

##### PROPERTIES

COC Flash Point: N/A

Autoignition Temperature: N/A

##### FLAMMABLE LIMITS IN AIR

LEL: N/A

UEL: N/A

##### EXTINGUISHING MEDIA:

Use extinguishing media appropriate for surrounding fire.

##### FIRE & EXPLOSION HAZARDS:

Heating above 200°C or in fire conditions toxic decomposition products may be formed. Material can splatter above 100C/212F. Polymer film can burn.

##### FIRE FIGHTING INSTRUCTIONS:

Avoid breathing smoke, fumes, and decomposition products. As in any fire, wear self-contained breathing apparatus pressure-demand MSHA/NIOSH (approved or equivalent) and full protective gear.

#### 6. Accidental Release Measures

##### Personal Precautions:

Splash goggles and gloves

##### Environmental Precautions and Clean-up Methods:

Absorb with an inert material and put the spilled material in an appropriate waste disposal. Avoid run-off into sewers, ditches or waterways. Do not allow material to enter soil or surface water.

## 7. Handling and storage

### RECOMMENDED STORAGE TEMPERATURE

Minimum: 1.0 C (33.8 F)

Maximum: 49.0 C (120.2 F)

### HANDLING (PERSONNEL):

Monomer vapors can be evolved when material is heated during processing operations.

### HANDLING (PHYSICAL ASPECTS):

Keep from freezing. Do not store at temperatures above 49°C. Avoid temperatures above 200°C.

### STORAGE PRECAUTIONS:

Keep from freezing. Store in a cool place in original container and protect from sunlight. Keep container closed when not in use.

## 8. Exposure Controls, Personal Protection

### ENGINEERING CONTROLS:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. Good general ventilation should be sufficient to control airborne levels of irritating vapors.

### EYE / FACE PROTECTION REQUIREMENTS:

Where contact with this material is likely, eye protection is recommended.

### SKIN PROTECTION REQUIREMENTS:

Selection of specific items such as gloves, boots, apron or full-body suit will depend on operation. Nitrile rubber and PVC are not suitable protective materials; Neoprene is recommended.

### RESPIRATORY PROTECTION REQUIREMENTS:

When there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

### EXPOSURE GUIDELINES:

#### Formaldehyde

OSHA Exposure Limit: 0.75 ppm

Odor Threshold: 0.027-9770 ppm

Immediate Lethal Dosage: 75 ppm

OSHA STEL 15min: 2.00 ppm

## 9. Physical and chemical properties

<b>Physical state:</b>	Liquid
<b>Color:</b>	White, milky
<b>Odor:</b>	Slight, sweet odor
<b>Boiling Point:</b>	100C at 17mm Hg
<b>Melting Point:</b>	0°C
<b>Vapor Density:</b>	<1 (Air = 1)
<b>Vapor Pressure:</b>	17mm Hg @ 20C
<b>Solubility in water:</b>	Miscible
<b>Specific Gravity:</b>	1.0 – 1.03
<b>pH:</b>	4.8 – 5.2

## 10. Stability and reactivity

### STABILITY:

Materials containing similar structural groups are normally stable.

### POLYMERIZATION:

This material is considered stable. Hazardous polymerization will not occur.

### INCOMPATIBILITY WITH OTHER MATERIALS:

There are no known materials which are incompatible with this product.

### DECOMPOSITION:

Decomposition will not occur if handled and stored properly. Avoid temperatures above 177°C / 350°F, the onset of polymer decomposition. Toxic decomposition products may be formed.

Formaldehyde will be generated under acidic conditions. Maintain adequate ventilation under these conditions to prevent exposure to formaldehyde above recommended limits.

## 11. Toxicological information

### MISCELLANEOUS:

Acute Data - No toxicity data are available for this material. The information shown is based on the toxicity of properties of emulsion polymers

## 12. Ecological information

Persistence/degradability: Ecological information has not been determined for substance

Ecotoxicity:

## 13. Disposal considerations

### Disposal / product:

Waste must be disposed in accordance with federal, state and local environmental control regulations.

### Waste code:

Not a RCRA Hazardous waste

### Disposal / contaminated packaging:

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

## 14. Transport information

### Department of Transportation (DOT) – US:

This product is not regulated by D.O.T. when shipped domestically by land.

### Transportation of Dangerous Goods (TDG) – Canada:

This product is not regulated by TDG when shipped domestically by land.

## 15. Regulatory information

This material or all of its components are listed on the Inventory of Existing Chemical Substances under the Toxic Substance Control Act (TSCA).

This material or all of its components are listed on the Canadian Domestic Substances List (DSL).

This material or all of its components are listed (or considered as having been notified) on the European Inventory of Existing Chemical Substances (EINECS).

SARA, Title III, Section 313, No Components Listed.

CERCLA Hazardous Substances

FORMALDEHYDE (50-00-0) -- RQ 100 lb

RCRA Hazardous Substances

FORMALDEHYDE (50-00-0) -- RCRA Code: U122

Clean Air Act - Section 112

FORMALDEHYDE (50-00-0)

Title V

FORMALDEHYDE (50-00-0)

CA Proposition 65

FORMALDEHYDE (50-00-0)

PA Hazardous Substance List

FORMALDEHYDE (50-00-0)

SC Toxic Air Pollutants List

FORMALDEHYDE (50-00-0)

## 16. Other information

### HISTORY

Date of issue: 03/11/2009

Version: 1

### Notice to Reader

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**MATERIAL SAFETY DATA SHEET**

Effective Date: 3-11-09

**Product:** Tychem@68710

**1. Chemical Product and Company Identification**

**Product name:** Tychem@68710

**Chemical product name:** Anionic Emulsion of Carboxy Modified Styrene Butadiene Polymer

**Product code:** none

**Manufacturer Name:**

Mallard Creek Polymers, Inc.  
14800 Mallard Creek Rd  
Charlotte, NC 28262

**Information Contact:**

Rob Beyersdorf  
Mallard Creek Polymers  
14800 Mallard Creek Rd  
Charlotte, NC 28262  
1-704-547-0622 Ext 1006

**HMIS**

Health:	1
Flammability:	0
Reactivity:	0
Personal Protection:	

**Emergency phone number:**

1-800-424-9300 or 1-703-527-3887 (CHEMTREC)

**NFPA**

Health:	1
Flammability:	0
Reactivity:	0

**2. Composition / information or ingredients**

**Chemical name:**

	CAS No.	% by Wt.
1) Carboxylated SBR emulsion	Proprietary	30.0 - 39.0%
3) Water	7732-18-5	59.0 - 61.0%

**Additional Information:**

Refer to Section 8 for exposure guidelines and Section 15 for regulatory information.

**3. Hazards identification**

**Emergency Overview**

The health hazards of this product should be low under normal industrial and commercial uses.

**Potential Health Effects:**

**EYES:** Contact may cause eye irritation.

**SKIN:** Prolonged or repeated contact may cause skin irritation.

**INHALATION:** Inhalation of vapor or mist can cause the following: headache and nausea, irritation of the eyes, nose, throat, and lungs.

**INGESTION:** Ingestion is not considered a potential route of exposure. If swallowed, give 2 glasses of water to drink. Consult a physician. Do not induce vomiting unless directed to do so by medical personnel.

**CARCINOGENICITY INFORMATION:** Suspect cancer hazard (contains material which) may cause cancer.

This product contains trace levels of a component or components known to the state of California to cause cancer:

- Formaldehyde (gas) (50-00-0).

#### 4. First-aid measures

**EYE CONTACT:** Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists.

**SKIN CONTACT:** Wash skin with soap and water. Get medical attention if irritation develops or persists.

**INHALATION FIRST:** If exposed to excessive levels of fumes, remove to fresh air. If breathing is difficult, give oxygen. Get medical attention.

**INGESTION:** Ingestion is not considered a potential route of exposure. If swallowed, immediately give 2 glasses of water. Get medical attention immediately. Do not induce vomiting unless directed to do so by medical personnel.

#### 5. Fire-fighting measures

##### PROPERTIES

COC Flash Point: N/A

Autoignition Temperature: N/A

##### FLAMMABLE LIMITS IN AIR

LEL: N/A

UEL: N/A

##### EXTINGUISHING MEDIA:

Use extinguishing media appropriate for surrounding fire.

##### FIRE & EXPLOSION HAZARDS:

Heating above 200°C or in fire conditions toxic decomposition products may be formed. Material can splatter above 100C/212F. Polymer film can burn.

##### FIRE FIGHTING INSTRUCTIONS:

Avoid breathing smoke, fumes, and decomposition products. As in any fire, wear self-contained breathing apparatus pressure-demand MSHA/NIOSH (approved or equivalent) and full protective gear.

#### 6. Accidental Release Measures

##### Personal Precautions:

Splash goggles and gloves

##### Environmental Precautions and Clean-up Methods:

Absorb with an inert material and put the spilled material in an appropriate waste disposal. Avoid run-off into sewers, ditches or waterways. Do not allow material to enter soil or surface water.

## 7. Handling and storage

### RECOMMENDED STORAGE TEMPERATURE

Minimum: 1.0 C (33.8 F)

Maximum: 49.0 C (120.2 F)

### HANDLING (PERSONNEL):

Monomer vapors can be evolved when material is heated during processing operations.

### HANDLING (PHYSICAL ASPECTS):

Keep from freezing. Do not store at temperatures above 49°C. Avoid temperatures above 200°C.

### STORAGE PRECAUTIONS:

Keep from freezing. Store in a cool place in original container and protect from sunlight. Keep container closed when not in use.

## 8. Exposure Controls, Personal Protection

### ENGINEERING CONTROLS:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. Good general ventilation should be sufficient to control airborne levels of irritating vapors.

### EYE / FACE PROTECTION REQUIREMENTS:

Where contact with this material is likely, eye protection is recommended.

### SKIN PROTECTION REQUIREMENTS:

Selection of specific items such as gloves, boots, apron or full-body suit will depend on operation. Nitrile rubber and PVC are not suitable protective materials; Neoprene is recommended.

### RESPIRATORY PROTECTION REQUIREMENTS:

When there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

### EXPOSURE GUIDELINES:

#### Formaldehyde

OSHA Exposure Limit: 0.75 ppm

Odor Threshold: 0.027-9770 ppm

Immediate Lethal Dosage: 75 ppm

OSHA STEL 15min: 2.00 ppm

## 9. Physical and chemical properties

Physical state:	Liquid
Color:	White, milky
Odor:	Slight, sweet odor
Boiling Point:	100C at 17mm Hg
Melting Point:	0°C
Vapor Density:	<1 (Air = 1)
Vapor Pressure:	17mm Hg @ 20C
Solubility in water:	Miscible
Specific Gravity:	1.0 – 1.03
pH:	4.8 – 5.2

## 10. Stability and reactivity

### STABILITY:

Materials containing similar structural groups are normally stable.

### POLYMERIZATION:

This material is considered stable. Hazardous polymerization will not occur.

### INCOMPATIBILITY WITH OTHER MATERIALS:

There are no known materials which are incompatible with this product.

### DECOMPOSITION:

Decomposition will not occur if handled and stored properly. Avoid temperatures above 177°C / 350°F, the onset of polymer decomposition. Toxic decomposition products may be formed.

Formaldehyde will be generated under acidic conditions. Maintain adequate ventilation under these conditions to prevent exposure to formaldehyde above recommended limits.

## 11. Toxicological information

### MISCELLANEOUS:

Acute Data - No toxicity data are available for this material. The information shown is based on the toxicity of properties of emulsion polymers

## 12. Ecological information

Persistence/degradability: Ecological information has not been determined for substance

Ecotoxicity:

## 13. Disposal considerations

### Disposal / product:

Waste must be disposed in accordance with federal, state and local environmental control regulations.

### Waste code:

Not a RCRA Hazardous waste

### Disposal / contaminated packaging:

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

## 14. Transport information

### Department of Transportation (DOT) – US:

This product is not regulated by D.O.T. when shipped domestically by land.

### Transportation of Dangerous Goods (TDG) – Canada:

This product is not regulated by TDG when shipped domestically by land.

## 15. Regulatory information

This material or all of its components are listed on the Inventory of Existing Chemical Substances under the Toxic Substance Control Act (TSCA).

This material or all of its components are listed on the Canadian Domestic Substances List (DSL).

This material or all of its components are listed (or considered as having been notified) on the European Inventory of Existing Chemical Substances (EINECS).

SARA, Title III, Section 313, No Components Listed.

CERCLA Hazardous Substances  
FORMALDEHYDE (50-00-0) – RQ 100 lb

RCRA Hazardous Substances  
FORMALDEHYDE (50-00-0) -- RCRA Code: U122

Clean Air Act - Section 112  
FORMALDEHYDE (50-00-0)

Title V  
FORMALDEHYDE (50-00-0)

CA Proposition 65  
FORMALDEHYDE (50-00-0)

PA Hazardous Substance List  
FORMALDEHYDE (50-00-0)

SC Toxic Air Pollutants List  
FORMALDEHYDE (50-00-0)

## 16. Other information

### HISTORY

Date of issue: 03/11/2009

Version: I

### Notice to Reader

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# MATERIAL SAFETY DATA SHEET

## UNIFROTH 0144

Date Issued : 02/02/93

Date Changed : 01/07/15

Date Printed : 04/23/15

Manufacturer : **Unichem, Inc.**  
916 West Main St.  
Haw River, NC 27258

Contact : Gary Harris  
(336) 578-5476

Emergency Contact : **Chemtrec (800) 424-9300**

Hazard Rating :

	H.M.I.S.	N.F.P.A.
HEALTH	1	1
FIRE	0	0
REACTIVITY	0	0
	P.P.E.	SPECIAL
OTHER	B	NONE

4 = Extreme  
3 = High  
2 = Moderate  
1 = Slight  
0 = Insignificant  
\* Chronic Health Hazard

Identification :  
Common Name : FROTH AID  
Generic Name : SOAP  
Chemical : CATIONIC SURFACTANT  
Chemical Family : SURFACTANT

DOT Ship Name : NON-REGULATED

Warning Statement : CAUTION  
MAY CAUSE IRRITATION TO EYES  
MAY CAUSE IRRITATION TO SKIN

### Section I - Ingredients

Components	%	Hazardous Ingredients	%	T.L.V. *
SURFACTANT	> 20%	N/A		
WATER	> 80%			

*This product complies with all TSCA inventory requirements.*

\* Reporting required for S.A.R.A. (III) Sec. 313 : ( See Sec. VI of this MSDS)

## Section II - Emergency and First Aid Procedures

Emergency :	Call personal or company physician.
Eye Contact :	Holding the lids apart, flush contaminated eye(s) with a gentle stream of water for 15 minutes. If irritation or redness develops and persists, seek immediate medical attention.
Skin Contact :	Remove contaminated clothing and cleanse thoroughly with soap and water. Seek medical attention if irritation, swelling, blistering, or redness develops and persists.
Inhalation :	First aid is not required, normally. However, seek medical advice if any unusual symptoms develop.
Ingestion :	Seek medical advice if swallowed.
Note to Physician :	None determined.

## Section III - Physiological Effects and Health Information

Eye Effects :	May cause irritation to eyes.
Skin Effects :	May cause irritation to skin.
Systemic Effects :	Excessive exposures to heated vapors may be irritating to nose, throat, and respiratory tract.

## Section IV - Special Protective Information

Respiratory Protection : (Specify Type)	The use of respiratory equipment depends on vapor concentrations above the time-weighted TLV or PEL.
Ventilation :	General mechanical ventilation may be sufficient to keep product vapor concentrations within specified time-weighted TLV ranges.
Eye Protection :	Working conditions and safety regimentation dictates eye protection when working with mists, dust or liquids.
Protective Gloves :	The use of gloves which are impermeable to the specific material handled is advised to prevent skin irritation and absorption.
Other Protective Equipment :	WEAR SAFETY GLASSES AND IMPERVIOUS GLOVES.

## Section V - Reactive Data

Stability :	Stable No known conditions to avoid.
Incompatibility : (Materials to Avoid)	Avoid acids, bases, and other reactive materials.
Hazardous Decomposition	Various combustion products, including carbon oxides, nitrogen oxides and sulfur oxides.

Hazardous Polymerization : Will not occur  
No known conditions to avoid.

### Section VI - Spill or Leak Procedures

Precautions in Case of Release or Spill : Spill and releases of this material are not reportable under S.A.R.A. Title III, Sec. 313. Prevent spilled liquid from entering sewer, storm drains, or other unauthorized treatment/drainage systems and natural waterways. Dike spill. Absorb with inert material and collect for disposal. Flush area with water. Prevent washings from entering waterways.

Waste Disposal : This material is NOT defined as hazardous by the Resource Conservation and Recovery Act. It is the product user's responsibility to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-40) Dispose of this product in accordance with applicable local, state, and federal regulations.

### Section VII - Storage and Special Precautions

Handling and Storing Precautions : Shocking the material with large quantities of chemical or extreme shear agitation may cause coagulation. Keep product containers closed when not in use. Avoid extreme temperature variations and freezing.

Other : In general, the health and safety hazards expected from this product are slight.

### Section VIII - Fire and Explosion Hazard Data

Flash Point Range : Non-Flammable  
NOT DETERMINED

Extinguisher Media : For dried solids, use water, foam, CO2, or dry chemical fire fighting equipment.

Unusual Fire and Explosion : Closed containers exposed to heat may rupture due to pressure buildup.

Hazardous Fire Fighting Procedures : Water may be useful in keeping containers cool.

### Section IX - Physical Data

Approximate Boiling Temperature : (F) 212

Percent Volatiles : 78  
(+/- 2%)

Weight per Gallon : 8.3

pH : 7

Vapor Density : N/D

Evaporation Rate : Same as water

Specific Gravity : Same as water

Solubility in Water : COMPLETE

Appearance and Odor : CLEAR TO YELLOW LIQUID, WITH A(N) BLAND ODOR.

### Section X - Documentary Information

Issue Date : 02/02/93

Print Date : 04/23/15

Prepared By : Amy Conn

Manager : Gary E. Harris

Disclaimer : The above information is believed to be correct as of the date hereof. However, no warranty or merchantability, fitness for any use, or any other warranty is expressed or is to be implied regarding the accuracy of these data, the results to be obtained from the use of material, or the hazards connected with such use. Since the information contained herein may be applied under conditions beyond our control and with which we may be unfamiliar, and since data made available subsequent to the date hereof may suggest modification of the information, we do not assume responsibility for the results of its use. This information is furnished on the condition that the person receiving it shall make their own determination as to the suitability of the material for their particular purpose and on the condition that they assume the risk of use thereof.

**Safety Data Sheet**

Material: CATALYST EM 459

Version: 2.0 (US)

Date of print: 06/08/2015

Date of last alteration: 05/27/2015

**1. Product and company identification****1.1 Identification of the substance or preparation:**

**Commercial product name:** CATALYST EM 459  
**Use of substance / preparation** Industrial.  
Paper and foil coating

**1.2 Company/undertaking identification:**

**Manufacturer/distributor:** Wacker Chemie AG  
Hanns-Seidel-Platz 4  
81737 München  
Germany

**Customer information:** Wacker Chemical Corporation  
3301 Sutton Road  
Adrian, Michigan 49221-9397  
USA  
InfoLine:  
Tel (517) 264-8240, Fax (517) 264-8740  
Hours of operation:  
Monday - Friday, 8 am to 5 pm (eastern standard time)  
Corporate website: www.wacker.com

**Emergency telephone no. (24h):** (517) 264-8500  
**Transportation emergency:** (800) 424-9300 (CHEMTREC, USA)  
(703) 527-3887 (CHEMTREC, international)

This SDS was prepared by the Regulatory Affairs and Product Safety Department (RAPS) of Wacker Chemical Corporation.

**2. Hazards Identification****2.1 Classification of the substance or mixture**

**Classification (GHS):**  
Not a hazardous substance or mixture.

**2.2 Label elements**

**Labelling (GHS):**  
No labeling according to GHS required.

**Reportable ingredients for labelling:**

Vinyl acetate/vinyl alcohol copolymer  
Polydimethylsiloxane vinyl terminated  
Water

**2.3 Other hazards**

No data available.

**3. Composition/information on ingredients****3.1 Chemical characterization (preparation)**

**Chemical characteristics**  
Polydimethylsiloxane with vinyl groups + catalyst ; (emulsion in water)

**3.2 Information on ingredients:**

This material does not contain any reportable hazardous ingredients.

Substances listed in the Subsections "HAPS" and "California Proposition 65 Carcinogens / Reproductive Toxins" that are not listed in this section are only present at quantities below 0.1% for California Proposition 65 listed toxins or below 1% for non-carcinogenic HAPS or they are inextricably bound in the product.

**Safety Data Sheet**

Material:

CATALYST EM 459

Version: 2.0 (US)

Date of print: 06/08/2015

Date of last alteration: 05/27/2015

**4. First-aid measures****4.1 General information:**

Get medical attention if irritation occurs or if breathing becomes difficult. Remove contaminated clothing and shoes.

**4.2 After inhalation**

If inhaled remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen.

**4.3 After contact with the skin**

For skin contact, immediately wipe away excess material. Use a waterless hand cleaner to remove as much of the remaining material as possible. Wash with soap and water.

**4.4 After contact with the eyes**

If contact with eyes, immediately hold eyelids apart and flush with plenty of water for at least 15 min.

**4.5 After swallowing**

For ingestion, if conscious, give several glasses of water but do not induce vomiting. If vomiting does occur, give additional fluids.

**4.6 Advice for the physician**

Treat symptomatically.

**5. Fire-fighting measures****5.1 Flammable properties:**

Property:	Value:	Method:
Flash point.....	not applicable	
Boiling point / boiling range .....	100 °C (212 °F) at 1013 hPa	
Lower explosion limit (LEL) .....	not applicable	
Upper explosion limit (UEL).....	not applicable	
Ignition temperature .....	not applicable	

**5.2 Fire and explosion hazards:**

This material does not present any unusual fire or explosion hazards.

**5.3 Recommended extinguishing media:**

Material does not burn. Water may be used to cool tanks and structures adjacent to the fire.

**5.4 Unsuitable extinguishing media:**

None.

**5.5 Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases**

not applicable

**5.6 Fire fighting procedures:**

Full turn-out gear and Self Contained Breathing Apparatus (SCBA) should be worn when fighting large fires.

**6. Accidental release measures****6.1 Precautions:**

Secure the area. Obtain appropriate PPE, supplies, and equipment prior to attempting any response.

HAZWOPER PPE Level: D

**6.2 Containment:**

Use loose absorbant material or prefabricated socks to dike around small quantities of spilled material (incidental spills). Cover openings to underground drains and sewers. If safe to do so, stop the leak at its source.

Spills of material which could reach surface waters must be reported to the United States Coast Guard National Response Center's toll free phone number (800) 424-8802.

## Safety Data Sheet

Material: CATALYST EM 459

Version: 2.0 (US)

Date of print: 06/08/2015

Date of last alteration: 05/27/2015

### 6.3 Methods for cleaning up

Silicone fluids are slippery; spills are a safety hazard. Apply sand or other inert granular material to improve traction. Liquids may be recovered using suction devices or pumps. If flammable, only air driven or properly rated electrical equipment should be used. Use absorbant materials to pick up residual liquids.

## 7. Handling and storage

### 7.1 General information:

Always stir well before use.

### 7.2 Handling

**Precautions for safe handling:**

Keep container closed when not in use. Spilled substance increases risk of slipping.

**Precautions against fire and explosion:**

No special precautions against fire and explosion required.

### 7.3 Storage

**Conditions for storage rooms and vessels:**

Protect against frost.

**Advice for storage of incompatible materials:**

none known

**Further information for storage:**

Store in the original container. Store in a warm temperature regulated area to prevent freezing during cold weather conditions. Protect against sun.

**Minimum temperature allowed during storage and transportation:** 0 °C (32 °F)

Do not allow this material to freeze.

## 8. Exposure controls and personal protection

### 8.1 Engineering controls

**Ventilation:**

Use with adequate ventilation.

**Local exhaust:**

No special ventilation required.

### 8.2 Associate substances with specific control parameters such as limit values

**Maximum airborne concentrations at the workplace:**

CAS No.	Material	Type	mg/m <sup>3</sup>	ppm	Dust fract.
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none known

### 8.3 Personal protection equipment (PPE)

**Respiratory protection:**

Respiratory protection is not normally required.

**Hand protection:**

Any liquid-tight rubber or vinyl gloves.

**Eye protection:**

Safety glasses with side shields or chemical safety goggles.

**Other protective clothing or equipment:**

Additional protective clothing or equipment is not normally required. Provide eye bath and safety shower.

### 8.4 General hygiene and protection measures:

Avoid contact with eyes, skin and clothing. Do not eat, drink or smoke when handling. Follow standard industrial hygiene practices when using this material. Wash thoroughly after handling.

**Safety Data Sheet**Material: **CATALYST EM 459**

Version: 2.0 (US)

Date of print: 06/08/2015

Date of last alteration: 05/27/2015

**9. Physical and chemical properties****9.1 Appearance**

Physical state / form ..... : liquid  
Colour ..... : milky white  
Odour ..... : characteristic

**9.2 Safety parameters**

Property:	Value:	Method:
Melting point / melting range .....	not applicable	
Boiling point / boiling range .....	100 °C (212 °F) at 1013 hPa	
Flash point.....	not applicable	
Ignition temperature .....	not applicable	
Lower explosion limit (LEL) .....	not applicable	
Upper explosion limit (UEL).....	not applicable	
Vapour pressure.....	not determined	
Density .....	1 g/cm <sup>3</sup> at 25 °C (77 °F)	
Water solubility / miscibility.....	not applicable	
pH-Value .....	3 - 7 at 25 °C (77 °F)	
Viscosity (dynamic) .....	500 mPa.s at 25 °C (77 °F)	

**9.3 Further information**

Corrosive to Steel or Aluminum..... : Not corrosive to steel or aluminum.

**10. Stability and reactivity****10.1 General information:**

Stable under normal conditions of use.

**10.2 Conditions to avoid**

Although this product is not expected to react with commonly used materials of construction and process equipment, it is advised that any rubber or plastic items such as hoses and gaskets be tested prior to large scale processing to ensure there is no degradation of performance or durability. Protect against frost.

**10.3 Materials to avoid**

acids , basic substances (e.g. alkalis, ammonia, amines) .

**10.4 Hazardous decomposition products**

Measurements have shown the formation of small amounts of formaldehyde at temperatures above about 150 °C (302 °F) through oxidation. carbon dioxide (CO<sub>2</sub>) , carbon monoxide (CO) , Silicon dioxide .

**10.5 Further information:**

Hazardous polymerization cannot occur.

**11. Toxicological information****11.1 Information on toxicological effects****11.1.1 Further toxicological information**

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**12. Ecological information****12.1 Additional information**

According to our present knowledge no data known.

**Safety Data Sheet**Material: **CATALYST EM 459**

Version: 2.0 (US)

Date of print: 06/08/2015

Date of last alteration: 05/27/2015

**13. Disposal considerations****13.1 Product disposal****Recommendation:**

Material that cannot be used or chemically reprocessed should be disposed of at an approved facility in accordance with any applicable governmental regulations. State and local regulations may be more stringent than Federal regulations.

**13.2 Packaging disposal****Recommendation:**

Uncleaned containers should not be reused to hold another material due to the potential for reaction between residual product and incompatible materials. Uncleaned packaging should be treated with the same precautions as the material. After emptying contaminated containers may be cleansed and recycled.

**14. Transport information****14.1 US DOT & CANADA TDG SURFACE**

Valuation ..... : Not regulated for transport

Other Information..... : Protect from freezing, when exposed to cold temperatures approaching 0 °C (32 °F) or below.

**14.2 Transport by sea IMDG-Code**

Valuation ..... : Not regulated for transport

**14.3 Air transport ICAO-TI/IATA-DGR**

Valuation ..... : Not regulated for transport

**15. Regulatory information****15.1 U.S. Federal regulations****TSCA inventory status and TSCA information:**

This material or its components are listed on or are in compliance with the requirements of the TSCA Chemical Substance Inventory.

**TSCA 12(b) Export Notification:**

This material does not contain any TSCA 12(b) regulated chemicals.

**CERCLA Regulated Chemicals:**

This material does not contain any CERCLA regulated chemicals.

**SARA 302 EHS Chemicals:**

This material does not contain any SARA extremely hazardous substances.

**SARA 311/312 Hazard Class:**

This product does not present any SARA 311/312 hazards.

**SARA 313 Chemicals:**

This material does not contain any SARA 313 chemicals above de minimus levels.

**HAPS (Hazardous Air Pollutants):**

This material does not contain any hazardous air pollutants.

**15.2 U.S. State regulations****California Proposition 65 Carcinogens:**

This material does not contain any chemicals known to the state of California to cause cancer.

**California Proposition 65 Reproductive Toxins:**

This material does not contain any chemicals known to the State of California to cause reproductive effects.

**Massachusetts Substance List:**

This material contains no listed components.

**New Jersey Right-to-Know Hazardous Substance List:**

This material contains no listed components.

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Date of last alteration: 05/27/2015

**Pennsylvania Right-to-Know Hazardous Substance List:**

This material contains no listed components.

**15.3 Canadian regulations**

This product has been classified in accordance with the Hazard criteria of the CPR and the SDS contains all the information required by the CPR.

**WHMIS Hazard Classes:**

None.

**DSL Status:**

This material or its components are listed on the Canadian Domestic Substances List.

**Non-DSL Chemicals:**

This material does not contain any non-DSL chemicals.

**Canadian Ingredient Disclosure List:**

This material contains no listed components.

**15.4 Details of international registration status**

Relevant information about individual substance inventories, where available, is given below.

South Korea (Republic of Korea).....	<b>ECL (Existing Chemicals List):</b> This product is listed in, or complies with, the substance inventory.
Japan.....	<b>ENCS (Handbook of Existing and New Chemical Substances):</b> This product is listed in, or complies with, the substance inventory.
Australia .....	<b>AICS (Australian Inventory of Chemical Substances):</b> This product is listed in, or complies with, the substance inventory.
People's Republic of China.....	<b>IECSC (Inventory of Existing Chemical Substances in China):</b> This product is listed in, or complies with, the substance inventory.
Canada.....	<b>DSL (Domestic Substance List):</b> This product is listed in, or complies with, the substance inventory.
Philippines .....	<b>PICCS (Philippine Inventory of Chemicals and Chemical Substances):</b> This product is listed in, or complies with, the substance inventory.
United States of America (USA).....	<b>TSCA (Toxic Substance Control Act Chemical Substance Inventory):</b> This product is listed in, or complies with, the substance inventory.
European Economic Area (EEA).....	<b>REACH (Regulation (EC) No 1907/2006):</b> General note: the registration obligations for substances imported into the EEA or manufactured within the EEA by the supplier mentioned in section 1 are fulfilled by the said supplier. The registration obligations for substances imported into the EEA by customers or other downstream users must be fulfilled by the latter.

**16. Other information****16.1 Additional information:**

This Safety Data Sheet (SDS) meets the requirements of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200). This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by the CPR. This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief accurate and reliable as of the date compiled. However, no representation, warranty or guarantee expressed or implied, is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information. Nothing herein shall be construed as a recommendation for uses which infringe valid patents or as extending a license under valid patents. This SDS provides selected regulatory information on this product, including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.

Vertical lines in the left-hand margin indicate changes compared with the previous version.

All deliveries are subject to the WACKER SILICONES Health Care Policy, which is available at [www.wacker.com](http://www.wacker.com).

**Safety Data Sheet****Material:** CATALYST EM 459

Version: 2.0 (US)

Date of print: 06/08/2015

Date of last alteration: 05/27/2015

**16.2 Glossary of Terms:**

ACGIH - American Conference of Governmental Industrial Hygienists

DOT - Department of Transportation

hPa - Hectopascals

mPa\*s - Milli Pascal-Seconds

OSHA - Occupational Safety and Health Administration

PEL - Permissible Exposure Limit

ppm - Parts per Million

SARA - Superfund Amendments and Reauthorization Act

STEL - Short Term Exposure Limit

TSCA - Toxic Substances Control Act

TWA - Time Weighted Average

WHMIS - Canadian Workplace Hazardous Materials Identification System

**Flash point determination methods**

ASTM D56.....

ASTM D92, DIN 51376, ISO 2592 .....

ASTM D93, DIN 51758, ISO 2719 .....

ASTM D3278, DIN 55680, ISO 3679 .....

DIN 51755.....

**Common name**

Tagliabue (Tag) closed cup

Cleveland open cup

Pensky-Martens closed cup

Setaflash or Rapid closed cup

Abel-Pensky closed cup

**16.3 Conversion table:**

Pressure:.....: 1 hPa \* 0.75 = 1 mm Hg = 1 torr; 1 bar = 1000 hPa

Viscosity:.....: 1 mPa\*s = 1 centipoise (cP)



# Safety Data Sheet

Material: WACKER VERNETZER V 15

Version: 2.0 (US)

Date of print: 07/07/2015

Date of last alteration: 05/28/2015

## 1. Product and company identification

### 1.1 Identification of the substance or preparation:

**Commercial product name:** WACKER VERNETZER V 15  
**Use of substance / preparation:** Industrial.  
Raw material for: elastomer products

### 1.2 Company/undertaking identification:

**Manufacturer/distributor:** Wacker Chemie AG  
Hanns-Seidel-Platz 4  
81737 München  
Germany

**Customer information:** Wacker Chemical Corporation  
3301 Sutton Road  
Adrian, Michigan 49221-9397  
USA  
InfoLine:  
Tel (517) 264-8240, Fax (517) 264-8740  
Hours of operation:  
Monday - Friday, 8 am to 5 pm (eastern standard time)  
Corporate website: www.wacker.com

**Emergency telephone no. (24h):** (517) 264-8500  
**Transportation emergency:** (800) 424-9300 (CHEMTREC, USA)  
(703) 527-3887 (CHEMTREC, international)

This SDS was prepared by the Regulatory Affairs and Product Safety Department (RAPS) of Wacker Chemical Corporation.

## 2. Hazards identification

### 2.1 Classification of the substance or mixture

**Classification (GHS):**  
Not a hazardous substance or mixture.

### 2.2 Label elements

**Labelling (GHS):**  
No labeling according to GHS required.

#### Reportable ingredients for labelling:

Water  
Polydimethyl hydrogenmethyl siloxane  
Tridecanoethoxylate, branched

### 2.3 Other hazards

Releases flammable hydrogen gas.

## 3. Composition/information on ingredients

### 3.1 Chemical characterization (preparation)

Chemical characteristics  
Methylhydrogenpolysiloxane (emulsion in water)

### 3.2 Information on ingredients:

Type	CAS No.	Substance	Content [wt. %]		Note
			Lower	Upper	
INHA	69011-36-5	Tridecanoethoxylate, branched	>3.0	<5.0	

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**Type:** HYD - by-product upon hydrolysis, INHA - ingredient, NEBE - by-product, MONO - residual monomer, VERU - impurity, VUL - by-product upon vulcanization. \*\*\* **Note:** C1 - IARC carcinogen, C2 - NTP carcinogen, C3 - OSHA carcinogen, NH - non-hazardous, R - reproductive toxin.

Substances listed in the Subsections "HAPS" and "California Proposition 65 Carcinogens / Reproductive Toxins" that are not listed in this section are only present at quantities below 0.1% for California Proposition 65 listed toxins or below 1% for non-carcinogenic HAPS or they are inextricably bound in the product.

**4. First-aid measures****4.1 General information:**

Get medical attention if irritation or other symptoms occur. Before seeking medical attention remove contaminated clothing and shoes. Take a copy of the Safety Data Sheet when going for medical treatment.

**4.2 After inhalation**

If inhaled as aerosol, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.

**4.3 After contact with the skin**

If contact with skin, immediately flush skin with plenty of water for at least 15 min.

**4.4 After contact with the eyes**

If contact with eyes, immediately hold eyelids apart and flush with plenty of water for at least 15 min.

**4.5 After swallowing**

For ingestion, if conscious, give several glasses of water but do not induce vomiting. If vomiting does occur, give additional fluids.

**5. Fire-fighting measures****5.1 Flammable properties:**

Property:	Value:	Method:
Flash point.....	not applicable	
Boiling point / boiling range .....	100 °C (212 °F) at 1013 hPa	
Lower explosion limit (LEL) .....	not applicable	
Upper explosion limit (UEL).....	not applicable	
Ignition temperature .....	not applicable	

**5.2 Fire and explosion hazards:**

This product is not flammable but is considered to be a fire hazard due to the evolution of flammable hydrogen gas and its accumulation in the container headspace. Do not use a welding or cutting torch on or near any container of this material, even if empty, because an explosion could occur. The generation of hydrogen gas is increased by contact with substances mentioned in Sect. 10 "Materials to avoid" and with metals or some metallic compounds (as well as at elevated temperature). Contact with in such a manner contaminated vessels or with rust can also increase hydrogen formation.

**5.3 Recommended extinguishing media:**

water-spray , carbon dioxide , foam-type extinguishing media .

**5.4 Unsuitable extinguishing media:**

dry chemical .

**5.5 Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases**

Hazardous decomposition products: carbon dioxide , carbon monoxide , formaldehyde , silicon dioxide and incompletely burnt hydrocarbons .

**5.6 Fire fighting procedures:**

Fire fighters should wear full protective clothing including a self-contained breathing apparatus. Cool endangered containers with water.

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**6. Accidental release measures****6.1 Precautions:**

Wear personal protection equipment (see section 8). If material is released indicate risk of slipping.

**HAZWOPER PPE Level: D****6.2 Containment:**

Prevent material from entering surface waters, drains or sewers and soil. Contain any fluid that runs out using suitable material (e.g. earth).

Spills of material which could reach surface waters must be reported to the United States Coast Guard National Response Center's toll free phone number (800) 424-8802.

**6.3 Methods for cleaning up**

Do not flush away with water. For small amounts: Absorb with a liquid binding material such as diatomaceous earth and dispose of according to local/state/federal regulations. Contain larger amounts and pump up into suitable containers. Clean any slippery coating that remains using a detergent / soap solution or another biodegradable cleaner.

**6.4 Further information:**

Eliminate all sources of ignition. Do not seal collecting vessel gas-tight. Observe notes under section 7.

**7. Handling and storage****7.1 Handling****Precautions for safe handling:**

Open and handle container with care. Precautions must be taken to provide pressure relief in the container if this material is repackaged. Ensure adequate ventilation. Keep away from incompatible substances in accordance with section 10. Spilled substance increases risk of slipping.

**Precautions against fire and explosion:**

Releases flammable hydrogen gas. The containers are equipped with a overpressure valve to prevent build-up of pressure by releasing hydrogen gas. In partly emptied containers formation of explosive mixtures is possible. Keep away from sources of ignition and do not smoke. Keep away from open flames, heat and sparks. Take precautionary measures against electrostatic charging. Observe the same precautions when opening or entering confined storage areas such as cargo containers or tractor trailers.

**7.2 Storage****Conditions for storage rooms and vessels:**

Do not store in glass containers.

**Advice for storage of incompatible materials:**

not applicable

**Further information for storage:**

Protect against sun. Store in original container only. Keep container tightly closed and store in a cool, well ventilated place.

Protect against frost.

**Minimum temperature allowed during storage and transportation: 0 °C (32 °F)****8. Exposure controls and personal protection****8.1 Engineering controls****Ventilation:**

Use only with adequate ventilation.

**Local exhaust:**

To control flammable/combustible vapors: Local exhaust ventilation which meets the requirements of ANSI Z9.2 is recommended to control airborne contaminants at the point of use.

**8.2 Associate substances with specific control parameters such as limit values****Maximum airborne concentrations at the workplace:**

CAS No.	Material	Type	mg/m <sup>3</sup>	ppm	Dust fract.

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none known .

**8.3 Personal protection equipment (PPE)****Respiratory protection:**

Respiratory protection is not normally required.

**Hand protection:**

Any liquid-tight rubber or vinyl gloves.

**Eye protection:**

Safety glasses with side shields or chemical safety goggles.

**Other protective clothing or equipment:**

Long pants and long sleeved shirts. Provide eye bath and safety shower.

**8.4 General hygiene and protection measures:**

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

**9. Physical and chemical properties****9.1 Appearance**

Physical state / form.....: liquid  
 Colour .....: whitish  
 Odour.....: slight

**9.2 Safety parameters**

<b>Property:</b>	<b>Value:</b>	<b>Method:</b>
Melting point / melting range .....	-1 °C (30 °F)	
Boiling point / boiling range .....	100 °C (212 °F) at 1013 hPa	
Flash point.....	not applicable	
Ignition temperature .....	not applicable	
Lower explosion limit (LEL).....	not applicable	
Upper explosion limit (UEL).....	not applicable	
Vapour pressure.....	23 hPa at 20 °C (68 °F)	
Density .....	1 g/cm <sup>3</sup> at 20 °C (68 °F)	(DIN 51757)
Water solubility / miscibility.....	completely miscible	
pH-Value .....	3.5 - 4.0	(Indicator strips)
Viscosity (dynamic) .....	approx. 300 mPa.s	

**9.3 Further information**

According to previous experience spontaneous combustion temperature for polymer siloxane with SiH compounds is above 240 °C (464 °F). On a catalytically active surface ignition may occur at much lower temperature. This applies to porous or fibrous substances including those with alkaline surfaces, such as thermal insulation and cementaceous insulating materials. Explosion limits for released hydrogen: 4 - 75.6%(V).

**10. Stability and reactivity****10.1 General information:**

If stored and handled in accordance with standard industrial practices no hazardous reactions are known.

**10.2 Conditions to avoid**

Heat, open flames, and other sources of ignition. Contact with contaminated piping or vessels or with corroded and rusty containers can increase the rate of hydrogen formation. Observe information in section 7.

**10.3 Materials to avoid**

Reacts with: basic substances (e.g. alkalis, ammonia, amines) , strong acids and oxidizing agents . Reaction causes the formation of: hydrogen .

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**10.4 Hazardous decomposition products**

hydrogen . The following applies for the silicone content of the substance: Measurements have shown the formation of small amounts of formaldehyde at temperatures above about 150 °C (302 °F) through oxidation.

**10.5 Further information:**

Hazardous polymerization cannot occur.  
Conditions to avoid hazardous polymerization: none known

**11. Toxicological information****11.1 Information on toxicological effects****11.1.1 Acute toxicity****Assessment:**

Based on the available data acute toxic effects are not expected after single dermal exposure. Based on the available data acute toxic effects are not expected after single oral exposure.

**Product details:**

Route of exposure	Result/Effect	Species/Test system	Source
oral	LD <sub>50</sub> : > 2000 mg/kg	rat	Conclusion by analogy
dermal	LD <sub>50</sub> : > 2000 mg/kg	rat	Conclusion by analogy

**11.1.2 Skin corrosion/irritation****Assessment:**

Based on the available data a clinically relevant skin irritation hazard is not expected.

**Product details:**

Result/Effect	Species/Test system	Source
not irritating	rabbit	Conclusion by analogy

**11.1.3 Serious eye damage / eye irritation****Assessment:**

Based on the available data a clinically relevant eye irritation hazard is not expected.

**Product details:**

Result/Effect	Species/Test system	Source
not irritating	rabbit	Conclusion by analogy

**11.1.4 Respiratory or skin sensitization****Assessment:**

For this endpoint no toxicological test data is available for the whole product.

**11.1.5 Germ cell mutagenicity****Assessment:**

For this endpoint no toxicological test data is available for the whole product.

**11.1.6 Carcinogenicity****Assessment:**

For this endpoint no toxicological test data is available for the whole product.

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**11.1.7 Reproductive toxicity****Assessment:**

For this endpoint no toxicological test data is available for the whole product.

**11.1.8 Specific target organ toxicity (single exposure)****Assessment:**

For this endpoint no toxicological test data is available for the whole product.

**11.1.9 Specific target organ toxicity (repeated exposure)****Assessment:**

For this endpoint no toxicological test data is available for the whole product.

**11.1.10 Aspiration hazard****Assessment:**

For this endpoint no toxicological test data is available for the whole product.

**11.1.11 Further toxicological information**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**12. Ecological information****12.1 Toxicity****Assessment:**

No expected damaging effects to aquatic organisms. According to current knowledge adverse effects on water purification plants are not expected.

**Product details:**

Result/Effect	Species/Test system	Source
LC <sub>50</sub> : > 100 mg/l	dynamic zebra fish ( <i>Danio rerio</i> ) (96 h)	Conclusion by analogy
EC <sub>50</sub> : > 100 mg/l	static <i>Daphnia magna</i> (48 h)	Conclusion by analogy
EC <sub>50</sub> : > 1000 mg/l	sludge (3 h)	Conclusion by analogy

**12.2 Persistence and degradability****Assessment:**

Silicone content: biologically not degradable. Elimination by adsorption to activated sludge. Emulsifier: readily biologically degradable.

**12.3 Bioaccumulative potential****Assessment:**

Bioaccumulation is not expected to occur.

**12.4 Mobility in soil****Assessment:**

No adverse effects expected. Separation by sedimentation.

**12.5 Other adverse effects**

none known

**13. Disposal considerations**



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## 13.1 Product disposal

### Recommendation:

Risk of oxyhydrogen formation upon contact with the substances mentioned in 10. Material designated for disposal must be segregated from incompatible substances or materials specified in Sect. 10. Wastes of this material should not be mixed with other wastes. Provide measures such as vented bungs to ensure pressure relief in the waste containers. Material that cannot be used, reprocessed or recycled should be disposed of in accordance with Federal, State, and local regulations at an approved facility. Depending on the regulations, waste treatment methods may include, e.g., landfill or incineration.

## 13.2 Packaging disposal

### Recommendation:

Containers may contain hazardous quantities of hydrogen gas. Uncleaned containers should not be reused to hold another material due to the potential for reaction between residual product and incompatible materials. Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local/state/federal regulations. Uncleaned packaging should be treated with the same precautions as the material.

## 14. Transport information

### 14.1 US DOT & CANADA TDG SURFACE

Valuation ..... : Not regulated for transport  
Other Information..... : Protect from freezing, when exposed to cold temperatures approaching 0 °C (32 °F) or below.

### 14.2 Transport by sea IMDG-Code

Valuation ..... : Not regulated for transport

### 14.3 Air transport ICAO-TI/IATA-DGR

Valuation ..... : not permitted  
Technical name..... : \*\*\* ACHTUNG! LUFTTRANSPORT VERBOTEN! \*\*\* ATTENTION! AIR TRANSPORT FORBIDDEN! \*\*\*

## 15. Regulatory information

### 15.1 U.S. Federal regulations

#### TSCA inventory status and TSCA information:

This material or its components are listed on or are in compliance with the requirements of the TSCA Chemical Substance Inventory.

#### TSCA 12(b) Export Notification:

This material does not contain any TSCA 12(b) regulated chemicals.

#### CERCLA Regulated Chemicals:

This material does not contain any CERCLA regulated chemicals.

#### SARA 302 EHS Chemicals:

This material does not contain any SARA extremely hazardous substances.

#### SARA 311/312 Hazard Class:

This product does not present any SARA 311/312 hazards.

#### SARA 313 Chemicals:

This material does not contain any SARA 313 chemicals above de minimus levels.

#### HAPS (Hazardous Air Pollutants):

This material does not contain any hazardous air pollutants.

### 15.2 U.S. State regulations

#### California Proposition 65 Carcinogens:

This material does not contain any chemicals known to the state of California to cause cancer.

#### California Proposition 65 Reproductive Toxins:

This material does not contain any chemicals known to the State of California to cause reproductive effects.

**Safety Data Sheet****Material:** WACKER VERNETZER V 15

Version: 2.0 (US)

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**Massachusetts Substance List:**

This material contains no listed components.

**New Jersey Right-to-Know Hazardous Substance List:**

This material contains no listed components.

**Pennsylvania Right-to-Know Hazardous Substance List:**

This material contains no listed components.

**15.3 Canadian regulations**

This product has been classified in accordance with the Hazard criteria of the CPR and the SDS contains all the information required by the CPR.

**WHMIS Hazard Classes:**

None.

**DSL Status:**

This material or its components are listed on the Canadian Domestic Substances List.

**Non-DSL Chemicals:**

This material does not contain any non-DSL chemicals.

**Canadian Ingredient Disclosure List:**

This material contains no listed components.

**15.4 Details of international registration status**

Relevant information about individual substance inventories, where available, is given below.

South Korea (Republic of Korea) .....	<b>ECL</b> (Existing Chemicals List): This product is listed in, or complies with, the substance inventory.
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Australia .....	<b>AICS</b> (Australian Inventory of Chemical Substances): This product is listed in, or complies with, the substance inventory.
People's Republic of China .....	<b>IECSC</b> (Inventory of Existing Chemical Substances in China): This product is listed in, or complies with, the substance inventory.
Canada .....	<b>DSL</b> (Domestic Substance List): This product is listed in, or complies with, the substance inventory.
Philippines .....	<b>PICCS</b> (Philippine Inventory of Chemicals and Chemical Substances): This product is listed in, or complies with, the substance inventory.
United States of America (USA) .....	<b>TSCA</b> (Toxic Substance Control Act Chemical Substance Inventory): This product is listed in, or complies with, the substance inventory.
European Economic Area (EEA) .....	<b>REACH</b> (Regulation (EC) No 1907/2006): General note: the registration obligations for substances imported into the EEA or manufactured within the EEA by the supplier mentioned in section 1 are fulfilled by the said supplier. The registration obligations for substances imported into the EEA by customers or other downstream users must be fulfilled by the latter.

**16. Other information****16.1 Additional information:**

This Safety Data Sheet (SDS) meets the requirements of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200). This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by the CPR. This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief accurate and reliable as of the date compiled. However, no representation, warranty or guarantee expressed or implied, is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information. Nothing herein shall be construed as a recommendation for uses which infringe valid patents or as extending a license under valid patents. This SDS provides selected regulatory information on this product, including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.

Vertical lines in the left-hand margin indicate changes compared with the previous version.



# Safety Data Sheet

Material: WACKER VERNETZER V 15

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All deliveries are subject to the WACKER SILICONES Health Care Policy, which is available at [www.wacker.com](http://www.wacker.com).

## 16.2 Glossary of Terms:

ACGIH - American Conference of Governmental Industrial Hygienists	ppm - Parts per Million
DOT - Department of Transportation	SARA - Superfund Amendments and Reauthorization Act
hPa - Hectopascals	STEL - Short Term Exposure Limit
mPa*s - Milli Pascal-Seconds	TSCA - Toxic Substances Control Act
OSHA - Occupational Safety and Health Administration	TWA - Time Weighted Average
PEL - Permissible Exposure Limit	WHMIS - Canadian Workplace Hazardous Materials Identification System

Flash point determination methods	Common name
ASTM D56	Tagliabue (Tag) closed cup
ASTM D92, DIN 51376, ISO 2592	Cleveland open cup
ASTM D93, DIN 51758, ISO 2719	Pensky-Martens closed cup
ASTM D3278, DIN 55680, ISO 3679	Setaflash or Rapid closed cup
DIN 51755	Abel-Pensky closed cup

## 16.3 Conversion table:

Pressure: 1 hPa \* 0.75 = 1 mm Hg = 1 torr; 1 bar = 1000 hPa  
 Viscosity: 1 mPa\*s = 1 centipoise (cP)

## SAFETY DATA SHEET

### 1. Identification

#### Identification

**Product name:** PERFORMAX™ 4405

#### Additional identification

**Chemical name:** Mixture

#### Recommended use and restriction on use

**Recommended use:** Not determined.

**Restrictions on use:** Not determined.

#### Details of the supplier of the safety data sheet

##### Supplier

**Company Name:** THE LUBRIZOL CORPORATION  
**Address:** 9921 BRECKSVILLE RD  
BRECKSVILLE, OH 44141  
US  
**Telephone:** 216-447-5000

#### Emergency telephone number:

FOR TRANSPORT EMERGENCY CALL CHEMTREC (+1)703 527 3887, OR WITHIN USA 800 424 9300 (LUBRIZOL)

### 2. Hazard(s) identification

#### Hazard Classification

##### Health Hazards

**Carcinogenicity** Category 2

##### Unknown toxicity

Acute toxicity, oral	0.0 %
Acute toxicity, dermal	0.0 %
Acute toxicity, inhalation, vapor	67.2 %
Acute toxicity, inhalation, dust or mist	67.2 %

#### Label Elements:

##### Hazard Symbol:



**Signal Word:** Warning

**Hazard Statement:** Suspected of causing cancer.

## Precautionary Statement:

- Prevention:** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.
- Response:** If exposed or concerned: Get medical advice/attention.
- Storage:** Store locked up.
- Disposal:** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Other hazards which do not result in GHS classification:** None identified.

## 3. Composition/information on ingredients

Chemical name	CAS number	Percent by Weight
Amorphous silica	7631-86-9	5 - 10%
Sodium sulfonate	Confidential	1 - 5%
Titanium dioxide	13463-67-7	1 - 5%
Ammonium hydroxide	1336-21-6	0.1 - 0.5%

**Trade secret information:** A specific chemical identity and/or percentage of composition has been withheld as a trade secret.

## 4. First-aid measures

- General information:** IF exposed or concerned: Get medical advice/attention.
- Ingestion:** Rinse mouth. Get medical attention if symptoms occur.
- Inhalation:** Remove exposed person to fresh air if adverse effects are observed.
- Skin Contact:** Take off contaminated clothing and wash before re-use. Wash with soap and water. If skin irritation occurs, get medical attention.
- Eye contact:** Flush thoroughly with water. If irritation occurs, get medical assistance. Remove contact lenses, if present and easy to do. Continue rinsing.

### Most important symptoms/effects, acute and delayed

**Symptoms:** Symptoms may be delayed.

### Indication of immediate medical attention and special treatment needed

**Treatment:** Treat symptomatically.

## 5. Fire-fighting measures

**General Fire Hazards:** No unusual fire or explosion hazards noted.

### Suitable (and unsuitable) extinguishing media

**Suitable extinguishing media:** CO2, dry chemical, foam, water spray, water fog.

**Unsuitable extinguishing media:** Not determined.

**Specific hazards arising from the chemical:** When heated, hazardous gases may be released including: hydrogen chloride and chlorine. See section 10 for additional information. Material will not burn until water has been evaporated. Container may rupture on heating.

#### **Special protective equipment and precautions for firefighters**

**Special fire fighting procedures:** No data available.

**Special protective equipment for fire-fighters:** Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots.

### **6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures:** Ventilate area if spilled in confined space or other poorly ventilated areas. Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations.

**Methods and material for containment and cleaning up:** Dike far ahead of larger spill for later recovery and disposal. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Wash area with soap and water. Caution: Contaminated surfaces may be slippery.

**Environmental Precautions:** Avoid release to the environment. Prevent further leakage or spillage if safe to do so.

### **7. Handling and storage**

**Precautions for safe handling:** Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Observe good industrial hygiene practices. Provide adequate ventilation. Use personal protective equipment as required. Launder contaminated clothing before reuse. Avoid environmental contamination. Avoid contact with eyes and prolonged or repeated contact with skin. Avoid breathing mists or vapors. When using do not eat, drink or smoke. Stir well before use. Keep containers closed when not in use. Minimize contact with air to reduce contamination with mold, fungus, or other organisms which could cause decomposition or spoilage. Wash thoroughly after handling.

**Maximum Handling Temperature:** Not determined.

**Conditions for safe storage, including any incompatibilities:** Store away from incompatible materials. See section 10 for incompatible materials. Keep from freezing. Do not store in open, unlabeled or mislabeled containers.

**Maximum Storage Temperature:** Not determined.

## 8. Exposure controls/personal protection

### Control Parameters:

#### Occupational Exposure Limits

Chemical name	type	Exposure Limit Values	Source
Amorphous silica	REL	6 mg/m <sup>3</sup>	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Amorphous silica	TWA	20 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
Amorphous silica	TWA	0.8 mg/m <sup>3</sup>	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
Titanium dioxide - Total dust.	PEL	15 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Titanium dioxide - Total dust.	TWA	10 mg/m <sup>3</sup>	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Titanium dioxide	TWA	10 mg/m <sup>3</sup>	US. ACGIH Threshold Limit Values (02 2012)
Titanium dioxide - Respirable fraction.	TWA	1 mg/m <sup>3</sup>	US. ACGIH Notice of Intended Changes (NIC) to Threshold Limit Values (02 2013)
Ammonium hydroxide	STEL	35 ppm	US. ACGIH Threshold Limit Values (02 2012)
Ammonium hydroxide	TWA	25 ppm	US. ACGIH Threshold Limit Values (02 2012)
Ammonium hydroxide	STEL	35 ppm	27 mg/m <sup>3</sup> US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Ammonium hydroxide	REL	25 ppm	18 mg/m <sup>3</sup> US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Ammonium hydroxide	PEL	50 ppm	35 mg/m <sup>3</sup> US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)

#### Other exposure limits

Chemical name	type	Exposure Limit Values	Source
Sodium pyrophosphate	TWA	5 mg/m <sup>3</sup>	

#### Appropriate engineering controls:

Use material in well ventilated area only. Adequate ventilation should be provided so that exposure limits are not exceeded. Mechanical ventilation or local exhaust ventilation may be required.

#### Individual protection measures, such as personal protective equipment

##### General information:

Use personal protective equipment as required.

##### Eye/face protection:

If contact is likely, safety glasses with side shields are recommended.

##### Skin Protection

##### Hand Protection:

Suitable gloves can be recommended by the glove supplier. Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur wear chemically protective gloves.

##### Other:

Gloves, coveralls, apron, boots as necessary to minimize contact.

##### Respiratory Protection:

Use respirator with an organic vapor cartridge if exposure limit is exceeded. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator. Under normal use conditions, respirator is not usually required. Use appropriate respiratory protection if exposure to dust particles, mist or vapors is likely. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.

##### Hygiene measures:

Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product.

## 9. Physical and chemical properties

### Appearance

<b>Physical state:</b>	liquid
<b>Form:</b>	liquid
<b>Color:</b>	White
<b>Odor:</b>	Slight ammonia
<b>Odor threshold:</b>	No data available.
<b>pH:</b>	8.5 - 9.5
<b>Freezing point:</b>	No data available.
<b>Boiling Point:</b>	No data available.
<b>Flash Point:</b>	> 212 °F (100 °C) (Test method unavailable)
<b>Evaporation rate:</b>	No data available.
<b>Flammability (solid, gas):</b>	No data available.
<b>Upper/lower limit on flammability or explosive limits</b>	
<b>Flammability limit - upper (%):</b>	No data available.
<b>Flammability limit - lower (%):</b>	No data available.
<b>Explosive limit - upper (%):</b>	No data available.
<b>Explosive limit - lower (%):</b>	No data available.
<b>Vapor pressure:</b>	No data available.
<b>Vapor density:</b>	No data available.
<b>Relative density:</b>	1.13 68 °F (20 °C)
<b>Solubility(ies)</b>	
<b>Solubility in water:</b>	Soluble
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	No data available.
<b>Auto-ignition temperature:</b>	No data available.
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	20,000 - 30,000 mPa.s ( 77 °F (25 °C) )
<b>Other Information</b>	
<b>Bulk density:</b>	9 - 10.5 lb/gal 77 °F (25 °C)
<b>Percent Solid:</b>	56.5 - 58.5 % (Percent by Weight)

## 10. Stability and reactivity

<b>Reactivity:</b>	No data available.
<b>Chemical Stability:</b>	Material is stable under normal conditions.
<b>Possibility of Hazardous Reactions:</b>	Will not occur.
<b>Conditions to Avoid:</b>	Do not freeze.
<b>Incompatible Materials:</b>	Strong oxidizers
<b>Hazardous Decomposition Products:</b>	Thermal decomposition or combustion may generate smoke, carbon monoxide, carbon dioxide, hydrogen chloride, chlorinated compounds, and other products of incomplete combustion. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation:</b>	No data available.
<b>Ingestion:</b>	No data available.
<b>Skin Contact:</b>	Causes mild skin irritation.
<b>Eye contact:</b>	No data available.

### Information on toxicological effects

#### Acute toxicity

##### Oral

Product:	ATEmix > 10.000 mg/kg. May cause irritation of the gastrointestinal tract. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain.
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##### Dermal

Product:	ATEmix > 5000 mg/kg
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##### Inhalation

Product:	Not classified for acute toxicity based on available data. Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Persons with sensitive airways (e.g., asthmatics) may react to vapors. Avoid the inhalation of dust, mists, or vapors.
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##### Skin Corrosion/Irritation:

Product:	Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Remarks: Causes mild skin irritation.
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##### Serious Eye Damage/Eye Irritation:

Product:	Remarks: Not classified as a primary eye irritant.
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##### Respiratory sensitization:

No data available

##### Skin sensitization:

Sodium sulfonate	Classification: Not a skin sensitizer. (Literature)
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##### Specific Target Organ Toxicity - Single Exposure:

Ammonium hydroxide	Respiratory tract irritation.
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##### Aspiration Hazard:

No data available

##### Other effects:

Titanium dioxide	Lung
Ammonium hydroxide	Persons with sensitive airways (e.g., asthmatics) may react to vapors.
Vinyl chloride copolymer	Persons with sensitive airways (e.g., asthmatics) may react to vapors.

## Chronic Effects

### Carcinogenicity:

Product:	Diisononyl phthalate: A chronic dietary study in the rat resulted in an increased incidence of liver tumors.
Titanium dioxide	Titanium dioxide has been classified by IARC as possibly carcinogenic to humans (Group 2B) through inhalation. This classification is based on inadequate evidence for carcinogenicity in humans, but sufficient evidence of carcinogenicity in animals (rats). It should be noted that recent studies have demonstrated that the rat may be particularly sensitive to high levels of low toxicity dusts such as titanium dioxide. Epidemiology studies do not suggest an increased risk of cancer in humans from occupational exposure to titanium dioxide.

### IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Titanium dioxide	Overall evaluation: 2B. Possibly carcinogenic to humans.
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### US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

### Germ Cell Mutagenicity:

Sodium sulfonate	This material has not exhibited mutagenic or genotoxic potential in laboratory tests.
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### Reproductive toxicity:

No data available

### Specific Target Organ Toxicity - Repeated Exposure:

No data available

## 12. Ecological information

### Ecotoxicity

#### Fish

Amorphous silica	LC 50 (Zebra Fish, 4 d): > 5,000 mg/l
Sodium sulfonate	LC 50 (Not reported, 4 d): > 1 mg/l
Titanium dioxide	LC 50 (Fathead Minnow, 4 d): > 1,000 mg/l
Ammonium hydroxide	LC 50 (Not reported, 4 d): 0.11 mg/l

#### Aquatic Invertebrates

Amorphous silica	EC 50 (Water flea (Daphnia magna), 2 d): 7,600 mg/l
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#### Toxicity to Aquatic Plants

Amorphous silica	EC 50 (Alga, 3 d): 440 mg/l
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#### Toxicity to soil dwelling organisms

No data available

#### Sediment Toxicity

No data available

**Toxicity to Terrestrial Plants**

No data available

**Toxicity to Above-Ground Organisms**

No data available

**Toxicity to microorganisms**

Ammonium hydroxide

EC 50 (Sludge, 0.1 d): 5.01 mg/l

**Persistence and Degradability****Biodegradation**

Sodium sulfonate

OECD TG 301 B. 70 %, 28 d. Readily biodegradable

**Bioaccumulative Potential****Bioconcentration Factor (BCF)**

No data available

**Partition Coefficient n-octanol / water (log Kow)**

No data available

**Mobility:**

No data available

**Other Adverse Effects:**

No data available.

**13. Disposal considerations****Disposal instructions:**

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Dispose of packaging or containers in accordance with local, regional, national and international regulations. Empty container contains product residue which may exhibit hazards of product.

**Contaminated Packaging:**

Container packaging may exhibit hazards.

**14. Transport information****DOT**

UN Number:	UN 3082
UN Proper Shipping Name:	Environmentally hazardous substance, liquid, n.o.s.
Transport Hazard Class(es)	
Class:	9
Label(s):	9
Packing Group:	III
Marine Pollutant:	Yes
Special precautions for user:	None established
Reportable quantity	Sodium sulfonate 1000 lbs

**IMDG**

Not regulated.

**IATA**

Not regulated.

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

None known.

Shipping descriptions may vary based on mode of transport, quantities, temperature of the material, package size, and/or origin and destination it is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material. Review classification requirements before shipping materials at elevated temperatures.

## 15. Regulatory information

### US Federal Regulations

#### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

##### Hazard categories

Delayed  
(Chronic)  
Health Hazard

##### SARA 302 Extremely Hazardous Substance

##### SARA 304 Emergency Release Notification

##### SARA 311/312 Hazardous Chemical

##### SARA 313 (TRI Reporting)

This product may contain chemical(s) regulated under the Superfund Amendments and Reauthorization Act (SARA). For additional information please contact Lubrizol Customer Assistance: America(s): AmerLZAMCustomerAssistance@Lubrizol.com ; Europe: EMEAICustomerAssistance@Lubrizol.com ; Asia: APCustomerAssistance@Lubrizol.com

### US State Regulations

#### US. California Proposition 65

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

Titanium dioxide	1.524%
Vinyl chloride	17.00PPM
1, 4 Dioxane	906.00PPT
Acetaldehyde	906.00PPT
Ethylene oxide	906.00PPT

### Inventory Status

#### Australia (AICS)

All components are in compliance with chemical notification requirements in Australia.

#### Canada (DSL/NDL)

This product contains a substance that is not listed on the Canadian Domestic Substances List (DSL).

#### China (IECSC)

All components of this product are listed on the Inventory of Existing Chemical Substances in China.

#### European Union (REACH)

To obtain information on the REACH compliance status of this product, please visit [Lubrizol.com/REACH](http://Lubrizol.com/REACH), or e-mail us at [REACH\\_MSDS\\_INQUIRIES@Lubrizol.com](mailto:REACH_MSDS_INQUIRIES@Lubrizol.com)

#### Japan (ENCS)

All components are in compliance with the Chemical Substances Control Law of Japan.

#### Korea (ECL)

All components are in compliance in Korea.

#### New Zealand (NZIoC)

This product requires notification before sale in New Zealand.

#### Philippines (PICCS)

All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).

**Switzerland (SWISS)**

All components are in compliance with the Environmentally Hazardous Substances Ordinance in Switzerland.

**Taiwan (TCSCA)**

All components of this product are listed on the Taiwan inventory.

**United States (TSCA)**

This product is on the TSCA inventory. When used as a biocide it is regulated under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). This product is not FIFRA registered.

*The information that was used to confirm the compliance status of this product may deviate from the chemical information shown in Section 3.*

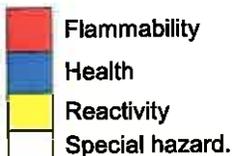
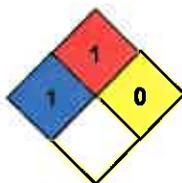
**16. Other information, including date of preparation or last revision**

**HMIS Hazard ID**

Health	*	1
Flammability		1
Physical Hazards		0

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; \*Chronic health effect

**NFPA Hazard ID**



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

<b>Issue Date:</b>	07/30/2015
<b>Version #:</b>	1.0
<b>Source of information:</b>	Internal company data and other publically available resources.
<b>Further Information:</b>	Contact supplier (see Section 1)
<b>Disclaimer:</b>	As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.

**ATTACHMENT I**  
**EMISSION UNITS TABLE**

**Attachment I**  
**Emission Units Table**  
(includes all emission units and air pollution control devices  
that will be part of this permit application review, regardless of permitting status)

Emission Unit ID <sup>1</sup>	Emission Point ID <sup>2</sup>	Emission Unit Description	Year Installed/Modified	Design Capacity	Type <sup>3</sup> and Date of Change	Control Device <sup>4</sup>
1S	1E	Foam Production Unit No. 1	1999	1,314,000 ft/yr	NA	NA
2S	2E	Bun Press No. 1	1989	NA	NA	NA
3S	3E	Hot Melt Laminator No. 1	2007	45.92 ft/min	NA	NA
4S	4E	Hot Melt Laminator No. 2	2012	45.92 ft/min	NA	NA
5S	5E	Buffer	2005	Variable	NA	1C, 2C
6S	6E	Misting Unit	2010	27.0 ft/min	NA	NA
7S	7E	Roll Coater No. 1 with Natural Gas Oven	2013	8.2 ft/min and Up Rate is Variable	Mod	NA
8S	8E	Solvent Cleaning Stations	1999/2007	NA	NA	NA
9S	9E	Lab Production Unit (R&D)	2011	Variable	NA	NA
10S	10E	ISO Tanks	1999	2 - 7,000 gallons 3 - 800 gallons	NA	NA
11S	11E	Glycol Tanks	1999	5 to 330 gallons	NA	NA
12S	12E	Vehicle Activity	1989	NA	NA	NA
13S	13E	Roll Coater No. 2 with Infrared Oven	2013	8.2 ft/min and Up Rate is Variable	Mod	NA
14S	14E	Solvent Cleaning Stations	2013	NA	NA	NA
15S	15E	Foam Production Unit No. 2	2016 - 2020	1,314,000 ft/yr	New	NA
16S	16E	ISO Tanks	2016 - 2020	2 - 7,000 gallons 3 - 800 gallons	New	NA
17S	17E	Glycol Tanks	2016 - 2020	5 to 330 gallons	New	NA
18S	18E	Bun Press No. 2	2016 - 2020	NA	New	NA
19S	19E	Hot Melt Laminator No. 3	2016 - 2020	4,592 ft/min	New	NA

<sup>1</sup> For Emission Units (or Sources) use the following numbering system: 1S, 2S, 3S,... or other appropriate designation.

<sup>2</sup> For Emission Points use the following numbering system: 1E, 2E, 3E, ... or other appropriate designation.

<sup>3</sup> New, modification, removal

<sup>4</sup> For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.



**ATTACHMENT J**

**EMISSION POINTS DATA SUMMARY SHEETS**

**Attachment J  
EMISSION POINTS DATA SUMMARY SHEET**

**Table 1: Emissions Data**

Emission Point ID No. (match Emission Units Table & Plot Plan)	Emission Point Type <sup>1</sup>	Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan)		Air Pollution Control Device (Must match Emission Units Table & Plot Plan)		Vent Time for Emission Unit (chemical processes only)		All Regulated Pollutants - Chemical Name/CAS <sup>3</sup> (Speciate VOCs & HAPS)	Maximum Potential Uncontrolled Emissions <sup>4</sup>		Maximum Potential Controlled Emissions <sup>5</sup>		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used <sup>6</sup>	Emission Concentration <sup>7</sup> (ppmv or mg/m <sup>3</sup> )
		ID No.	Source	ID No.	Device Type	Short Term <sup>2</sup>	Max (hr/yr)		Lb/hr	ton/yr	lb/hr	ton/yr			
1E	UV	1S	Foam Production Unit No. 1	NA	NA	NA	NA	VOC MDI	3.44 0.006	15.08 0.007	3.44 0.006	15.08 0.007	Gas/Vapor	EE	NA
2E	UV	2S	Bun Press No. 1	NA	NA	NA	NA	VOC Toluene	2.74 1.38	0.82 0.41	2.74 1.38	0.82 0.41	Gas/Vapor	EE	NA
3E	UV	3S	Hot Melt Laminator No. 1	NA	NA	NA	NA	VOC MDI	3.75 3.75	8.78 8.78	3.75 3.75	8.78 8.78	Gas/Vapor	EE	NA
4E	UV	4S	Hot Melt Laminator No. 2	NA	NA	NA	NA	VOC MDI	3.75 3.75	8.78 8.78	3.75 3.75	8.78 8.78	Gas/Vapor	EE	NA
5E	UV	5S	Buffer	NA	NA	NA	NA	PM2.5/PM10/PM	26.89	27.96	0.01	0.01	Solid	EE	NA
6E	UV	6S	Misting Unit	NA	NA	NA	NA	VOC Formaldehyde	0.6197 0.6197	0.4 0.4	0.6197 0.6197	0.4 0.4	Gas/Vapor	EE	NA
7E	UV	7S	Roll Coater No. 1 with Natural Gas Oven	NA	NA	NA	NA	CO NOx PM2.5/PM10/PM SO2 Lead VOC HAPS - VOC <sup>(2)</sup> TAPS <sup>(2)</sup>	0.56 0.66 0.06 0.01 0.0001 40.04 15.02 1.00	2.43 2.90 0.22 0.02 0.0001 43 <sup>(1)</sup> 25 <sup>(1)</sup> 5.50 <sup>(1)</sup>	0.56 0.66 0.06 0.01 0.0001 40.04 15.02 1.00	2.43 2.90 0.22 0.02 0.0001 43 <sup>(1)</sup> 25 <sup>(1)</sup> 5.50 <sup>(1)</sup>	Solid	EE	NA
8E	UV	8S	Solvent Cleaning Stations	NA	NA	NA	NA	VOC Glycol Ether EP	0.3 0.024	1.32 0.099	0.26 0.021	1.15 0.087	Gas/Vapor	AP-42	NA
9E	UV	9S	Lab Production Unit (R&D)	NA	NA	NA	NA	VOC MDI	Included with Foam Production				Gas/Vapor	EE	NA
10E	UV	10S	ISO Tanks FP Unit No. 1	NA	NA	NA	NA	VOC MDI	9.67E <sup>-4</sup> 9.67E <sup>-4</sup>	9.83E <sup>-4</sup> 9.83E <sup>-4</sup>	9.67E <sup>-4</sup> 9.567 <sup>-4</sup>	9.83E <sup>-4</sup> 9.83E <sup>-4</sup>	Gas/Vapor	EE	NA
11E	UV	11S	Glycol Tanks Foam Production Unit No. 1	NA	NA	NA	NA	VOC Glycol	2.67E <sup>-4</sup> 2.67E <sup>-4</sup>	1.17E <sup>-3</sup> 1.17E <sup>-3</sup>	2.67E <sup>-4</sup> 2.67E <sup>-4</sup>	1.17E <sup>-3</sup> 1.17E <sup>-3</sup>	Gas/Vapor	EE	NA

<sup>(1)</sup>Total shown for VOC emissions is the total for all roll coaters. The total for HAP and TAP emissions is a facility-wide not-to-exceed value.  
<sup>(2)</sup>HAP and TAP are not speciated here. To see individual HAP and TAP, refer to Attachment N.

**Attachment J  
EMISSION POINTS DATA SUMMARY SHEET**

**Table 1: Emissions Data**

Emission Point ID No. (Must match Emission Units Table & Plot Plan)	Emission Point Type <sup>1</sup>	Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan)		Air Pollution Control Device (Must match Emission Units Table & Plot Plan)		Vent Time for Emission Unit (chemical processes only)		All Regulated Pollutants - Chemical Name/CAS <sup>3</sup> (Speciate VOCs & HAPS)	Maximum Potential Uncontrolled Emissions <sup>4</sup>		Maximum Potential Controlled Emissions <sup>5</sup>		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used <sup>6</sup>	Emission Concentration (ppmv or mg/m <sup>3</sup> ) <sup>7</sup>
		ID No.	Source	ID No.	Device Type	Short Term <sup>2</sup>	Max (hr/yr)		Lb/hr	ton/yr	lb/hr	ton/yr			
12E	Fugitive	12S	Vehicle Activity	NA	NA	NA	NA	See Attachment K	12E	Fugitive	12S	Vehicle Activity	NA	NA	NA
13E	UV	7S	Roll Coater No. 1 with Infrared Oven	NA	NA	NA	NA	VOC HAPS - VOC TAPS	40 15 1.00	See 7E	50 15 1.00	See 7E	Gas/Vapor	EE	NA
14E	UV	14S	Solvent Cleaning Station	NA	NA	NA	NA	VOC HAPS - VOC	0.30 0.002	1.32 0.008	0.26 0.002	1.15 0.007	Gas/Vapor	AP-42	NA
15E	UV	15S	Foam Production Unit No. 2	NA	NA	NA	NA	VOC MDI	3.44 0.006	15.08 0.0007	3.44 0.007	15.08 0.007	Gas/Vapor	EE	NA
16E	UV	16S	ISO Tanks (FP Unit No. 2)	NA	NA	NA	NA	VOC MDI	9.67E <sup>-4</sup> 9.67E <sup>-4</sup>	9.83E <sup>-4</sup> 9.83E <sup>-4</sup>	9.67E <sup>-4</sup> 9.67E <sup>-4</sup>	9.83E <sup>-4</sup> 9.83E <sup>-4</sup>	Gas/Vapor	EE	NA
17E	UV	17S	Glycol Tanks (FP Unit No. 2)	NA	NA	NA	NA	VOC Glycol	2.67E <sup>-4</sup> 2.67E <sup>-4</sup>	1.17E <sup>-3</sup> 1.17E <sup>-3</sup>	2.67E <sup>-4</sup> 2.67E <sup>-4</sup>	1.17E <sup>-3</sup> 1.17E <sup>-3</sup>	Gas/Vapor	EE	NA
18E	UV	18S	Bun Press No. 2	NA	NA	NA	NA	VOC Toluene	2.74 1.38	0.82 0.41	2.74 1.38	0.82 0.41	Gas/Vapor	EE	NA
19E	UV	19S	Hot Melt Laminator No. 3	NA	NA	NA	NA	VOC MDI	Included with Hot Melt Laminators (3E & 4E)				EE	NA	

**Attachment J  
EMISSION POINTS DATA SUMMARY SHEET**

**Table 1: Emissions Data**

Emission Point ID No. (Must match Emission Units Table & Plot Plan)	Emission Point Type <sup>1</sup>	Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan)		Air Pollution Control Device (Must match Emission Units Table & Plot Plan)		Vent Time for Emission Unit (chemical processes only)		All Regulated Pollutants - Chemical Name/CAS <sup>3</sup> (Speciate VOCs & HAPS)	Maximum Potential Uncontrolled Emissions <sup>4</sup>		Maximum Potential Controlled Emissions <sup>5</sup>		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used <sup>6</sup>	Emission Concentration <sup>7</sup> (ppmv or mg/m <sup>3</sup> )
		ID No.	Source	ID No.	Device Type	Short Term <sup>2</sup>	Max (hr/yr)		Lb/hr	ton/yr	lb/hr	ton/yr			
20E	UV	20S	Roll Coater No. 3 with Natural Gas Oven	NA	NA	NA	NA	CO	0.56	2.43	0.56	2.43	Solid/ Gas/Vapor	EE	NA
								NOx	0.66	2.90	0.66	2.90			
								PM2.5/PM10/PM	0.06	0.22	0.06	0.22			
								SO <sub>2</sub>	0.01	0.02	0.01	0.02			
								Lead	0.0001	0.0001	0.0001	0.0001			
VOC	40.04	See 7E	40.04	See 7E											
HAPS-VOC	15.02	See 7E	15.02	See 7E											
TAPS	1.00	See 7E	1.00	See 7E											
21E	UV	21S	Roll Coater No. 4 with Natural Gas Oven	NA	NA	NA	NA	CO	0.56	2.43	0.56	2.43	Solid/ Gas/Vapor	EE	NA
								NOx	0.66	2.90	0.66	2.90			
								PM2.5/PM10/PM	0.06	0.22	0.06	0.22			
								SO <sub>2</sub>	0.01	0.02	0.01	0.02			
								Lead	0.0001	0.0001	0.0001	0.0001			
VOC	40.04	See 7E	40.04	See 7E											
HAPS-VOC	15.02	See 7E	15.02	See 7E											
TAPS	1.00	See 7E	1.00	See 7E											
22E	UV	22S	Roll Coater No. 5 with Natural Gas Oven	NA	NA	NA	NA	CO	0.56	2.43	0.56	2.43	Solid/ Gas/Vapor	EE	NA
								NOx	0.66	2.90	0.66	2.90			
								PM2.5/PM10/PM	0.06	0.22	0.06	0.22			
								SO <sub>2</sub>	0.01	0.02	0.01	0.02			
								Lead	0.0001	0.0001	0.0001	0.0001			
VOC	40.04	See 7E	40.04	See 7E											
HAPS-VOC	15.02	See 7E	15.02	See 7E											
TAPS	1.00	See 7E	1.00	See 7E											
23E	UV	23S	Solvent Cleaning Station	NA	NA	NA	NA	VOC	0.3	1.32	0.26	1.15	Gas/Vapor	AP42	NA
								Glycol Ether EP	0.024	0.099	0.021	0.087			

**Attachment J  
EMISSION POINTS DATA SUMMARY SHEET**

**Table 1: Emissions Data**

Emission Point ID No. (Must match Emission Units Table & Plot Plan)	Emission Point Type <sup>1</sup>	Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan)		Air Pollution Control Device (Must match Emission Units Table & Plot Plan)		Vent Time for Emission Unit (chemical processes only)		All Regulated Pollutants - Chemical Name/CAS <sup>3</sup> (Speciate VOCs & HAPS)	Maximum Potential Uncontrolled Emissions <sup>4</sup>		Maximum Potential Controlled Emissions <sup>5</sup>		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used <sup>6</sup>	Emission Concentration <sup>7</sup> (ppmv or mg/m <sup>4</sup> )
		ID No.	Source	ID No.	Device Type	Short Term <sup>2</sup>	Max (hr/yr)		Lb/hr	ton/yr	lb/hr	ton/yr			
24E	UV	24S	Emergency Generator No. 1 (Diesel)	NA	NA	NA	NA	CO NOx PM2.5/PM10/PM SO <sub>2</sub> VOC HAPS-VOC	0.16	0.04	0.16	0.04	Solid/ Gas/Vapor	AP-42 and Manufacturer Specs.	NA
									1.40	0.35	1.40	0.35			
									0.08	0.02	0.08	0.02			
									0.31	0.08	0.31	0.08			
									0.39	0.10	0.39	0.10			
0.0041	0.0013	0.0041	0.0013												
25E	UV	25S	Flame Laminator No. 1	NA	NA	NA	NA	CO NOx PM2.5/PM10/PM SO <sub>2</sub> VOC HAPS-VOC Lead Formaldehyde HF HCN	1.56	6.82	1.56	6.82	Solid/ Gas/Vapor	Stack Test	NA
									0.55	2.42	0.55	2.42			
									0.59	2.57	0.59	2.57			
									0.01	0.01	0.01	0.01			
									2.03	8.89	2.03	8.89			
0.09	0.35	0.09	0.35												
0.01	0.01	0.01	0.01												
0.01	0.01	0.01	0.01												
0.01	0.01	0.01	0.01												
0.33	1.45	0.33	1.45												

Attachment J

EMISSION POINTS DATA SUMMARY SHEET

Table 2: Release Parameter Data									
Emission Point ID No. (Must match Emission Units Table)	Inner Diameter/Dimensions (in. or in by in.)	Temp. (°F)	Exit Gas		Emission Point Elevation (ft)			UTM Coordinates (km)	
			Volumetric Flow <sup>1</sup> (acfm) at operating conditions	Velocity (fps)	Ground Level (Height above mean sea level)	Stack Height <sup>2</sup> (Release height of emissions above ground level)	Northing	Easting	
1E	34	NA	~15,342	~40	~550	~30 (Top of Roof)			
2E	NA	NA	NA	NA	NA	NA			
3E	12	NA	~1,500	~33	~550	~30 (Top of Roof)			
4E	12	NA	~1,500	~33	~550	~30 (Top of Roof)			
5E	16	NA	~5,032	~60	~550	~30 (Top of Roof)			
6E	14	NA	~4,170	~65	~550	~30 (Top of Roof)		376.625	4,254.55754
7E	25 by 25	NA	~1,503	~86	~550	~30 (Top of Roof)			
8E	NA	NA	NA	NA	NA	NA			
9E	NA	NA	NA	NA	NA	NA			
10E	NA	NA	NA	NA	NA	NA			
11E	NA	NA	NA	NA	NA	NA			
12E									

See Attachment K -- Fugitive Emissions Data Summary Sheet

<sup>1</sup> Give at operating conditions. Include inerts.

<sup>2</sup> Release height of emissions above ground level.

**Attachment J**  
**EMISSION POINTS DATA SUMMARY SHEET**

**Table 2: Release Parameter Data**

Emission Point ID No. (Must match Emission Units Table)	Inner Diameter/ Dimensions (in. or in by in.)	Exit Gas		Emission Point Elevation (ft)			UTM Coordinates (km)	
		Temp. (°F)	Volumetric Flow <sup>1</sup> (acfm) at operating conditions	Velocity (fps)	Ground Level (Height above mean sea level)	Stack Height <sup>2</sup> (Release height of emissions above ground level)	Northing	Eastings
13E	NA	NA	NA	NA	~550	~30 (Top of Roof)		
14E	NA	NA	NA	NA	NA	NA		
15E	3d	NA	~15,342	~40	~550	~30 (Top of Roof)		
16E	NA	NA	NA	NA	NA	NA		
17E	NA	NA	NA	NA	NA	NA		
18E	NA	NA	NA	NA	NA	NA		
19E	12	NA	~1,500	~33	~550	~30 (Top of Roof)	376.625	4,254.55754
20E	5 by 25	NA	~1,503	~86	~550	~30 (Top of Roof)		
21E	5 by 25	NA	~1,503	~86	~550	~30 (Top of Roof)		
22E	25 by 25	NA	~1,503	~86	~550	~30 (Top of Roof)		
23E	NA	NA	NA	NA	NA	NA		
24E	NA	NA	NA	NA	NA	NA		
25E	NA	NA	NA	NA	~550	~30 (Top of Roof)		

<sup>1</sup> Give at operating conditions. Include inerts.  
<sup>2</sup> Release height of emissions above ground level.

**ATTACHMENT K**  
**FUGITIVE EMISSIONS DATA SUMMARY SHEETS**

## Attachment K

### FUGITIVE EMISSIONS DATA SUMMARY SHEET

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

#### APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS

1.) Will there be haul road activities?

Yes       No

If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.

2.) Will there be Storage Piles?

Yes       No

If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.

3.) Will there be Liquid Loading/Unloading Operations?

Yes       No

If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.

4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation?

Yes       No

If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.

5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)?

Yes       No

If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.

6.) Will there be General Clean-up VOC Operations?

Yes       No

If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.

7.) Will there be any other activities that generate fugitive emissions?

Yes       No

If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.

If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary."

FUGITIVE EMISSIONS SUMMARY		All Regulated Pollutants - Chemical Name/CAS <sup>1</sup>	Maximum Potential Uncontrolled Emissions <sup>2</sup>		Maximum Potential Controlled Emissions <sup>3</sup>		Est. Method Used <sup>4</sup>
			lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads	PM	2.70	2.03	2.70	2.03	AP-42	
	PM10	0.50	0.38	0.50	0.38		
	PM2.5	0.10	0.08	0.10	0.08		
Unpaved Haul Roads							
Storage Pile Emissions							
Loading/Unloading Operations							
Wastewater Treatment Evaporation & Operations							
Equipment Leaks							
General Clean-up VOC Emissions							
Other							

<sup>1</sup> List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS<sub>2</sub>, VOCs, H<sub>2</sub>S, Inorganics, Lead, Organics, O<sub>3</sub>, NO, NO<sub>2</sub>, SO<sub>2</sub>, SO<sub>3</sub>, etc. DO NOT LIST CO<sub>2</sub>, H<sub>2</sub>, H<sub>2</sub>O, N<sub>2</sub>, O<sub>2</sub>, and Noble Gases.

<sup>2</sup> Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

<sup>3</sup> Give rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

<sup>4</sup> Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

**ATTACHMENT L**  
**EMISSIONS UNIT DATA SHEETS**

**Attachment L  
EMISSIONS UNIT DATA SHEET  
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 1S and 15S

<p>1. Name or type and model of proposed affected source:</p> <p>Foam Production Units Nos. 1 and 2</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>ISO and POLY with additional additives as needed for the proper color, resistance, etc.</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>Foam Bun</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>NA</p>

\* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable): NA			
(a) Type and amount in appropriate units of fuel(s) to be burned:			
(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:			
(c) Theoretical combustion air requirement (ACF/unit of fuel):			
@		°F and	psia.
(d) Percent excess air:			
(e) Type and BTU/hr of burners and all other firing equipment planned to be used:			
(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:			
(g) Proposed maximum design heat input:			× 10 <sup>6</sup> BTU/hr.
7. Projected operating schedule:			
Hours/Day	24	Days/Week	7
		Weeks/Year	52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@	°F and	psia		
a. NO <sub>x</sub>			lb/hr	grains/ACF
b. SO <sub>2</sub>			lb/hr	grains/ACF
c. CO			lb/hr	grains/ACF
d. PM <sub>10</sub>			lb/hr	grains/ACF
e. Hydrocarbons			lb/hr	grains/ACF
f. VOCs	3.44 (Each)		lb/hr	NA grains/ACF
g. Pb			lb/hr	grains/ACF
h. Specify other(s)				
MDI	0.00564 (Each)		lb/hr	NA grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.  
 (2) Complete the Emission Points Data Sheet.

**9. Proposed Monitoring, Recordkeeping, Reporting, and Testing**

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING**

None

**RECORDKEEPING**

Track the amount of ISO purchased.

**REPORTING**

None

**TESTING**

None

**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

**10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty**

None

**Attachment L  
EMISSIONS UNIT DATA SHEET  
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 2S and 18S

<p>1. Name or type and model of proposed affected source:</p> <p>Bun Press No. 1 and No. 2</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>The Bun Press is a process where glue is applied to the end of each bun and then the ends of the bun are butted together and joined in the Bun Press. Glue is applied to the end of the buns with a brush. Heat for the Bun Press is electric. The emissions are from the glue and enter the atmosphere of the building.</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>Joined Buns</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>NA</p>

\* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable): NA			
(a) Type and amount in appropriate units of fuel(s) to be burned:			
(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:			
(c) Theoretical combustion air requirement (ACF/unit of fuel):			
@		°F and	psia.
(d) Percent excess air:			
(e) Type and BTU/hr of burners and all other firing equipment planned to be used:			
(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:			
(g) Proposed maximum design heat input:			× 10 <sup>6</sup> BTU/hr.
7. Projected operating schedule:			
Hours/Day	24	Days/Week	7
		Weeks/Year	52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:				
@		°F and		psia
a.	NO <sub>x</sub>		lb/hr	grains/ACF
b.	SO <sub>2</sub>		lb/hr	grains/ACF
c.	CO		lb/hr	grains/ACF
d.	PM <sub>10</sub>		lb/hr	NA grains/ACF
e.	Hydrocarbons		lb/hr	grains/ACF
f.	VOCs	2.74 (Each)	lb/hr	NA grains/ACF
g.	Pb		lb/hr	grains/ACF
h.	Specify other(s)			
	Toluene	1.38 (Each)	lb/hr	NA grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing  
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING**

None

**RECORDKEEPING**

Track the amount of glue purchased.

**REPORTING**

None

**TESTING**

None

**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

None

**Attachment L  
EMISSIONS UNIT DATA SHEET  
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 3S, 4S, and 19S

<p>1. Name or type and model of proposed affected source:</p> <p>Hot Melt Laminator No. 1 (3S), No. 2 (4S), and No. 3 (19S)</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>Foam and laminate material (variable) at 45.92 ft/min and 25 pounds (max) of glue per hour for each unit.</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>Laminated Foam</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>NA</p>

\* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable): NA

(a) Type and amount in appropriate units of fuel(s) to be burned:

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@

°F and

psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

(g) Proposed maximum design heat input:

× 10<sup>6</sup> BTU/hr.

7. Projected operating schedule:

Hours/Day

24

Days/Week

7

Weeks/Year

52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:				
@		°F and		psia
a.	NO <sub>x</sub>		lb/hr	grains/ACF
b.	SO <sub>2</sub>		lb/hr	grains/ACF
c.	CO		lb/hr	grains/ACF
d.	PM <sub>10</sub>		lb/hr	grains/ACF
e.	Hydrocarbons		lb/hr	grains/ACF
f.	VOCs	3.75 (Total for 3S, 4S, & 19S)	lb/hr	NA grains/ACF
g.	Pb		lb/hr	grains/ACF
h.	Specify other(s)			
	MDI	3.75 (Total for 3S, 4S, & 19S)	lb/hr	NA grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing  
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING**

None

**RECORDKEEPING**

Track the amount of glue purchased.

**REPORTING**

None

**TESTING**

None

**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

None

**Attachment L  
EMISSIONS UNIT DATA SHEET  
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 5S

<p>1. Name or type and model of proposed affected source:</p> <p>Buffer</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>Foam material is fed into the buffer to be sized down to a specific thickness.</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>Sized foam material.</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>NA</p>

\* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable): NA		
(a) Type and amount in appropriate units of fuel(s) to be burned:		
(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:		
(c) Theoretical combustion air requirement (ACF/unit of fuel): NA		
@	°F and	psia.
(d) Percent excess air:		
(e) Type and BTU/hr of burners and all other firing equipment planned to be used:		
(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:		
(g) Proposed maximum design heat input:		× 10 <sup>6</sup> BTU/hr.
7. Projected operating schedule:		
Hours/Day	24	Days/Week
		7
		Weeks/Year
		52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@	°F and	psia
a. NO <sub>x</sub>		lb/hr grains/ACF
b. SO <sub>2</sub>		lb/hr grains/ACF
c. CO		lb/hr grains/ACF
d. PM <sub>10</sub>	26.89	lb/hr NA grains/ACF
e. Hydrocarbons		lb/hr grains/ACF
f. VOCs		lb/hr grains/ACF
g. Pb		lb/hr grains/ACF
h. Specify other(s)		lb/hr grains/ACF
		lb/hr grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING**

None requested since unit discharges back into the facility.

**RECORDKEEPING**

None requested since unit discharges back into the facility.

**REPORTING**

None requested since unit discharges back into the facility.

**TESTING**

None requested since unit discharges back into the facility.

**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

None

**Attachment L  
EMISSIONS UNIT DATA SHEET  
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 6S

<p>1. Name or type and model of proposed affected source:</p> <p>Misting Unit</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>Foam at 27.0 ft/min. and Hycar 2679 (or equivalent)</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>Finished Foam</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>NA</p>

\* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable): NA					
(a) Type and amount in appropriate units of fuel(s) to be burned:					
(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:					
(c) Theoretical combustion air requirement (ACF/unit of fuel): NA					
@		°F and		psia.	
(d) Percent excess air:					
(e) Type and BTU/hr of burners and all other firing equipment planned to be used:					
(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:					
(g) Proposed maximum design heat input:					× 10 <sup>6</sup> BTU/hr.
7. Projected operating schedule:					
Hours/Day	24	Days/Week	7	Weeks/Year	52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@	NA	°F and	NA	psia
a. NO <sub>x</sub>		lb/hr		grains/ACF
b. SO <sub>2</sub>		lb/hr		grains/ACF
c. CO		lb/hr		grains/ACF
d. PM <sub>10</sub>		lb/hr		grains/ACF
e. Hydrocarbons		lb/hr		grains/ACF
f. VOCs	0.6197	lb/hr	NA	grains/ACF
g. Pb		lb/hr		grains/ACF
h. Specify other(s)				
Formaldehyde	0.6197	lb/hr	NA	grains/ACF
		lb/hr		grains/ACF
		lb/hr		grains/ACF
		lb/hr		grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing  
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING**

None

**RECORDKEEPING**

Total the amount of Hycar purchased.

**REPORTING**

None

**TESTING**

None

**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

None

**Attachment L  
EMISSIONS UNIT DATA SHEET  
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 7S, 20S, 21S, and 22S

<p>1. Name or type and model of proposed affected source:</p> <p>Roll Coater with Natural Gas Dryer No. 1 (7S), No. 3 (20S), No. 4 (21S), and No. 5 (22S).</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>Foam at 8.2 ft/min. and up (rate is variable) and chemical coating (See MSDSs)</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>Finished Foam</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>NA</p>

\* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

Natural Gas at an estimated 0.0066 MM scf/hr

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

Pipeline Quality Natural Gas

(c) Theoretical combustion air requirement (ACF/unit of fuel): NA

@

°F and

psia.

(d) Percent excess air: NA

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

Total 6.54 MM BTU/hr

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

NA

(g) Proposed maximum design heat input: 6.54 × 10<sup>6</sup> BTU/hr.

7. Projected operating schedule:

Hours/Day	24	Days/Week	7	Weeks/Year	52
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8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:					
@	NA	°F and		NA	psia
a.	NO <sub>x</sub>	0.66 (Each)	lb/hr	NA	grains/ACF
b.	SO <sub>2</sub>	0.01 (Each)	lb/hr	NA	grains/ACF
c.	CO	0.56 (Each)	lb/hr	NA	grains/ACF
d.	PM <sub>10</sub>	0.06 (Each)	lb/hr	NA	grains/ACF
e.	Hydrocarbons	NA	lb/hr	NA	grains/ACF
f.	VOCs	40.04 (Each)	lb/hr	NA	grains/ACF
g.	Pb	0.0001 (Each)	lb/hr	NA	grains/ACF
h.	Specify other(s)				
	HAPS	15.02 (Each)	lb/hr	NA	grains/ACF
	TAPS	1.0 (Each)	lb/hr		grains/ACF
			lb/hr		grains/ACF
			lb/hr		grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing  
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

<p><b>MONITORING</b></p> <p>None</p>	<p><b>RECORDKEEPING</b></p> <p>Track the amount of 4211 or other purchased.</p>
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<p><b>REPORTING</b></p> <p>None</p>	<p><b>TESTING</b></p> <p>None</p>
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**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

None

**Attachment L  
EMISSIONS UNIT DATA SHEET  
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 8S, 23S

1. Name or type and model of proposed affected source:

Solvent Cleaning Stations (8S for Foam Production Unit No. 1 and 23S for Foam Production Unit No. 2)

2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.

3. Name(s) and maximum amount of proposed process material(s) charged per hour:

There are two (2) solvent cleaning stations at the facility. They use three different chemicals.

4. Name(s) and maximum amount of proposed material(s) produced per hour:

Cleaned parts

5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:

NA

\* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable): NA

(a) Type and amount in appropriate units of fuel(s) to be burned:

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@

°F and

psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

(g) Proposed maximum design heat input:

× 10<sup>6</sup> BTU/hr.

7. Projected operating schedule:

Hours/Day

24

Days/Week

7

Weeks/Year

52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ \_\_\_\_\_ °F and \_\_\_\_\_ psia

a.	NO <sub>x</sub>		lb/hr		grains/ACF
b.	SO <sub>2</sub>		lb/hr		grains/ACF
c.	CO		lb/hr		grains/ACF
d.	PM <sub>10</sub>		lb/hr		grains/ACF
e.	Hydrocarbons		lb/hr		grains/ACF
f.	VOCs	0.08 (Each)	lb/hr	NA	grains/ACF
g.	Pb		lb/hr		grains/ACF
h.	Specify other(s)				
	Glycol Ether EP	0.024 (Each)	lb/hr	NA	grains/ACF
			lb/hr		grains/ACF
			lb/hr		grains/ACF
			lb/hr		grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing  
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING**

None

**RECORDKEEPING**

Amount of solvent purchased for use.

**REPORTING**

None

**TESTING**

None

**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

None

**Attachment L  
EMISSIONS UNIT DATA SHEET  
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 9S

<p>1. Name or type and model of proposed affected source:</p> <p>Lab Production Unit (R&amp;D)</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>This unit is a small foam production unit which is used to test mixes for production. Material is fed to the unit as required when production testing is occurring.</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>Foam</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>NA</p>

\* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable): NA

(a) Type and amount in appropriate units of fuel(s) to be burned:

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@

°F and

psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

(g) Proposed maximum design heat input:

× 10<sup>6</sup> BTU/hr.

7. Projected operating schedule:

Hours/Day

24

Days/Week

7

Weeks/Year

52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ \_\_\_\_\_ °F and \_\_\_\_\_ psia

a.	NO <sub>x</sub>	lb/hr	grains/ACF
b.	SO <sub>2</sub>	lb/hr	grains/ACF
c.	CO	lb/hr	grains/ACF
d.	PM <sub>10</sub>	lb/hr	grains/ACF
e.	Hydrocarbons	lb/hr	grains/ACF
f.	VOCs	See Foam Production Unit (1S) lb/hr	grains/ACF
g.	Pb	lb/hr	grains/ACF
h.	Specify other(s)		
	MDI	See Foam Production Unit (1S) lb/hr	grains/ACF
		lb/hr	grains/ACF
		lb/hr	grains/ACF
		lb/hr	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

**9. Proposed Monitoring, Recordkeeping, Reporting, and Testing**

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING**

None

**RECORDKEEPING**

None

**REPORTING**

None

**TESTING**

None

**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

**10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty**

None

**Attachment L  
EMISSIONS UNIT DATA SHEET  
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 10S and 16S

<p>1. Name or type and model of proposed affected source:</p> <p>ISO Tanks (2-7,000 gallon storage tanks, 3-800 gallon day tanks, and fugitives) for each Foam Production Unit (FP Unit No. 1 ISO Tanks 10S and FP Unit No. 2 ISO Tanks 16S)</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>NA</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>NA</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>NA</p>

\* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable): NA

(a) Type and amount in appropriate units of fuel(s) to be burned:

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@

°F and

psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

(g) Proposed maximum design heat input:

× 10<sup>6</sup> BTU/hr.

7. Projected operating schedule:

Hours/Day	24	Days/Week	7	Weeks/Year	52
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8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@	°F and	psia		
a. NO <sub>x</sub>			lb/hr	grains/ACF
b. SO <sub>2</sub>			lb/hr	grains/ACF
c. CO			lb/hr	grains/ACF
d. PM <sub>10</sub>			lb/hr	grains/ACF
e. Hydrocarbons			lb/hr	grains/ACF
f. VOCs	9.67E <sup>-4</sup> (Each)		lb/hr	NA grains/ACF
g. Pb			lb/hr	grains/ACF
h. Specify other(s)				
MDI	9.67E <sup>-4</sup> (Each)		lb/hr	NA grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing  
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

<p><b>MONITORING</b></p> <p>None</p>	<p><b>RECORDKEEPING</b></p> <p>None</p>
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<p><b>REPORTING</b></p> <p>None</p>	<p><b>TESTING</b></p> <p>None</p>
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**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

None

**Attachment L  
EMISSIONS UNIT DATA SHEET  
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 11S and 17S

<p>1. Name or type and model of proposed affected source:</p> <p>Glycol Tanks (5 to 330 gallon small tanks and totes and fugitives) for each Foam Production (FP) Unit (FP Unit No. 1 Glycol Tanks 11S and FP Unit No. 2 Glycol Tanks 17S)</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>NA</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>NA</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>NA</p>

\* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable): NA

(a) Type and amount in appropriate units of fuel(s) to be burned:

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@

°F and

psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

(g) Proposed maximum design heat input:

× 10<sup>6</sup> BTU/hr.

7. Projected operating schedule:

Hours/Day

24

Days/Week

7

Weeks/Year

52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ \_\_\_\_\_ °F and \_\_\_\_\_ psia

a.	NO <sub>x</sub>		lb/hr		grains/ACF
b.	SO <sub>2</sub>		lb/hr		grains/ACF
c.	CO		lb/hr		grains/ACF
d.	PM <sub>10</sub>		lb/hr		grains/ACF
e.	Hydrocarbons		lb/hr		grains/ACF
f.	VOCs	2.67E <sup>-4</sup> (Each)	lb/hr	NA	grains/ACF
g.	Pb		lb/hr		grains/ACF
h.	Specify other(s)				
	Glycol	2.67E <sup>-4</sup> (Each)	lb/hr	NA	grains/ACF
			lb/hr		grains/ACF
			lb/hr		grains/ACF
			lb/hr		grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing  
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING**

None

**RECORDKEEPING**

None

**REPORTING**

None

**TESTING**

None

**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

None

**Attachment L  
EMISSIONS UNIT DATA SHEET  
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 13S

<p>1. Name or type and model of proposed affected source:</p> <p>Roll Coater with Infrared (IR) Dryer</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>Foam at 8.2 ft/min. and up (rate is variable) and chemical coating (see MSDSs)</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>Finished Foam</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>NA</p>

\* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable): NA

(a) Type and amount in appropriate units of fuel(s) to be burned:

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

(c) Theoretical combustion air requirement (ACF/unit of fuel): NA

@

°F and

psia.

(d) Percent excess air: NA

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

(g) Proposed maximum design heat input: 6.54 × 10<sup>6</sup> BTU/hr.

7. Projected operating schedule:

Hours/Day	24	Days/Week	7	Weeks/Year	52
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8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:				
@	NA	°F and	NA	psia
a. NO <sub>x</sub>	NA	lb/hr	NA	grains/ACF
b. SO <sub>2</sub>	NA	lb/hr	NA	grains/ACF
c. CO	NA	lb/hr	NA	grains/ACF
d. PM <sub>10</sub>	NA	lb/hr	NA	grains/ACF
e. Hydrocarbons	NA	lb/hr	NA	grains/ACF
f. VOCs	40.0	lb/hr	NA	grains/ACF
g. Pb	NA	lb/hr	NA	grains/ACF
h. Specify other(s)				
HAPS	15.0	lb/hr	NA	grains/ACF
TAPS	1.0	lb/hr	NA	grains/ACF
		lb/hr		grains/ACF
		lb/hr		grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING

None

RECORDKEEPING

Track the amount of chemicals purchased

REPORTING

None

TESTING

None

**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

None

**Attachment L  
EMISSIONS UNIT DATA SHEET  
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 14S

1. Name or type and model of proposed affected source:

Solvent Cleaning Stations

2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.

3. Name(s) and maximum amount of proposed process material(s) charged per hour:

Parts to be cleaned

4. Name(s) and maximum amount of proposed material(s) produced per hour:

Cleaned parts

5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:

NA

\* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable): NA			
(a) Type and amount in appropriate units of fuel(s) to be burned:			
(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:			
(c) Theoretical combustion air requirement (ACF/unit of fuel):			
@		°F and	psia.
(d) Percent excess air:			
(e) Type and BTU/hr of burners and all other firing equipment planned to be used:			
(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:			
(g) Proposed maximum design heat input: <span style="float: right;">× 10<sup>6</sup> BTU/hr.</span>			
7. Projected operating schedule:			
Hours/Day	24	Days/Week	7
		Weeks/Year	52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:				
@		°F and		psia
a.	NO <sub>x</sub>		lb/hr	grains/ACF
b.	SO <sub>2</sub>		lb/hr	grains/ACF
c.	CO		lb/hr	grains/ACF
d.	PM <sub>10</sub>		lb/hr	grains/ACF
e.	Hydrocarbons		lb/hr	grains/ACF
f.	VOCs	0.30	lb/hr	NA grains/ACF
g.	Pb		lb/hr	grains/ACF
h.	Specify other(s)			
	HAPs – VOC	0.002	lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing  
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING**

None

**RECORDKEEPING**

Amount of solvent purchased for use

**REPORTING**

None

**TESTING**

None

**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

None

**Attachment L  
EMISSIONS UNIT DATA SHEET  
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): 25S

<p>1. Name or type and model of proposed affected source:</p> <p>Flame Laminator No. 1 (25S)</p>
<p>2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.</p>
<p>3. Name(s) and maximum amount of proposed process material(s) charged per hour:</p> <p>Foam and laminate material (variable) at 37 ft/min.</p>
<p>4. Name(s) and maximum amount of proposed material(s) produced per hour:</p> <p>Laminated Foam</p>
<p>5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:</p> <p>NA</p>

\* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

Natural Gas (1,000 Btu/scf) 400 scf/hr.

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

NA

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@

°F and

psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

0.4 MM Btu/hr.

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

NA

(g) Proposed maximum design heat input:

0.4

× 10<sup>6</sup> BTU/hr.

7. Projected operating schedule:

Hours/Day	24	Days/Week	7	Weeks/Year	52
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8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@	°F and		psia
a. NO <sub>x</sub>	0.55	lb/hr	NA grains/ACF
b. SO <sub>2</sub>	0.01	lb/hr	NA grains/ACF
c. CO	1.56	lb/hr	NA grains/ACF
d. PM <sub>10</sub>	0.59	lb/hr	NA grains/ACF
e. Hydrocarbons	NA	lb/hr	NA grains/ACF
f. VOCs	2.03	lb/hr	NA grains/ACF
g. Pb	0.01	lb/hr	NA grains/ACF
h. Specify other(s)			
MDI	0.04	lb/hr	NA grains/ACF
HF	0.01	lb/hr	NA grains/ACF
HCN	0.33		
HAP-VOC (N.G.)	0.01	lb/hr	NA grains/ACF
Formaldehyde	0.01	lb/hr	NA grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing  
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

<p><b>MONITORING</b></p> <p>None</p>	<p><b>RECORDKEEPING</b></p> <p>None</p>
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<p><b>REPORTING</b></p> <p>None</p>	<p><b>TESTING</b></p> <p>None</p>
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**MONITORING.** PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

**RECORDKEEPING.** PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

**REPORTING.** PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

**TESTING.** PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

None

## EMERGENCY GENERATOR ENGINE DATA SHEET

Source Identification Number <sup>1</sup>	24S						
Engine Manufacturer and Model	Perkins/3054C						
Manufacturer's Rated bhp/rpm	157.5 HP @ 1,800						
Source Status <sup>2</sup>	ES						
Date Installed/Modified/Removed <sup>3</sup>	2007						
Engine Manufactured/Reconstruction Date <sup>4</sup>	2007						
Is this a Certified Stationary Spark Ignition Engine according to 40CFR60 Subpart III? (Yes or No) <sup>5</sup>	Yes (Tier II)						
Is this a Certified Stationary Spark Ignition Engine according to 40CFR60 Subpart JJJJ? (Yes or No) <sup>6</sup>	NA						
Engine, Fuel and Combustion Data	Engine Type <sup>7</sup>	NA					
	APCD Type <sup>8</sup>	A/F					
	Fuel Type <sup>9</sup>	2FO					
	H <sub>2</sub> S (gr/100 scf)	NA					
	Operating bhp/rpm	157.5 HP					
	BSFC (Btu/bhp-hr)	NA					
	Fuel throughput (ft <sup>3</sup> /hr)	7.84 gal/hr					
	Fuel throughput (MMft <sup>3</sup> /yr)	NA					
	Operation (hrs/yr)	500					
Reference <sup>10</sup>	Potential Emissions <sup>11</sup>	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
	NO <sub>x</sub>	1.40	0.35				
	CO	0.16	0.04				
	VOC	0.39	0.10				
	SO <sub>2</sub>	0.31	0.08				
	PM <sub>10</sub>	0.08	0.02				
	Formaldehyde	0.0013	0.0003				

1. Enter the appropriate Source Identification Number for each emergency generator. Generator engines should be designated EG-1, EG-2, EG-3 etc. If more than three (3) engines exist, please use additional sheets.
2. Enter the Source Status using the following codes:

NS	Construction of New Source (installation)	ES	Existing Source
MS	Modification of Existing Source	RS	Removal of Source
3. Enter the date (or anticipated date) of the engine's installation (construction of source), modification or removal.
4. Enter the date that the engine was manufactured, modified or reconstructed.

- Is the engine a certified stationary spark ignition internal combustion engine according to 40CFR60 Subpart IIII. If so, the engine and control device must be operated and maintained in accordance with the manufacturer's emission-related written instructions. You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. If the certified engine is not operated and maintained in accordance with the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and you must demonstrate compliance according to 40CFR§60.4210 as appropriate.

**Provide a manufacturer's data sheet for all engines being registered.**

- Is the engine a certified stationary spark ignition internal combustion engine according to 40CFR60 Subpart JJJJ. If so, the engine and control device must be operated and maintained in accordance with the manufacturer's emission-related written instructions. You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. If the certified engine is not operated and maintained in accordance with the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and you must demonstrate compliance according to 40CFR§60.4243a(2)(i) through (iii), as appropriate.

**Provide a manufacturer's data sheet for all engines being registered.**

- Enter the Engine Type designation(s) using the following codes:

LB2S	Lean Burn Two Stroke	RB4S	Rich Burn Four Stroke
LB4S	Lean Burn Four Stroke		

- Enter the Air Pollution Control Device (APCD) type designation(s) using the following codes:

A/F	Air/Fuel Ratio	IR	Ignition Retard
HEIS	High Energy Ignition System	SIPC	Screw-in Precombustion Chambers
PSC	Prestratified Charge	LEC	Low Emission Combustion
NSCR	Rich Burn & Non-Selective Catalytic Reduction	SCR	Lean Burn & Selective Catalytic Reduction

- Enter the Fuel Type using the following codes:

PQ	Pipeline Quality Natural Gas	RG	Raw Natural Gas
2FO	#2 Fuel Oil	LPG	Liquid Propane Gas

- Enter the Potential Emissions Data Reference designation using the following codes. Attach all referenced data to this *Compressor/Generator Data Sheet(s)*.

MD	Manufacturer's Data	AP	AP-42	
GR	GRI-HAPCalc™	OT	Other _____	(please list)

- Enter each engine's Potential to Emit (PTE) for the listed regulated pollutants in pounds per hour and tons per year. PTE shall be calculated at manufacturer's rated brake horsepower and may reflect reduction efficiencies of listed Air Pollution Control Devices. Emergency generator engines may use 500 hours of operation when calculating PTE. PTE data from this data sheet shall be incorporated in the *Emissions Summary Sheet*.

## STORAGE TANK DATA SHEET

Source ID # <sup>1</sup>	Status <sup>2</sup>	Content <sup>3</sup>	Volume <sup>4</sup>	Dia <sup>5</sup>	Throughput <sup>6</sup>	Orientation <sup>7</sup>	Liquid Height <sup>8</sup>
The emergency generator does not have an external tank.							

1. Enter the appropriate Source Identification Numbers (Source ID #) for each storage tank located at the compressor station. Tanks should be designated T01, T02, T03, etc.
2. Enter storage tank Status using the following:
 

EXIST Existing Equipment
NEW Installation of New Equipment

REM Equipment Removed
3. Enter storage tank content such as condensate, pipeline liquids, glycol (DEG or TEG), lube oil, etc.
4. Enter storage tank volume in gallons.
5. Enter storage tank diameter in feet.
6. Enter storage tank throughput in gallons per year.
7. Enter storage tank orientation using the following:
 

VERT Vertical Tank
HORZ Horizontal Tank
8. Enter storage tank average liquid height in feet.

## Attachment L FUGITIVE EMISSIONS FROM PAVED HAULROADS

*INDUSTRIAL PAVED HAULROADS (including all equipment traffic involved in process, haul trucks, endloaders, etc.)*

I =	Industrial augmentation factor (dimensionless)	See Emissions Calculations for Inputs to Equation from AP-42, Section 13.2.1.
n =	Number of traffic lanes	
s =	Surface material silt content (%)	
L =	Surface dust loading (lb/mile)	

Item Number	Description	Mean Vehicle Weight (tons)	Miles per Trip	Maximum Trips per Hour	Maximum Trips per Year	Control Device ID Number	Control Efficiency (%)
1	Trucks	40	0.5	20	30,000	N	NA
2							
3							
4							
5							
6							
7							
8							

**Source:** AP-42 Fifth Edition – 11.2.6 Industrial Paved Roads

$$E = 0.077 \times I \times (4 + n) \times (s + 10) \times (L + 1000) \times (W + 3)^{0.7} = \text{lb/Vehicle Mile Traveled (VMT)}$$

Where:

I =	Industrial augmentation factor (dimensionless)	See Emissions Calculations for Inputs to Equation from AP-42, Section 13.2.1.
n =	Number of traffic lanes	
s =	Surface material silt content (%)	
L =	Surface dust loading (lb/mile)	
W =	Average vehicle weight (tons)	

For lb/hr:  $[\text{lb} \div \text{VMT}] \times [\text{VMT} \div \text{trip}] \times [\text{Trips} \div \text{Hour}] = \text{lb/hr}$

For TPY:  $[\text{lb} \div \text{VMT}] \times [\text{VMT} \div \text{trip}] \times [\text{Trips} \div \text{Hour}] \times [\text{Ton} \div 2000 \text{ lb}] = \text{Tons/year}$

### SUMMARY OF PAVED HAULROAD EMISSIONS (PM/PM10/PM2.5)

Item No.	Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY
1	2.70/0.50/0.10	2.03/0.38/0.08	2.70/0.50/0.10	2.03/0.38/0.08
2				
3				
4				
5				
6				
7				
8				
<b>TOTALS</b>	2.70/0.50/0.10	2.03/0.38/0.08	2.70/0.50/0.10	2.03/0.38/0.08

**ATTACHMENT M**

**AIR POLLUTION CONTROL DEVICE SHEETS**



### Gas Stream Characteristics

12. Particle characteristics (for particulate matter):			
Type of material: Dust		Particulate matter inlet rate to device:	lb/hr
Particle density: Variable		grains/ACF	
Emission rate at collector outlet:	lb/hr		
	grains/ACF		
13. Total flow rate:		14. Gas Stream Temperature:	
Design maximum:	acfm	Inlet:	°F
Average expected:	acfm	Outlet:	°F
15. Gas flow rate into collector:		acfm at	°F and PSIA
16. Viscosity of gas stream at the above temperature and pressure:			lb/sec-ft
17. Inlet gas velocity:		ft/sec	18. Particulate Grain Loading in grains/scf:
			Inlet:
			Outlet:
19. Supply a curve showing particulate collection efficiency versus gas volume from 25 to 100 percent of design rating of collector.			

### Particulate Distribution

20. Complete the table:	Particle Size Distribution at Inlet to Collector	Fraction Efficiency of Collector
Particulate Size Range (microns)	Weight % for Size Range	Weight % for Size Range
0 – 2		
2 – 4		
4 – 6		
6 – 8		
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		
80 – 90		
90 – 100		
>100		

This unit is to remove the large material prior to the gas stream entering the baghouse. Overall efficiency of the control system is based on the baghouse control and the fact that the system vents back into the building and not to the atmosphere outside.

21. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):  
None

22. Describe the collection material disposal system:  
Material is drummed for disposal.

23. Have you included **Mechanical Collector (Cyclone) Control Device** in the Emissions Points Data Summary Sheet?

**24. Proposed Monitoring, Recordkeeping, Reporting, and Testing**

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING:  
None

RECORDKEEPING:  
None

REPORTING:  
None

TESTING:  
None

MONITORING: Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.

RECORDKEEPING: Please describe the proposed recordkeeping that will accompany the monitoring.

REPORTING: Please describe any proposed emissions testing for this process equipment on air pollution control device.

TESTING: Please describe any proposed emissions testing for this process equipment on air pollution control device.

25. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.  
NA

26. Manufacturer's Guaranteed Control Efficiency for each air pollutant.  
NA

27. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.  
NA



22. Type of Pollutant(s) to be collected (if particulate give specific type):

Particulate from buffing operation.

23. Is there any SO<sub>3</sub> in the emission stream?  No  Yes SO<sub>3</sub> content: ppmv

24. Emission rate of pollutant (specify) into and out of collector at maximum design operating conditions:

Pollutant	IN		OUT	
	lb/hr	grains/acf	lb/hr	grains/acf
PM	197.36	NA	0.197	NA

25. Complete the table:

Particle Size Distribution at Inlet to Collector

Fraction Efficiency of Collector

Particulate Size Range (microns)

Weight % for Size Range

Weight % for Size Range

0 - 2	Distribution is not provided for this baghouse design.	
2 - 4		
4 - 6		
6 - 8		
8 - 10		
10 - 12		
12 - 16		
16 - 20		
20 - 30		
30 - 40		
40 - 50		
50 - 60		
60 - 70		
70 - 80		
80 - 90		
90 - 100		
>100		

26. How is filter monitored for indications of deterioration (e.g., broken bags)?

- Continuous Opacity
- Pressure Drop
- Alarms-Audible to Process Operator
- Visual opacity readings, Frequency:
- Other, specify:

27. Describe any recording device and frequency of log entries:

NA

28. Describe any filter seeding being performed:

None

29. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification):

None

30. Describe the collection material disposal system:

Material drops through rotary valve into waste hopper.

31. Have you included **Baghouse Control Device** in the Emissions Points Data Summary Sheet?

Yes

**32. Proposed Monitoring, Recordkeeping, Reporting, and Testing**

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

**MONITORING:** None since the system vents back into the building.

**RECORDKEEPING:** None since the system vents back into the building.

**REPORTING:** None since the system vents back into the building.

**TESTING:** None since the system vents back into the building.

**MONITORING:** Please list and describe the process parameters and ranges that are proposed to be monitored in order to demonstrate compliance with the operation of this process equipment or air control device.

**RECORDKEEPING:** Please describe the proposed recordkeeping that will accompany the monitoring.

**REPORTING:** Please describe any proposed emissions testing for this process equipment on air pollution control device.

**TESTING:** Please describe any proposed emissions testing for this process equipment on air pollution control device.

**33. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.**

100%

**34. Manufacturer's Guaranteed Control Efficiency for each air pollutant.**

99.90%

**35. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.**

Replace bags as needed.



# STERNVENT CO., INC.

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e-mail: info@sternvent.com

website: www.sternvent.com

NO. 9101 P. 2

## MANUAL FOR INSTALLATION, OPERATION AND SERVICE

### WARNING

This dust collector is to be used only

to collect URETHANE dust.

Any other use may cause a fire or  
explosion.

To insure proper operation and service of:

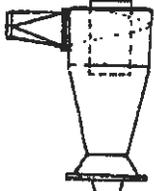
JOB NO. 4670/CURTIN MODEL NO. CYA4800

STYLE DRUM VOLTAGE 460

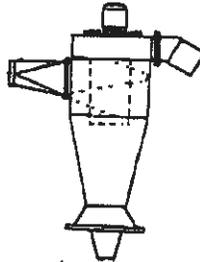
FILTER MEDIA COTTON

OPTIONS INCLUDED REMOTE BLOWER, SILENCERS  
AFTER FILTERS, MTZ SHAKERS, CONTROLLER

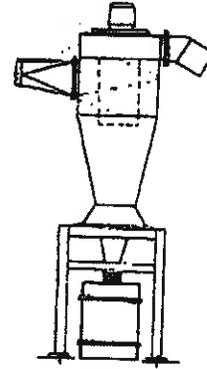
# Cyclone Dust Collector Styles



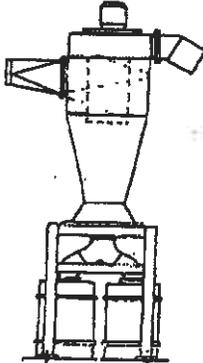
**CY**  
**SERIES 16-48**  
 Basic high efficiency cyclone.  
 Customer to provide blower.  
 CFM Range: 900 - 15,000



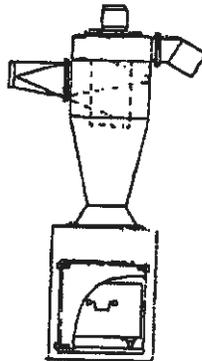
**CYM**  
**SERIES 16-48**  
 Basic cyclone with top mounted  
 blower. Must be attached to  
 100% airtight container.  
 CFM Range: 900 - 15,000



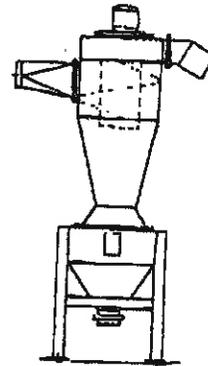
**CYD**  
**SERIES 16-36**  
 Cyclone, blower, support stand  
 and 55 gallon drum assembly.  
 CFM Range: 900 - 7,000



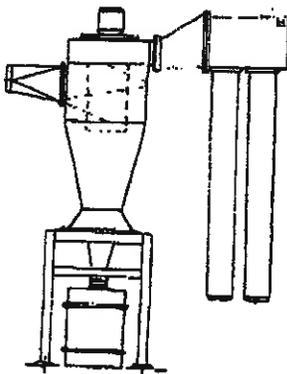
**CYA**  
**SERIES 20-36**  
 Cyclone blower, support stand  
 and 2 - 55 gal. drum assemblies.  
 CFM Range: 1,250 - 7,000



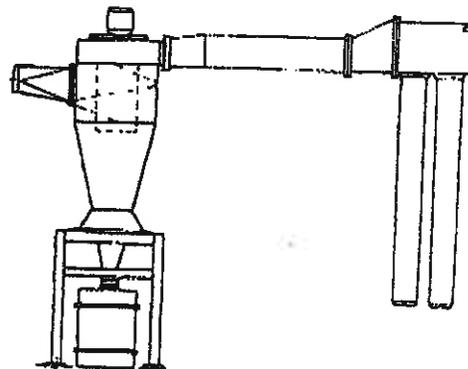
**CYB**  
**SERIES 16-30**  
 Cyclone, blower and dust  
 bin in enclosed cabinet.  
 CFM Range: 900 - 4,500



**CYH**  
**SERIES 24-48**  
 Cyclone, blower and hopper  
 with support stand  
 (Direct drive up to 15 HP  
 belt drive 20 HP & larger)  
 CFM Range: 2,000 - 15,000

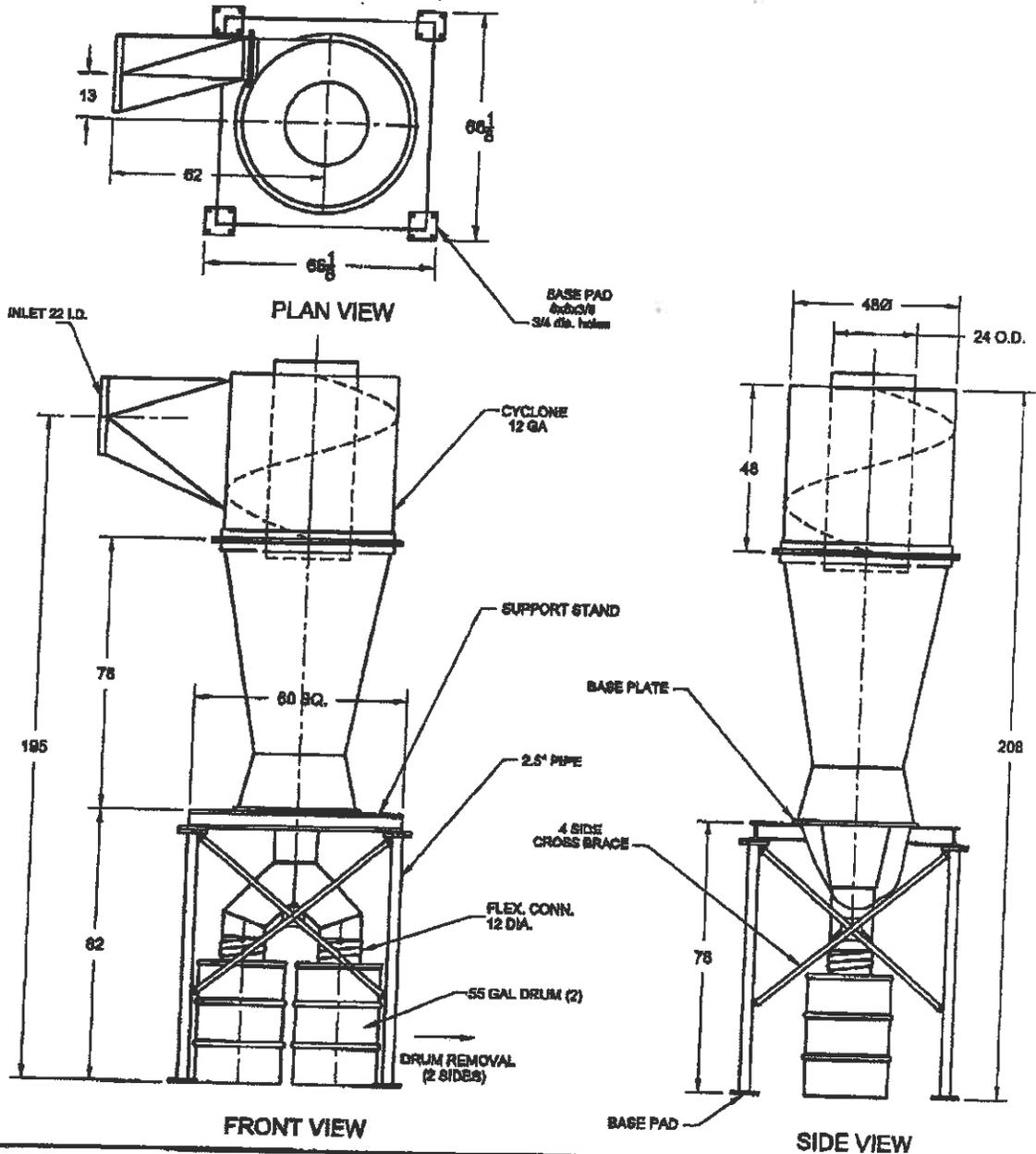


**CYD WITH OPEN AFTER FILTER**  
 For recirculating cleaned air  
 where allowable by law. Also  
 available enclosed and/or with  
 bin or hopper. After filter ceiling  
 supported



**CYD WITH SILENCER AND  
 OPEN AFTER FILTER**  
 For use when recirculation  
 of cleaned air, at low noise  
 level, is desired. After filter  
 ceiling supported

JOB NO 4670/Curtin



MULTIPLE RATING TABLES						NOTES 1. REMOTE MOUNTED BLOWER. 2. CYCLONE CAN BE INSTALLED AT 90° INCREMENTS IN FIELD.  THIS DRAWING NOT CERTIFIED UNLESS SIGNED BY STERNVENT ENGINEERING DEPARTMENT.
MODEL CYA-4800		MODEL		MODEL		
CFM	DELTA P "WG				CFM	
11,000	6.0					
SHIPPING WEIGHT 1900 LBS		SHIPPING WEIGHT		LBS SHIPPING WEIGHT		
SPECIFICATIONS			OPTIONS			
1. DUST STORAGE: 2-55 GALLON DRUM 2. STD. FINISH: EXTERIOR RED OXIDE PRIMER & ONE COAT GRAY ENAMEL. SOME PARTS PAINTED WITH ONE COAT HEAT CURED GRAY POWDER SPRAY.  All rights to manufacture, copy, reproduce or dispose of this drawing or its contents are reserved unless otherwise specified in writing by Sternvent Co., Inc.			1. AFTER FILTER 2x612 SQ. FT. * 2. SILENCER 3. SPECIAL PAINT  * ADDITIONAL FILTER AREA MAY BE REQUIRED FOR SOME APPLICATIONS. DUST CHAMBER, HOPPER & ENCLOSURE AVAILABLE			
<b>STERNVENT CO. INC.</b> BOGOTA, N.J. 07603  SPECIFICATION DRAWING CYCLONE DUST COLLECTOR MODEL CYA-4800						
DATE: 09.01.			STYLE: HOPPER			
REV.			DWG NO 48CYA-000			

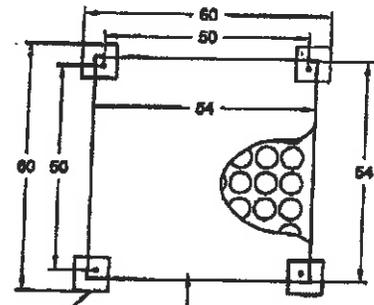
MODIFICATIONS

JOB NO 4670/CURTIN

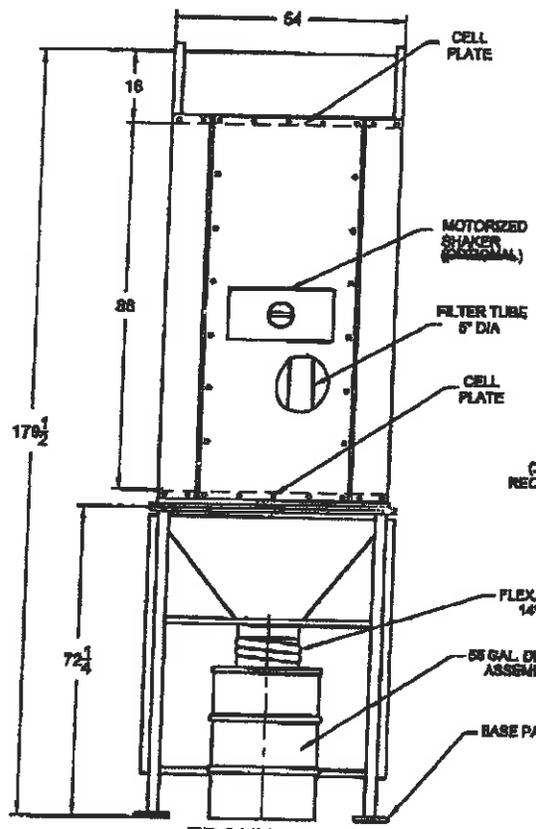
② UNITS

**INLET SELECTION**  
(SEE NOTES 1 & 2)

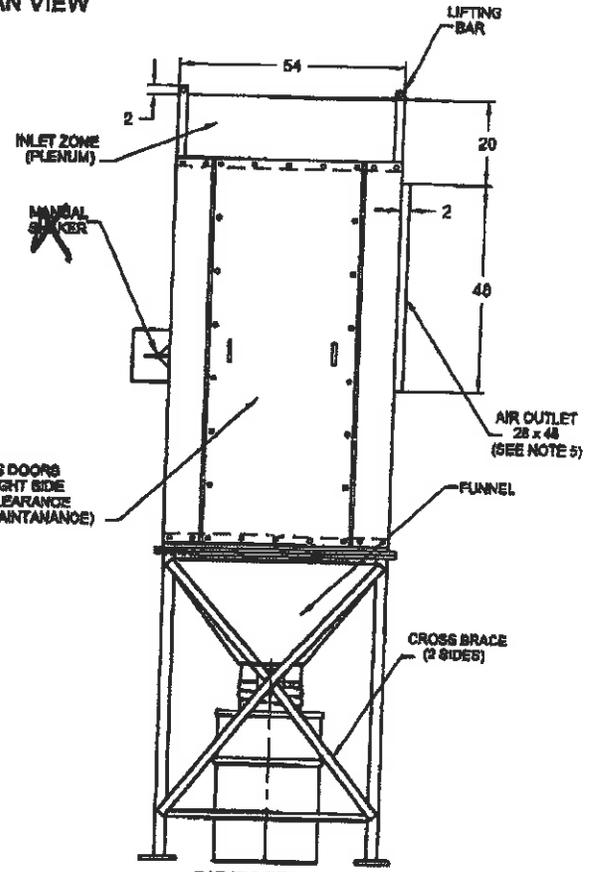
INLET LOCATION	
SIDE	<input checked="" type="checkbox"/>
TOP	<input type="checkbox"/>
INLET CUT BY:	
STERNVENT	<input checked="" type="checkbox"/>
OTHERS	<input type="checkbox"/>



BASE PAD (SEE 6)  
SHAKER LOCATION DUST REMOVAL (36" MIN. CLEARANCE REQD FOR MAINTANANCE)  
**PLAN VIEW**



**FRONT VIEW**



**SIDE VIEW**

**CFM CAPACITY AT TYPICAL AIR TO CLOTH RATIOS**

5:1	10:1	15:1
3060	6120	9180

**NOTES**

- IMPORTANT: WHEN THIS AFTER FILTER IS DIRECTLY ATTACHED TO CYCLONE AN OFFSET TRANSITION, SPECIAL LEGS AND/OR TOP ENTRY TRANSITION WITH 90 DEGREE ELBOW IS REQUIRED AT ADDITIONAL COST.
- INLET TO BE CUT IN BY OTHERS IF NOT SPECIFIED TO FACTORY. SEE DRAWING AFOO1 FOR DETAILS.
- SHIPPED WITH FILTER TUBES INSTALLED
- UNIT NOT FURNISHED WITH SLIDE GATE.
- AIR OUTLET MUST EITHER BE DUCTED OR FITTED WITH WEATHER ELBOW FOR WEATHERPROOF INSTALLATION.
- IT IS RESPONSIBILITY OF THE USER TO DETERMINE COMPLIANCE WITH LOCAL LAWS, OSHA, NFPA & INSURANCE COMPANY FOR RECIRCULATION OF FILTERED AIR FOR PARTICULAR APPLICATION.

**SPECIFICATIONS**

- FILTER AREA 612 SQ.FT.
- NO OF FILTER TUBES 64
- FILTER TUBE DIA. 5"x88"
- FILTER MEDIA COTTON SATEEN
- DRUM 55 GAL.
- CONSTRUCTION 14 GA MS
- FINISH: RED OXIDE PRIMER AND EXTERIOR ONE COAT GREY ENAMEL. SOME PARTS PAINTED WITH ONE COAT HEAT CURED GRAY POWDER SPRAY.
- SHIPPING WEIGHT 2250 LBS

**OPTIONS**

- SPECIAL FILTER MEDIA
  - MOTORIZED SHAKER
  - SHAKER CONTROLLER
  - 16 GAL CONTAINER INSTEAD OF 55 GAL DRUM
  - SIDE INLET CUTOUT
- THIS DRAWING NOT CERTIFIED UNLESS SIGNED BY STERNVENT ENGINEERING DEPARTMENT

MODIFICATIONS



**STERNVENT CO. INC.**  
BOGOTA, N.J. 07603

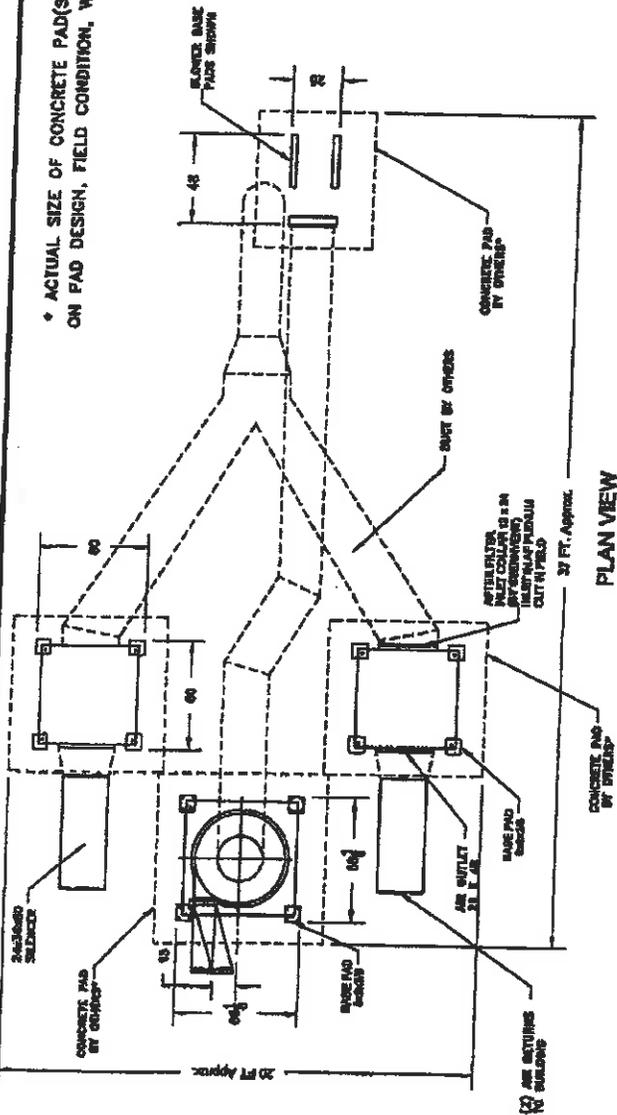
SPECIFICATION DRAWING  
**AFTER FILTER ENCLOSED**  
MODEL AFAE5612D

DATE: 08.01. STYLE: DRUM

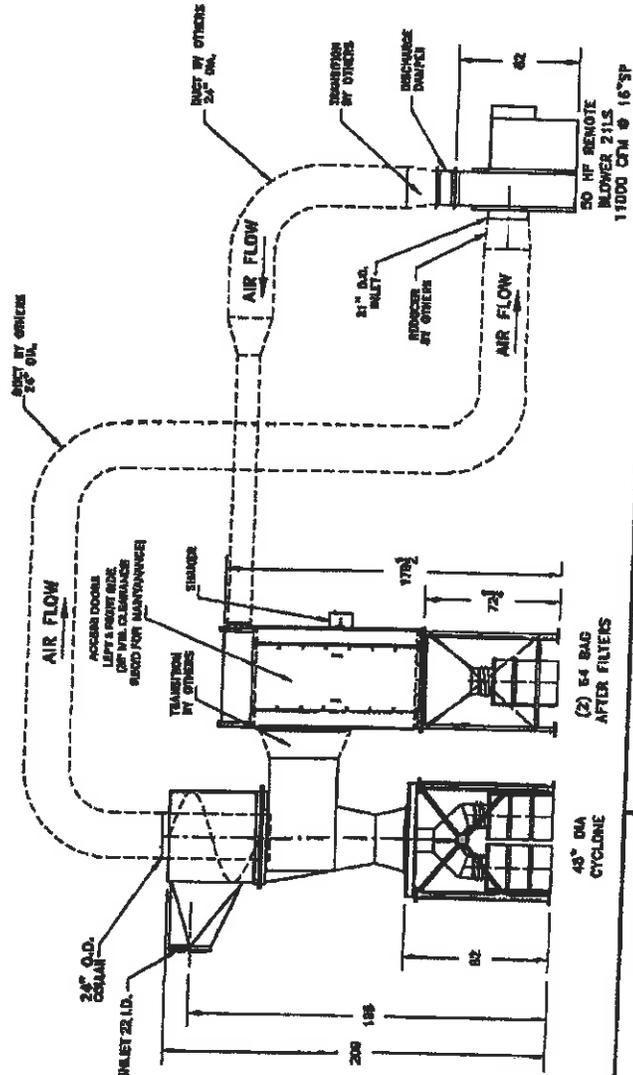
REV. DWG. NO 6AFEHOP-B

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\* ACTUAL SIZE OF CONCRETE PAD(S) IS DEPENDENT ON PAD DESIGN, FIELD CONDITION, WIND LOAD, ETC..



PLAN VIEW



**48" CYCLONE MODEL CYA4800,  
(2) AFTER FILTERS AFAE5612D AND REMOTE BLOWER  
TYPICAL INSTALLATION**

**STERNVENT CO. INC.**  
BOGOTA, N.J. 07603



DWG No: CY48(2)AEH-1

DWN. I.K.

DATE: 09.01.

SHEET OF

REV. A

**ATTACHMENT N**  
**SUPPORTING EMISSION CALCULATIONS**

By: PEW  
 Date: August 27, 2015

Checked By: ADM  
 Date: August 28, 2015

Change in PTE				
Emission Type	Uncontrolled		Controlled	
	lb/hr	tons/year	lb/hr	tons/year
CO	3.40	14.15	3.40	14.15
NOx	3.93	11.47	3.93	11.47
PM2.5	0.90	3.29	0.90	3.29
PM10	1.10	3.44	1.10	3.44
PM	2.20	4.27	2.20	4.27
SO <sub>2</sub>	0.35	0.15	0.35	0.15
VOC	209.92	71.10	209.94	71.18
Lead	0.01	0.01	0.01	0.01
VOC HAPS	71.93	20.24	71.94	20.25
Total HAPS	84.51	20.24	84.52	20.25

Existing Potential to Emit (1)				
Emission Type	Uncontrolled		Controlled	
	lb/hr	tons/year	lb/hr	tons/year
CO	0.56	2.43	0.56	2.43
NOx	0.66	2.90	0.66	2.90
PM2.5	27.00	28.22	0.12	0.27
PM10	27.20	28.37	0.32	0.42
PM	28.30	29.19	1.42	1.24
SO <sub>2</sub>	0.01	0.02	0.01	0.02
VOC	9.85	24.50	9.77	24.16
Lead	0.0001	0.0001	0.0001	0.0001
VOC HAPS	3.16	4.76	3.15	4.75
Total HAPS	3.16	4.76	3.15	4.75

Proposed Potential To Emit				
Emission Type	Uncontrolled		Controlled	
	lb/hr	tons/year	lb/hr	tons/year
CO	3.96	16.58	3.96	16.58
NOx	4.59	14.37	4.59	14.37
PM2.5	27.90	31.51	1.02	3.56
PM10	28.30	31.81	1.42	3.86
PM	30.50	33.46	3.62	5.51
SO <sub>2</sub>	0.36	0.17	0.36	0.17
VOC	219.77	95.60	219.71	95.34
Lead	0.01	0.01	0.01	0.01
Acrylonitrile	1.00	0.25	1.00	0.25
Formaldehyde	1.63	0.50	1.63	0.50
Vinylidene Chloride	1.00	1.00	1.00	1.00
Vinyl Chloride	1.00	0.50	1.00	0.50
Benzene	1.00	0.50	1.00	0.50
Ethylene Oxide	1.00	0.25	1.00	0.25
Propylene Oxide	1.00	2.50	1.00	2.50
Ethyl Acrylate	75.00	10.00	75.00	10.00
Antimony Compounds	75.00	10.00	75.00	10.00
Arsenic Compounds	75.00	10.00	75.00	10.00
Triethylamine	75.00	10.00	75.00	10.00
Styrene	75.00	10.00	75.00	10.00
MDI	78.84	10.00	78.84	10.00
Toluene	77.77	10.00	77.77	10.00
Glycol Ethers	75.03	10.00	75.02	10.00
Ethylene Glycol	75.00	10.00	75.00	10.00
1,4 Dioxane	75.00	10.00	75.00	10.00
Acetaldehyde	75.00	10.00	75.00	10.00
VOC HAPS	75.09	25.00	75.09	25.00
Total HAPS (2)	87.67	25.00	87.67	25.00
Total TAPS	5.63	5.50	5.63	5.50

(1) Existing PTE from Class II Administrative Update to Permit R13-2948, POTESTA Project No. 0101-13-0374.

(2) Roll Coaters have a maximum HAP PTE of 75 lb/hr. Total HAPS were calculated by summing facility-wide HAPS with 75 lb/hr for Roll Coaters. Facility-wide single HAPS are not to exceed 10 tons per year and facility-wide total aggregated HAPS are not to exceed 25 tons per year.

Rubberlite, Inc.  
Foam Production

POTESTA & ASSOCIATES, INC.  
Project No. 0101-15-0160

By: PEW  
Date: August 27, 2015

Checked By: ADM  
Date: August 28, 2015

**Foam Production Units No. 1 (1S), No. 2 (15S) and Lab Production Unit (9S)**

Rubberlite utilizes a Part A and Part B (Isocyanate and Poly Resin) foam production process. The emissions vary depending on the specific formula which is being produced. The following five (5) pages provide the emissions estimate for one (1) foam production line.

Emissions (One Production Line)				
	Uncontrolled		Controlled	
Type	lbs/hr	tpy	lbs/hr	tpy
VOC	3.44	15.08	3.44	15.08
MDI	0.0056	0.0065	0.0056	0.0065

Emissions (Both Production Lines)				
	Uncontrolled		Controlled	
Type	lbs/hr	tpy	lbs/hr	tpy
VOC	6.89	30.16	6.89	30.16
MDI	0.0113	0.0130	0.0113	0.0130

Emissions Comparison and Maximum Emissions (highlighted)

Product	Length	Thru put (Lbs./min.)	Process time (min)	Line Speed (ft/min)	Time material is on site (min)	TEDA*	BDMAEE*	1,2DMI* TMHDA*	CO <sub>2</sub> *	MDI	Max Ft Ram/ Year (1 Cycle)	Tons of VOC/ YEAR (1 Cycle)	VOC LBS/ Hour	Tons of CO <sub>2</sub> / year	CO <sub>2</sub> LBS/ Hour	Tons of HAP/ Year	HAP LBS/ Hour					
1	3402	74.07	324.04	10.5	1440.00	29.54	36.55	0.00	593.41	0.03	1241890	12.06	2.75	106.47	24.31	0.002556	0.000334					
2	3337	77.42	333.74	10	1440.00	28.51	32.40	0.00	512.85	0.03	1218141	11.11	2.54	93.89	21.37	0.00529	0.005210					
3	2359	68.47	277.51	8.5	1440.00	24.36	31.71	0.00	393.89	0.01	860960	10.23	2.34	71.85	16.40	0.00207	0.002453					
4	3025	71.43	338.10	9	1440.00	27.01	32.94	0.00	450.13	0.02	1104087	10.94	2.50	82.15	18.76	0.00339	0.003315					
5	2094	66.96	220.42	9.5	1440.00	20.57	0.00	0.00	234.80	0.01	764313	3.75	0.86	42.81	9.77	0.001944	0.001944					
6	2503	65.11	312.93	8	1440.00	19.87	0.00	0.00	285.04	0.01	913747	3.87	0.88	52.02	11.88	0.00188	0.001878					
7	2312	77.52	271.95	8.5	1440.00	19.87	0.00	0.00	208.38	0.01	843739	3.59	0.82	38.03	8.88	0.00183	0.002334					
8	2149	90.18	269.62	8	1440.00	36.41	34.75	0.00	161.81	0.00	784358	12.99	2.96	29.53	6.74	0.00088	0.001075					
9	3343	67.31	351.89	9.5	1440.00	0.00	0.00	73.95	850.78	0.02	1220195	13.50	3.08	118.77	27.12	0.00445	0.004160					
10	3116	69.85	346.22	9	1440.00	0.00	0.00	70.62	552.37	0.02	1137940	12.89	2.94	100.81	23.02	0.00358	0.003397					
11	3241	66.67	360.11	9	1440.00	0.00	0.00	73.95	650.78	0.02	1182965	13.50	3.08	118.77	27.12	0.00385	0.003516					
12	3225	66.99	358.33	9	1440.00	29.71	15.78	0.00	811.36	0.02	1177125	8.30	1.88	111.57	25.47	0.00381	0.003500					
13	3287	64.81	328.70	10	1440.00	0.00	0.00	54.36	487.23	0.02	1189755	9.32	2.27	89.92	20.30	0.00277	0.002775					
14	2609	91.95	248.48	10.5	1440.00	0.00	0.00	31.55	308.51	0.01	952285	5.76	1.31	56.30	12.85	0.00151	0.002004					
15	4038	50.46	405.80	10	1440.00	25.45	10.80	0.00	879.75	0.02	1473872	9.43	2.16	160.55	36.86	0.00425	0.003462					
16	3819	59.7	401.99	9.5	1440.00	15.43	0.00	0.00	734.88	0.03	1983900	11.35	2.59	134.17	30.82	0.00505	0.004132					
17	5060	52.17	459.97	11	1440.00	33.61	0.00	0.00	939.04	0.04	1846793	6.13	1.40	77.38	17.13	0.00331	0.004648					
18	2700	67.5	276.92	9.75	1440.00	11.44	0.00	0.00	491.86	0.01	985600	8.42	1.92	89.73	20.49	0.00234	0.002784					
19	5607	41.1	509.69	11	1440.00	20.50	0.00	0.00	708.78	0.03	2046393	15.08	3.44	129.35	29.53	0.00610	0.003632					
20	5948	45.14	531.76	11	1440.00	20.20	0.00	0.00	758.28	0.03	2135778	14.86	3.39	138.39	31.59	0.00588	0.003634					
21	3647	62.5	383.93	9.5	1440.00	12.88	0.00	0.00	39.02	0.01	1331268	9.47	2.16	108.81	24.84	0.00256	0.002189					
22	3905	55.3	390.48	10	1440.00	37.19	0.00	0.00	484.85	0.02	1425260	8.79	1.55	86.48	20.20	0.00293	0.002464					
23	2584	62.5	271.97	9.5	1440.00	14.54	0.00	0.00	395.05	0.00	943045	10.69	2.44	71.73	16.38	0.00360	0.003667					
24	2704	71.04	300.42	9	1440.00	13.78	0.00	0.00	382.78	0.01	888875	10.14	2.31	69.86	15.95	0.00138	0.001514					
25	3534	64.52	353.36	10	1440.00	13.63	0.00	0.00	41.76	0.01	1289768	10.02	2.29	50.66	11.57	0.00143	0.001334					
26	2468	77.78	308.53	8	1440.00	17.27	0.00	0.00	277.56	0.01	900916	12.70	2.90	33.88	7.46	0.00100	0.001066					
27	2864.23	73.83	318.25	9	1440.00	30.71	14.48	0.00	606.64	0.02	1045442	8.25	1.88	110.71	25.28	0.00300	0.003096					
28	2564.36	72.85	269.93	9.5	1440.00	30.71	14.48	0.00	606.64	0.02	935993	8.25	1.88	110.71	25.28	0.00306	0.003128					
29	3288.70	76.43	313.02	10.5	1440.00	30.19	14.23	0.00	596.36	0.02	1199647	8.11	1.85	108.84	24.85	0.00368	0.003684					
30	3337.37	74.53	303.40	11	1440.00	29.32	13.82	0.00	579.14	0.02	1218141	7.87	1.80	105.69	24.13	0.00384	0.004169					
31	3575.76	75.47	317.85	11.25	1440.00	30.19	14.23	0.00	596.36	0.02	1305132	8.11	1.85	108.84	24.85	0.00384	0.003974					
32	3988.27	86.67	362.39	11	1440.00	29.58	13.94	0.00	583.99	0.02	1454980	7.94	1.81	106.58	24.33	0.00430	0.003899					
Average =																1203716	5.58	2.18	84.02	21.47	0.00326	0.00307
Maximum =																2135024	15.08	3.44	171.38	39.13	0.00650	0.00564

Note: Emissions provided by Rubberlite, Incorporated.

Production H Series Emissions													
Product	Total Poly	Length	Amount of Water In Batch	Amount of Catalyst A In Batch	Amount of Catalyst B In Batch	Amount of Catalyst C In Batch	Amount Of CO2 for Batch	Amount of BDMAEE for Batch	Amount of TEDA for Batch	LBS OF ISO	target Density (pcf)	Emissions of ISO	Emissions of MDI
1	24000	3402	238.67	29.83	89.50	0.00	583.41	36.55	29.54	14880	7	0.032748	0.0304555
2	24000	3337	209.80	24.68	86.39	0.00	512.85	32.40	28.51	14160	7	0.031163	0.0289818
3	24000	2359	161.06	26.84	73.82	0.00	393.69	31.71	24.36	7920	10	0.012201	0.0113471
4	24000	3025	184.14	26.60	81.84	0.00	450.13	32.94	27.01	12960	10	0.019966	0.018568
5	24000	2094	95.97	0.00	0.00	82.26	234.60	0.00	20.57	6480	13	0.007679	0.0071415
6	24000	2503	116.61	0.00	0.00	84.81	285.04	0.00	21.20	9360	13	0.011092	0.0103156
7	24000	2312	85.25	0.00	0.00	78.69	208.38	0.00	19.67	9600	13	0.011376	0.0105801
8	24000	2149	66.19	22.06	110.32	0.00	161.81	34.75	36.41	6720	20	0.005176	0.0048139

% of MDI IN ISO = 93  
K Factor = 0.94

Note: Emissions provided by Rubberfite, Incorporated.

Production S Series Emissions													
Product	Total Poly	Ft Ran	Amount of Water In Batch	Amount of Catalyst D In Batch	Amount of Catalyst B In Batch	Amount of CO2 for Batch	BADMEE for Batch	Amount of 1,2 DMI for Batch	Amount of TEDA for Batch	LBS OF ISO	Target Density (pcf)	Emissions of ISO	Emissions of MDI
9	24000	3343	266.23	147.90	0.00	650.78	0.00	73.95	0.00	26160	6	0.047875	0.0244
10	24000	3116	225.97	141.23	0.00	552.37	0.00	70.62	0.00	24480	7	0.038401	0.0196
11	24000	3241	266.23	147.90	0.00	650.78	0.00	73.95	0.00	26400	7	0.041412	0.0211
12	24000	3225	250.10	0.00	90.04	611.36	15.76	0.00	29.71	26160	7	0.041036	0.0209
13	24000	3287	199.32	108.72	0.00	487.23	0.00	54.36	0.00	27120	10	0.029779	0.0152
14	24000	2609	126.21	63.10	0.00	308.51	0.00	31.55	0.00	17760	12	0.016251	0.0083

% of MDI IN ISO = 51  
 K Factor = 0.67

Note: Emissions provided by Rubberlite, Incorporated.

**Production T Series Emissions**

Product	Total Poly	Ft Ran	Amount of Water in Batch	Amount of Catalyst E In Batch	Amount of Catalyst B In Batch	Amount of Catalyst C In Batch	Amount Of CO2 for Batch	Amount of TEDA for Batch	Amount of BDM/AEE for Batch	Amount of TMHDA for Batch	LEBS OF ISO	Target Density (pcf)	Emissions of ISO	Emissions of MDI
15	24000	4038	359.90	30.85	61.70	0.00	879.75	25.45	10.80	15.42	20400	5	0.044801	0.023296
16	24000	3819	300.63	93.53	0.00	0.00	734.88	15.43	0.00	46.77	24240	5	0.053234	0.027682
17	24000	5060	384.15	0.00	0.00	134.45	939.04	33.61	0.00	0.00	31200	5	0.068519	0.035663
18	24000	2700	201.13	69.36	0.00	0.00	491.66	11.44	0.00	34.68	18000	8	0.024706	0.012847
19	24000	5607	289.96	124.27	0.00	0.00	708.78	20.50	0.00	62.13	46800	8	0.064236	0.033403
20	24000	5849	310.20	122.45	0.00	0.00	758.28	20.20	0.00	61.22	45120	8	0.06193	0.032204
21	24000	3647	243.90	78.05	0.00	0.00	596.21	12.88	0.00	39.02	22080	9	0.026939	0.014008
22	24000	3905	198.35	0.00	0.00	148.76	484.85	37.19	0.00	0.00	28080	10	0.030833	0.016033
23	24000	2584	160.79	88.11	0.00	0.00	393.05	14.54	0.00	44.05	11520	15	0.008433	0.004385
24	24000	2704	156.59	83.51	0.00	0.00	382.78	13.78	0.00	41.76	19920	15	0.014582	0.007583
25	24000	3534	113.55	82.58	0.00	0.00	277.56	13.63	0.00	41.29	20640	15	0.015109	0.007857
26	24000	2468	73.27	104.67	0.00	0.00	179.10	17.27	0.00	52.33	19200	20	0.010541	0.005481

% of MDI IN ISO = 52  
K Factor = 0.67

Note: Emissions provided by Rubberlite, Incorporated.

Production V Series Emissions												
Product	Total Poly	Ft Ran	Amount of Water In Batch	Amount of Catalyst F In Batch	Amount of Catalyst G In Batch	Amount Of CO2 for Batch	Amount of TEDA for Batch	Amount of BDMAEE for Batch	LBS OF ISO	Target Density (pcf)	Emissions of ISO	Emissions of MDI
27	24000	2864	248.17	93.06	20.68	606.64	30.71	14.48	11040	5	0.0260544	0.016414
28	24000	2564	248.17	93.06	20.68	606.64	30.71	14.48	11280	5	0.0266208	0.016771
29	24000	3287	243.96	91.49	20.33	596.36	30.19	14.23	13560	5	0.0320016	0.020161
30	24000	3337	236.92	88.85	19.74	579.14	29.32	13.82	14160	5	0.0334176	0.021053
31	24000	3576	243.96	91.49	20.33	596.36	30.19	14.23	14160	5	0.0334176	0.021053
32	24000	3986	238.91	89.59	19.91	583.99	29.56	13.94	15840	5	0.03738241	0.023551

% of MDI IN ISO = 63.0  
K Factor = 0.72

Note: Emissions provided by Rubberlite, Incorporated.

By: PEW  
Date: August 27, 2015

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Date: August 28, 2015

**Bun Press No. 1 (2S) and No. 2 (18S)**

The adhesives used to join buns are Slocoum Adhesives Corp. V-4055 glue. The glue is in a pail and is applied manually with a brush to the end of the buns which are to be glued together. The VOC and HAP emissions are based on the weight percent of the material in the glue. The highest VOC and HAP emissions are used to establish the emissions from this process. Each unit uses a maximum of 300 gallons per year with an estimated 0.5 gallons per hour. Total use is 600 gallons per year with an estimated 1.0 gallon per hour.

V-4055

Glue Usage =	300	gallons/yr		
	0.50	gallons/hr	Rounding to =	2
Weight Per Gallon =	6.9124	lbs/gallon		
Pounds per Hr =	3.46	lbs/hr		
Pounds per Year =	2,074	lbs/yr		
Volatile Wt % =	79.3264%			
Pounds per Hour =	2.74	lbs/hr		
Tons per Year =	0.82	tpy		
Toluene Wt % =	40%	(Range of 22 to 40% per MSDS)		
Pounds per Hour =	1.38	lbs/hr		
Tons per Year =	0.41	tpy		

Emissions Per Unit				
	Uncontrolled		Controlled	
Type	lbs/hr	tpy	lbs/hr	tpy
VOC	2.74	0.82	2.74	0.82
Toluene	1.38	0.41	1.38	0.41

Total Bun Press Emissions				
	Uncontrolled		Controlled	
Type	lbs/hr	tpy	lbs/hr	tpy
VOC	5.48	1.65	5.48	1.65
Toluene	2.76	0.83	2.76	0.83

Rubberlite, Inc.  
Glue Laminators

POTESTA & ASSOCIATES, INC.  
Project No. 0101-15-0160

By: PEW  
Date: August 27, 2015

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**Glue Laminators (Hot Melt Laminator Units) No. 1 (3S), No. 2 (4S), and No. 3 (19S)**

The adhesive laminators are screen application type laminators which use glue to laminate foam with other materials. The glue is heated by an electric heating device to 250 to 275 degrees F so that it can be spread on the laminated side of the foam material to which the lamination material will be applied. The glues used are Bostic SG1582 and Dvnaht 6019.

**Glue Usage (Estimated by Client-One Unit)**

Pounds per Hour = 25 Max Rounding to = 2  
Pounds per Year = 117,000  
Number of Units = 3

MDI Content = 5.00% (Range of 0.1 to 5% per MSDS)

Portions of the MDI are used up in the bonding process to aid in the bonding of the laminate to the foam. The following estimate for the releases to the air are based on all the MDI being released to air.

**Glue Usage (Estimated by Client-All Units)**

Pounds per Hour = 75  
Pounds per Year = 351,000 Based on hours of operation.

**Emission Estimates (VOC and HAP)**

Pounds per Hour = 3.75  
Tons Per Year = 8.78

Emissions Per Unit				
Type	Uncontrolled		Controlled	
	lbs/hr	tpy	lbs/hr	tpy
VOC	1.25	2.93	1.25	2.93
MDI	1.25	2.93	1.25	2.93

Total Glue Laminator Emissions				
Type	Uncontrolled		Controlled	
	lbs/hr	tpy	lbs/hr	tpy
VOC	3.75	8.78	3.75	8.78
MDI	3.75	8.78	3.75	8.78

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**Buffer Unit (5S)**

Buffer emissions are based on the run time of the unit and the amount of material removed for the operation. This unit buffers foam to a tighter tolerance which is required by some customers. This unit is controlled by a baghouse system which vents back into the building. The building is utilized as a control device in addition to the baghouse. There are variances in the operation of the unit and the type of foam being buffered and the data on the variance is shown below. The requested emissions limit is based on the worst case of removal in Total Mass Removed which is highlighted below with a 20 percent buffer. PM, PM10, and PM2.5 are assumed to be equal for this process.

Hours of Operation = 2,080 hrs  
Requested Emissions Limit = 0.01 lb/hr  
0.01 tpy

Total Buffer Emissions				
Type	Uncontrolled		Controlled	
	lbs/hr	tpy	lbs/hr	tpy
PM	26.89	27.96	0.01	0.01
PM10	26.89	27.96	0.01	0.01
PM2.5	26.89	27.96	0.01	0.01

Actual Operations								
Material	Hours of Operation	Total Vol Removed cu ft	Specific Volume cu ft/lb	Total Mass Removed lb/hr	Baghouse Efficiency	Mass after BH lb/hr	Building Efficiency	Emissions to Atm. lb/hr
T1515 AM Tan	40.35	53.333333	0.0666667	19.826518	99.90%	0.0198265	75%	0.00496
T1515 Hypurcel	5.7	7.5	0.0666667	19.736842	99.90%	0.0197368	75%	0.00493
T1015 Black	32.02	65	0.1	20.299813	99.90%	0.0202998	75%	0.00507
T0812 Black	3.05	2.5	0.125	6.557377	99.90%	0.0065574	75%	0.00164
T0503 Grey	115.18	191.66667	0.2	8.3203102	99.90%	0.0083203	75%	0.00208
CTIFGT01 60"	82.87	140	0.1	16.89393	99.90%	0.0168939	75%	0.00422
CTIFGT02 61"	170.76	315.56958	0.1	18.480299	99.90%	0.0184803	75%	0.00462
XI42	10.25	21.75	0.2	10.609756	99.90%	0.0106098	75%	0.00265
Scc NAT	19.6	38.745	0.0769231	25.698214	99.90%	0.0256982	75%	0.00642
Scc Grey	40.14	83.022333	0.0769231	26.88815	99.90%	0.0268881	75%	0.00672
SCE42NEO	2.98	3.375	0.1111111	10.192953	99.90%	0.010193	75%	0.00255

522.9

Notes:

Settling Efficiency is based upon USEPA approved PM10 SIP building capture efficiency  
Baghouse efficiency is based upon manufacturer data for particulate size <10 micron  
Data shows that emissions are predominately (> 99%) < 10 micron

Calculations are based upon the following equation:

$$\{(\text{volume of total material removed-cu ft})/\text{hours of operation}\} * (\text{specific volume lb/cu ft}) = \text{pounds/hour}$$

Notes: a) specific volume is the inverse of density; b) total emissions prior to control devices

Material	Length ft	Width ft	Thickness removed in	Total Vol removed cu ft	Density lb/cu ft	specific volume cu ft/lb
T1515 AM Tan	6400	5	0.02	53.333333	15	0.0666667
T1515 Hypurcel Blue	900	5	0.02	7.5	15	0.0666667
T1015 Black	7800	5	0.02	65	10	0.1
T0812 Black	300	5	0.02	2.5	8	0.125
T0503 Grey	23000	5	0.02	191.66667	5	0.2
CTIFGT01 60"	16800	5	0.02	140	10	0.1
CTIFGT02 61"	37250	5.083	0.02	315.56958	10	0.1
XI42	2900	4.5	0.02	21.75	5	0.2
Scc NAT 62"	4500	5.166	0.02	38.745	13	0.0769231
Scc Grey 61"	9800	5.083	0.02	83.022333	13	0.0769231
SCE42NEO	450	4.5	0.02	3.375	9	0.1111111

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**Misting Unit (6S)**

**REDACTED JUNE 1, 2012**

The misting unit uses a material which is applied to allow a crust or skin to form on the foam. The emissions estimate is based on the amount of usage and the VOC and HAP in the material. The material contains formaldehyde which is both a VOC and a HAP.

**Concentration of H<sub>2</sub>CO in Hycar 2679**

Hycar 2679 is a solution of water and a latex compound. The latex compound contains a component called [REDACTED]. This [REDACTED] contains all of the formaldehyde groups. Of the latex solution, at most [REDACTED] is [REDACTED]. Based on the molecular weight of [REDACTED] (101.1 g/mole), [REDACTED] is formaldehyde (molecular weight of 30 g/mole). Based on this calculation the most formaldehyde that could be produced is [REDACTED] pound of every pound of Hycar 2679. The calculation is broken down as follows.

Hycar [REDACTED] water [REDACTED] latex solution

Hycar 2679 latex solution = [REDACTED] % NMA  
Molecular weight of [REDACTED] is 101.1 g/mole  
Molecular weight of Formaldehyde is 30 g/mole

$$30\text{g/mole} / 101.1\text{ g/mole} = 29.7\% \text{ H}_2\text{CO}$$

Concentration of H<sub>2</sub>CO in [REDACTED] lbs. Hycar 2679 is [REDACTED] X [REDACTED] = [REDACTED] lbs.

**Coat Weight**

$$[REDACTED] \text{ g/ft}^2$$

$$[REDACTED] \text{ g/ft}^2 = 0.017 \text{ lbs./ft}^2$$

**Chemical Amount per Liner foot**

The widest material that can run on this machine is 60" wide.

$$1 \text{ liner ft.} = 5 \text{ ft}^2$$

With a coat weight of [REDACTED] lbs./ft<sup>2</sup> the amount of chemical that is on a liner foot of material is:

$$[REDACTED] \text{ lbs./ft}^2 \times 5 \text{ ft}^2 = [REDACTED] \text{ lbs. of Hycar 2679 / liner ft.}$$

**Hourly Emissions**

The machine operating rate is 27 liner ft./min.

$$27 \text{ liner ft./min} \times [REDACTED] \text{ lbs./liner ft.} = [REDACTED] \text{ lbs. of Hycar 2679/min}$$

**REDACTED JUNE 1, 2012**

From the calculation on the amount of formaldehyde in the Hycar 2679 that there is [REDACTED] lbs. of H<sub>2</sub>CO/ lbs. of Hycar 2679.

$$[REDACTED] \text{ lbs of H}_2\text{CO / lbs. Hycar 2679} \times [REDACTED] \text{ lbs. of Hycar 2679/min} = [REDACTED] \text{ lbs. H}_2\text{CO / min}$$

$$0.0103 \text{ lbs. H}_2\text{CO / min} \times 60\text{min} = 0.6197 \text{ lbs.H}_2\text{CO/hr.}$$

**Yearly Emissions**

The maximum yearly emissions is based on a yearly usage of 200,000 pounds of Hycar 2679.

$$1 \text{ lbs. of Hycar 2679} = [REDACTED] \text{ lbs. of H}_2\text{CO}$$

$$1 \text{ lbs. of H}_2\text{CO} = [REDACTED] \text{ lbs. of Hycar 2679}$$

$$800 \text{ lbs. of H}_2\text{CO} = [REDACTED] \text{ lbs. of Hycar 2679}$$

**REDACTED JUNE 1, 2012**

Total Misting Unit Emissions				
Type	Uncontrolled		Controlled	
	lbs/hr	tpy	lbs/hr	tpy
VOC	0.6197	0.4	0.6197	0.4
Formaldehyde	0.6197	0.4	0.6197	0.4

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**Roll Coaters No. 1 through No. 5 (No. 1 (7S), No. 2 (13S), No. 3 (20S), No. 4 (21S), and No. 5 (22S))**

No. of Units = 5  
 VOC lbs/hr (all lines) = 200 Provided by Client  
 VOC tpy (all lines) = 43 Provided by Client  
 HAP lbs/hr (one line) = 15 Provided by Client  
 TAP lbs/hr (one line) = 1 Provided by Client

Roll Coater with NG Oven					4 units
	Uncontrolled		Controlled		
Type	lb/hr	tpy (1)	lb/hr	tpy (1)	
VOC	160.00	43	160.00	43	
HAP	60.00	(2)	60.00	(2)	
TAP	4.00	(2)	4.00	(2)	

NG Oven Emissions (Apollo Dryer)				
	Uncontrolled		Controlled	
Type	lb/hr	tpy	lb/hr	tpy
VOC	0.16	0.64	0.16	0.64
HAP	0.08	0.24	0.08	0.24
TAP	0.002	0.01	0.002	0.01

Roll Coater with IR Oven					1 unit
	Uncontrolled		Controlled		
Type	lb/hr	tpy	lb/hr	tpy	
VOC	40.00	(1)	40.00	(1)	
HAP	15.00	(2)	15.00	(2)	
TAP	1.00	(2)	1.00	(2)	

Total for All Roll Coaters and NG Oven				
	Uncontrolled		Controlled	
Type	lb/hr	tpy (1)	lb/hr	tpy (1)
VOC	200.16	43.64	200.16	43.64
HAP	75.08	(2)	75.08	(2)
TAP	5.00	(2)	5.00	(2)

(1) Total VOC for the roll coaters combined.

(2) See next page for HAP and TAP emissions from roll coating and page N15 for HAP and TAP from combustion in the dryers. Total facility wide HAP emissions are not to exceed 10 tpy per individual HAP or 25 tpy for total HAPs. Total TAP emissions not to exceed the specific TAP limit from Regulation 13 (Table- 13A) or 27 (Table A).

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 Date: August 28, 2015

**HAPs**

Pollutant	Per Coater	Facility Wide	
	lb/hr	tpy	Total (tpy)
Ethyl Acrylate	15	10	25
Ethylene Glycol		10	
Methylene Diphenyl Diisocyanate(MDI)		10	
Toluene		10	
Glycol Ethers		10	
Antimony Compounds		10	
Arsenic Compounds(inorganic including arsine)		10	
Triethylamine		10	
Styrene		10	
1,4 Dioxane		10	
Acetaldehyde		10	

**TAPs**

Pollutant	Per Coater	Facility Wide	
	lb/hr	tpy	Total (lbs/yr)
Acrylonitrile	1.0	0.25	500
Formaldehyde		0.50	1000
Vinylidene Chloride		1.00	2000
Vinyl Chloride		0.50	1000
Benzene		0.50	1000
Ethylene Oxide		0.25	500
Propylene Oxide		2.50	5000



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**Apollo Dryer for Roll Coater**

Fuel Type =	Natural Gas	
Ash Content (%) =	NA	
Sulfur Content (%) =	NA	
Heat Content of Fuel =	1,000	BTU/scf
Hours of Operation =	8,760	hrs/year
Heat Input =	1,650,000	kcal/hr
	Conversion from kcal to BTU =	3.966
		6.54
		MM BTU/hr
Fuel Usage =	0.0066	10 <sup>6</sup> scf per hour
	57.82	10 <sup>6</sup> scf/year
Number of Dryers =	4	Units

Note: this flame does not have any controls for emissions: therefore, uncontrolled is equal to potential maximum emissions.

Emissions Per Unit					
Emission Type	EF <sup>(a)</sup> lb/10 <sup>6</sup> scf	Uncontrolled		Controlled	
		lb/hr	tons/year	lb/hr	tons/year
CO	84	0.56	2.43	0.56	2.43
NOx	100	0.66	2.90	0.66	2.90
PM2.5 <sup>(1)</sup>	7.6	0.06	0.22	0.06	0.22
PM10 <sup>(1)</sup>	7.6	0.06	0.22	0.06	0.22
PM	7.6	0.06	0.22	0.06	0.22
SO <sub>2</sub>	0.6	0.01	0.02	0.01	0.02
VOC	5.5	0.04	0.16	0.04	0.16
HAPS- VOC <sup>(2)</sup>	1.88	0.02	0.06	0.02	0.06
Lead	0.0005	0.0001	0.0001	0.0001	0.0001
Formaldehyde	7.50E-02	0.0005	0.0022	0.0005	0.0022

Total Dryer Emissions					
Emission Type	EF <sup>(a)</sup> lb/10 <sup>6</sup> scf	Uncontrolled		Controlled	
		lb/hr	tons/year	lb/hr	tons/year
CO	84	2.24	9.72	2.24	9.72
NOx	100	2.64	11.60	2.64	11.60
PM2.5 <sup>(1)</sup>	7.6	0.24	0.88	0.24	0.88
PM10 <sup>(1)</sup>	7.6	0.24	0.88	0.24	0.88
PM	7.6	0.24	0.88	0.24	0.88
SO <sub>2</sub>	0.6	0.04	0.08	0.04	0.08
VOC	5.5	0.16	0.64	0.16	0.64
HAPS- VOC <sup>(2)</sup>	1.88	0.08	0.24	0.08	0.24
Lead	0.0005	0.0004	0.0004	0.0004	0.0004
Formaldehyde	7.50E-02	0.0020	0.0088	0.0020	0.0088

Rounding to = 2 Except as shown

Notes:

- 1 - It is assumed that TSP (PM) and PM2.5 are equal to PM10.
- 2 - Total VOC HAPS as listed in Table 1.4-3 (AP-42).

References:

- a. Emission factors from AP-42, 1.4, Natural Gas Combustion, 7/98.

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**Production Parts Washers (8S) and (23S)**

This VOC emissions estimate is for each parts washer system identified as 8S and 23S employed at the site. AP-42 is being used to estimate the emissions from these parts washers.

**Total Production Parts Washer**

	Uncontrolled	Controlled		
Emission Factor	0.33	0.2871	tpy/unit	Ref: AP-42, Table 4.6-2
Number of Units	2	2	No.	
Hours Per Year	8,760	8,760	hrs/yr	
Emission	1,320	1,148	lbs/yr	
VOC	0.15	0.13	lbs/hr	
VOC	0.66	0.57	tpy	
Emission Reduction for Cover =	13	%		Ref: AP-42, Table 4.6-3 Footnote E

**Single Parts Washer (VOC)**

Emission Factor	0.33	0.2871	tpy/unit	Ref: AP-42, Table 4.6-2
Number of Units	1	1	No.	
Hours Per Year	8,760	8,760	hrs/yr	
VOC Emission	660.0	574.2	lbs/yr	
	0.08	0.07	lbs/hr	
	0.33	0.29	tpy/unit	
Glycol Ether EPH Content =	30	%		
Glycol Ether EPH Emissions =	0.024	0.021	lbs/hr	
	0.099	0.087	tpy/unit	

Note: Glycol Ether EPH is only in the solvent in the Dip Tanks located with the Production Units.

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**Part Washers (14S)**

This emissions estimate is for a new parts washer materials employed at the site. AP-42 is being used to estimate the VOC emissions from the parts washers. HAPS are based on the percentage of HAPS contained in the washing fluid. Due to the low amount of HAPS the HAPS are not speciated.

	Uncontrolled	Controlled		
Emission Factor	0.33	0.2871	tpy/unit	Ref: AP-42, Table 4.6-2
Number of Units	4	4	No.	
Hours Per Year	8,760	8,760	hrs/yr	
Emission	2,640	2,297	lbs/yr	
VOC	0.30	0.26	lbs/hr	
VOC	1.32	1.15	tpy	
Emission Reduction for Cover =	13	%		Ref: AP-42, Table 4.6-3 Footnote E
HAPS	0.6	Percent (based on Glycol Ether DE MSDS)		
	0.002	0.002	lbs/hr	
	0.008	0.007	tpy	

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**ISO Storage Tanks (10S and 16S)**

Working losses occur when MDI/PMDI (R-1209) vapor that is present over the liquid in a storage tank is displaced from the tank by addition of MDI/PMDI (R-1209) liquid during tank filling. A reasonable worst case estimate of working losses can be made based on the size and number of storage tanks, the average storage temperature, and the number of times each tank is filled in one year. For an emissions estimate it is assumed each tank is filled a number of times per month. There are two sets of ISO storage tanks; one set for Foam Production Unit No. 1 and one set for Foam Production Unit No. 2.

The working losses can be estimated from the following expression:

$$Lw = Qw * (1 / 359) * (273.15 / Tamb) * (Vpamb / 760) * MW * Kmdi$$

- Lw = storage tank losses in lb/year
- Qw = annual throughput of MDI in ft<sup>3</sup>/year
- Tamb = ambient temperature in degrees K
- VPamb = vapor pressure of MDI at ambient temperature in mm Hg
- MW = molecular weight of MDI
- Kmdi = adjustment factor to the vapor pressure that is a function of

Tank Volume =	7,000	gallons	VPamb =	1.23E-05	mm Hg	2
1 Gallon =	0.1605	ft <sup>3</sup>	MW =	250.26	lb/lb-mol	3
Number of tanks =	2		Kmdi =	0.58		4
Tanks Fillings (each) =	24	each	Lw =	3.22E-04	lbs/year	
Volume =	336,000	gallons	Filling Time =	1	hr (assume one tanks at a time)	
Qw =	53,928.00	ft <sup>3</sup> /year	Lw =	6.70E-06	lbs/hr	
Tamb =	299.8	K		1.61E-07	tpy	

- 1 Stored inside at a temperature of 80 degrees F, equals 299.8 degrees K
- 2 Table 1, Appendix A - Vapor Pressure / Temperature Chart
- 3 MDI has a molecular weight of 250.26 lb/lb-mol
- 4 Table 2, Appendix B - Adjustment Factor

Storage Tank Emissions				
Type	Uncontrolled		Controlled	
	lbs/hr	tpy	lbs/hr	tpy
VOC	6.70E-06	1.61E-07	6.70E-06	1.61E-07
MDI	6.70E-06	1.61E-07	6.70E-06	1.61E-07

Total for 2 Units				
Type	Uncontrolled		Controlled	
	lbs/hr	tpy	lbs/hr	tpy
VOC	1.34E-05	3.22E-07	1.34E-05	3.22E-07
MDI	1.34E-05	3.22E-07	1.34E-05	3.22E-07

Since the material is stored indoors at a constant temperature there are no breathing losses associated with the process.  
Reference: This emissions estimate is adapted from the TRI Emissions Estimate prepared by Rubberlite, Incorporated.

By: PEW  
Date: August 27, 2015

Checked By: ADM  
Date: August 28, 2015

**Day Tank Losses (10S and 16S)**

Losses occur during the transfer from the storage tank and totes to the three day tanks. Losses occur when the MDI/PMDI vapor that is present over the liquid in the day tanks are displaced by the addition of MDI/PMDI liquid during tank filling. A reasonable worst case estimate of losses can be made based upon volume of material that is displaced for the year and the temperature assuming that the vapor space being displaced is saturated with MDI. For the emissions estimate it is assumed that the volume placed in the storage tanks is sent to the day tanks.

The working losses can be estimated from the following expression:

$$Ldt = Qw * (1 / 359) * (273.15 / Tamb) * (Vpamb / 760) * MW * Kmdi$$

Ldt = day tank losses in lb/year

Qw = annual throughput of MDI in ft<sup>3</sup>/year

Tamb = ambient temperature in degrees K

VPamb = vapor pressure of MDI at ambient temperature in mm Hg

MW = molecular weight of MDI

Kmdi = adjustment factor to the vapor pressure that is a function of MDI concentration in the feed stock and the temperature

Tank Volume =	800	gallons	VPamb =	1.23E-05	mm Hg	2
1 Gallon =	0.1605	ft <sup>3</sup>	MW =	250.26	lb/lb-mol	3
Number of tanks =	3		Kmdi =	0.58		4
Tanks Fillings (each) =	140	each	Ldt =	3.22E-04	lbs/year	
Volume =	336,000	gallons	Filling Time =	1	hr (assume one tanks at a time)	
Qw =	53,928.00	cu ft/year	Lw =	7.66E-07	lbs/hr	
Tamb =	299.8	K		1.61E-07	tpy	

- 1 Stored inside at a temperature of 80 degrees F, equals 299.8 degrees K
- 2 Table 1, Appendix A - Vapor Pressure / Temperature Chart
- 3 MDI has a molecular weight of 250.26 lb/lb-mol
- 4 Table 2, Appendix B - Adjustment Factor

Day Tank Emissions				
Type	Uncontrolled		Controlled	
	lbs/hr	tpy	lbs/hr	tpy
VOC	7.66E-07	1.61E-07	7.66E-07	1.61E-07
MDI	7.66E-07	1.61E-07	7.66E-07	1.61E-07

Total for 2 Units				
Type	Uncontrolled		Controlled	
	lbs/hr	tpy	lbs/hr	tpy
VOC	1.53E-06	3.22E-07	1.53E-06	3.22E-07
MDI	1.53E-06	3.22E-07	1.53E-06	3.22E-07

Since the material is stored indoors at a constant temperature there are no breathing losses associated with the process.  
Reference: This emissions estimate is adapted from the TRI Emissions Estimate prepared by Rubberlite, Incorporated.

By: PEW  
Date: August 27, 2015

Checked By: ADM  
Date: August 28, 2015

**Fugitive Losses (10S and 16S)**

Fugitive emissions are air release volatile chemicals that typically occur due to leaks from fittings and seals in chemical process equipment, transfer operations or storage systems. Direct measurement or monitoring data can be used to estimate fugitive emissions whenever possible. In the absence of direct measurement or monitoring data, industrial hygiene data on MDI concentrations in the workplace can be used to estimate MDI or MDI/PMDI fugitive emissions. This technique can only be used if the industrial hygiene data are representative of average concentrations throughout the year and throughout the building.

The fugitive losses can be estimated from the following expression:

$$L_f = C_{mdi} * (V_b / 359) * N_y * (273.15 / T_{amb}) * MW * K_f$$

- L<sub>f</sub> = fugitive losses in lb/year
- C<sub>mdi</sub> = average MDI concentration in ppb
- V<sub>b</sub> = volume of building in ft<sup>3</sup>
- N<sub>y</sub> = number of air exchanges per year
- T<sub>amb</sub> = ambient temperature in degrees K
- MW = molecular weight of MDI
- K<sub>f</sub> = adjustment factor to the MDI concentration in the building air

- C<sub>mdi</sub> = 1.00E-09 ppb 1
- V<sub>b</sub> = 281,250 ft<sup>3</sup> 2
- N<sub>y</sub> = 1.00E+04 3
- T<sub>amb</sub> = 299.8 K 4
- MW = 250.26 lb/lb-mol 5
- K<sub>f</sub> = 1.1 6
- L<sub>f</sub> = 1.96E+00 lbs/year
- Hrs = 2,080 hrs operating system
- 9.45E-04 lbs/hr
- 9.82E-04 tpy

Total Fugitive Emissions				
	Uncontrolled		Controlled	
Type	lbs/hr	tpy	lbs/hr	tpy
VOC	9.45E-04	9.82E-04	9.45E-04	9.82E-04
MDI	9.45E-04	9.82E-04	9.45E-04	9.82E-04

- 1 MDI concentration is assumed to be < 1 ppb (1.0E-09)
- 2 Consider only the HyPUR-cel section of building 1, 225 ft. x 50 ft. x 25 ft (281,250 ft.<sup>3</sup>)
- 3 Area averages 5 air exchanges per hour
- 4 Building temperature of 80 degrees F, equals 299.8 degrees K
- 5 MDI has a molecular weight of 250.26 lb/lb-mol
- 6 API uses a value of 1.10

The Process is carried out in an area that measures 225 ft. x 50 ft. x 25 ft. (281,250 ft.<sup>3</sup>), 8-hours per day, 5-hours per week, and 50-weeks per year. The area averages 5 air changes per hour and the MDI/PMDI concentration is assumed to be 1 ppb.

Reference: This emissions estimate is adapted from the TRI Emissions Estimate prepared by Rubberlite, Incorporated.

Total ISO Tank and Fugitive Emissions (One Set)				
	Uncontrolled		Controlled	
Type	lbs/hr	tpy	lbs/hr	tpy
VOC	9.60E-04	9.83E-04	9.60E-04	9.83E-04
MDI	9.60E-04	9.83E-04	9.60E-04	9.83E-04

Total ISO Tank and Fugitive Emissions (Both Sets)				
	Uncontrolled		Controlled	
Type	lbs/hr	tpy	lbs/hr	tpy
VOC	1.92E-03	1.97E-03	1.92E-03	1.97E-03
MDI	1.92E-03	1.97E-03	1.92E-03	1.97E-03

By: PEW  
Date: August 27, 2015

Checked By: ADM  
Date: August 28, 2015

**Ethylene Glycol (EG) Emissions-Tank Working and Breathing and Fugitive Losses (11S and 17S)**

This emissions estimate is to determine total emissions of EG from multiple storage size tanks ranging from 5 to 330 gallons. Total emissions are estimated from 5 tanks of 330 gallons. There are two sets of Glycol tanks; one set for Foam Production Unit No. 1 and the other set for Foam Production Unit No. 2.

**BREATHING LOSSES FOR EG**

$$LB = 2.26E-2 Mv [P / Pa - P]^0.68 D^{1.73} H^{0.51} DT^{0.50} Fp C Kc$$

LB =	1.18E-02 lbs/year	Breathing Losses
Mv =	62 lb/lb-mol	Molecular weight
P =	1.16E-03 psia	Vapor Pressure
Pa =	14.7 psia	Absolute pressure
D =	3.83 ft	Tank Diameter
H =	3.83 ft	Tank Height
DT =	5 degrees F	Delta Temperature / day
Fp =	1	Adjustment Factor
C =	1	Adjustment Factor
Kc =	1	Adjustment Factor

Breathing losses occur when EG vapor escapes to the air from a storage tank. The calculation is based on a 330-gallon holding tank that holds EG at an average temperature of 85 degrees F. EG has a vapor pressure of 1.16E-03 psia @ 68 degrees F and an estimated molecular weight of 62 lb/lb-mol.

**WORKING LOSSES FOR EG**

$$Lw = 2.4E-5 Mv P V N Kn Kc$$

Lw =	1.14E-02 lbs/year	Working Losses
Mv =	62 lb/lb-mol	Molecular weight
P =	1.16E-03 psia	Vapor Pressure
V =	330 gallon	Volume
N =	20.00	year gallons / pail gallons
Kn =	1	Adjustment Factor
Kc =	1	Adjustment Factor

Working losses occur when EG vapor that is present over the liquid in a storage tank is displaced from the tank by the addition of EG liquid during tank filling. A reasonable worst case estimate of working losses can be made based on the size and number of times each tank is filled per year.

Reference: This emissions estimate is adapted from the TRI Emissions Estimate prepared by Rubberlite, Incorporated.

Rubberlite, Inc.  
EG Emissions-Tank Working and Breathing and Fugitive Losses

POTESTA & ASSOCIATES, INC.  
Project No. 0101-15-0160

By: PEW  
Date: August 27, 2015

Checked By: ADM  
Date: August 28, 2015

**FUGITIVE LOSSES FOR EG**

$$Lf = C (Vb / 359) N (273.15 / T) Mv Kf$$

Lf =	4.45E-01 lbs/year	Fugitive Losses
C =	1.00E-09 ppmv	Average concentration
Vb =	281,250 ft cube	Volume of the workspace
N =	10,000	Number of air exchanges per year
T =	298.2 K	Temperature
Mv =	62 lb/lb-mol	Molecular weight
Kf =	1	Adjustment factor

Fugitive losses occur when EG liquid leaks from fittings and seals in process equipment. The process is carried out in an area that measures 225 ft x 50 ft x 25 ft (281,250 ft<sup>3</sup>), 8-hours per day, 5-days per week, and 50-weeks per year. The area averages five (5) air exchanges per hour and the EG concentration is assumed to be < 1.0 ppb.

**TOTAL EMISSIONS FOR EG (Sum of Breathing, Working, and Fugitive Losses)**

$$Lt = LB + Lw + Lf$$

Lt =	4.68E-01 lbs/year	Total Emissions
LB =	1.18E-02 lbs/year	Breathing Losses
Lw =	1.14E-02 lbs/year	Working Losses
Lf =	4.45E-01 lbs/year	Fugitive Losses

To Represent Total Losses Assume 5 EG Tanks

Number of Tanks =	5
Hours of Operation =	8,760
Lt =	2.34E+00 lbs/year
	2.67E-04 lb/hr
	1.17E-03 tpy

Total Glycol Tank Emissions (One Set)				
	Uncontrolled		Controlled	
Type	lbs/hr	tpy	lbs/hr	tpy
VOC	2.67E-04	1.17E-03	2.67E-04	1.17E-03
Glycol	2.67E-04	1.17E-03	2.67E-04	1.17E-03

Total Glycol Tank Emissions (Both Sets)				
	Uncontrolled		Controlled	
Type	lbs/hr	tpy	lbs/hr	tpy
VOC	5.34E-04	2.34E-03	5.34E-04	2.34E-03
Glycol	5.34E-04	2.34E-03	5.34E-04	2.34E-03

Reference: This emissions estimate is adapted from the TRI Emissions Estimate prepared by Rubberlite, Incorporated.

By: PEW

Date: August 27, 2015

Checked By: ADM

Date: August 28, 2015

**Vehicle Activity - Paved Haulroads**

This emissions estimate is for the trucks entering and leaving the site. Trucks are predominatly on paved public roadways since the roadways between the buildings are city roads. This is an estimate to determine emissions from the vehicles when on Rubberlite property only (backing and pulling away from buildings and driving off the city roads).

Source	Number of Trucks/Hour	Number of Trucks/Year	Miles Per Trip	Emission Factor <sup>(1)</sup> (lb/VMT)	Control Device	Control Efficiency (%)	Uncontrolled TSP (lb/hr)	Uncontrolled TSP (tpy)	Controlled TSP (lb/hr)	Controlled TSP (tpy)	
Trucks	20	30,000	0.50	0.27	N	0	2.70	2.03	2.70	2.03	
<b>Total PM</b>							<b>Total PM</b>	2.70	2.03	2.70	2.03

Source	Number of Trucks/Hour	Number of Trucks/Year	Miles Per Trip	Emission Factor <sup>(1)</sup> (lb/VMT)	Control Device	Control Efficiency (%)	Uncontrolled PM10 (lb/hr)	Uncontrolled PM10 (tpy)	Controlled PM10 (lb/hr)	Controlled PM10 (tpy)	
Trucks	20	30,000	0.50	0.05	N	0	0.50	0.38	0.5	0.38	
<b>Total PM10</b>							<b>Total PM10</b>	0.50	0.38	0.5	0.38

Source	Number of Trucks/Hour	Number of Trucks/Year	Miles Per Trip	Emission Factor <sup>(1)</sup> (lb/VMT)	Control Device	Control Efficiency (%)	Uncontrolled PM2.5 (lb/hr)	Uncontrolled PM2.5 (tpy)	Controlled PM2.5 (lb/hr)	Controlled PM2.5 (tpy)	
Trucks	20	30,000	0.50	0.01	N	0	0.10	0.08	0.1	0.08	
<b>Total PM2.5</b>							<b>Total PM2.5</b>	0.10	0.08	0.1	0.08

Emission Factors <sup>(1)</sup>				
	TSP	PM <sub>10</sub>	PM <sub>2.5</sub>	
k =	0.011	0.0022	0.00054	dimensionless, particle size multiplier
sL =	0.6	0.6	0.6	surface material silt content (g/m <sup>2</sup> ) AP-42, 13.2.1 Table 13.2.1-2 (highest value used)
W <sub>truck</sub> =	40.0	40.0	40.0	tons, mean vehicle weight (MAX WEIGHT ASSUMED)
P =	157	157	157	no. days/year with 0.01 in of rain
N =	365	365	365	days/year
e =	0.27	0.05	0.01	lb/VMT truck

Road		
One Way Length =	0.25	mi
Trucks Per Year =	30,000	estimated
Trucks Per Hour =	20	estimated

$$E = [k * (sL)^{0.91} * (W)^{1.02}] * (1 - (P/4*N)) = \text{lb / Vehicle Mile Traveled (VMT)}$$

1. AP42, 13.2.1.

By: PEW  
 Date: August 27, 2015

Checked By: ADM  
 Date: August 28, 2015

**Emergency Generator No. 1: Caterpillar 3054C (24S)**

**Specifications**

Fuel Usage	7.84	gallons/hour	Calculated
Diesel:	7.05	lb/gallon	
Heat Input	0.14	MMBtu/gallon	Calculated
Maximum Horsepower:	117.5	kW	Manufacturer
Maximum Fuel Input:	1.07	MMBtu/hour	Calculated
Maximum Horsepower:	157.5	hp	Client

Hours Per Year = 500

Regulated Pollutant	Emission Factor (g/kW-hr)	AP-42 Emission Factor (lb/MMBtu)	Hourly Emissions (lbs/hour)	Annual Emissions (tons/year)
NMHC+NO <sub>x</sub>	5.4	--	1.40	0.35
CO	0.6	--	0.16	0.04
SO <sub>x</sub>	--	0.29	0.31	0.08
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	0.28	--	0.08	0.02
TOC (VOC)	--	0.36	0.39	0.10

Max. Hourly Emis. Rate (lb/hr) = Emission Factor (g/KW-hr) x Engine Power (KW) x (1 lb/453.59 g)

Hazardous Air Pollutants (HAPS)	AP-42 Emission Factor (lb/MMBtu)	Hourly Emissions (lbs/hour)	Annual Emissions (tons/year)
Benzene	9.33E-04	0.001	0.0003
Toluene	4.09E-04	0.0004	0.0001
Xylenes	2.85E-04	0.0003	0.0001
1,3-Butadiene	3.91E-05	0.0001	0.0001
Formaldehyde	1.18E-03	0.0013	0.0003
Acetaldehyde	7.67E-04	0.0008	0.0002
Acrolein	9.25E-05	0.0001	0.0001
Naphthalene	8.48E-05	0.0001	0.0001
<i>Total HAPS</i>		0.0041	0.0013

**Notes:**

Emission factors from AP-42 Table 3.3-1(Criteria Pollutants) Table 3.3-2 (HAPS) unless noted.

An emission factor for Ethylbenzene is not listed on Table 3.3-2 so emissions are assumed to be zero.

By: PEW  
Date: August 27, 2015

Checked By: ADM  
Date: August 28, 2015

**Flame Laminator (25S)**

Material Removed: Capable of removing between 0.015 to 0.020 inches for lamination (per side).

Width (in) =	60		
Length (ft) =	100	Factoring Ratio for Stack Test to	
Line Speed (ft/min) =	37	0.4 MM BTU/Hr	
Minutes Per Hour =	60		
(ft/hr) =	2,220	Stack Test Rating =	0.35
<b>Operating Rates</b>		Proposed Rating =	0.4
Hourly (ft <sup>2</sup> /hr) =	11,100	Factor Ratio =	1.14
Hours/Year =	8,760		
Yearly (ft <sup>2</sup> /yr) =	97,236,000	Rounding to =	2

EMISSIONS				
Emission Type	EF(a) (lb/ft <sup>2</sup> )	EF(a) (lb/ft <sup>2</sup> )	lb/hr	tons/year
<b>Criteria Air Pollutants</b>				
NOx	4.00E-05	4.56E-05	0.51	2.22
PM/PM10/PM2.5	4.60E-05	5.24E-05	0.58	2.55
CO	1.20E-04	1.37E-04	1.52	6.65
VOC	1.60E-04	1.82E-04	2.02	8.87
SO <sub>2</sub> : See AP-42 Calculations on next page.				
<b>Hazardous Air Pollutants</b>				
MDI (b)	3.00E-06	3.42E-06	0.04	0.17
TDI (b)	3.00E-06	3.42E-06	0.04	0.17
Total MDI (b) =			0.08	0.34
HF (c)	2.80E-08	3.19E-08	0.01	0.01
HCN	2.60E-05	2.96E-05	0.33	1.45
Total HAP =			0.42	1.80

References:

- Emission factors from Foamex, L.P. Permit Review (Attached). Operation was at 0.35 MM/BTU/Hr factored up to 0.4 MM BTU/HR.
- This facility does not utilize TDI; therefore, we are adding TDI to MDI for a total emission of MDI.
- If emissions are less than 0.01 then 0.01 is shown.

By: PEW  
Date: August 27, 2015

Checked By: ADM  
Date: August 28, 2015

**Flame Laminator Gas Combustion Only (25S)**

Burner Rating = 0.4 MM Btu/hr

**FUEL CHARACTERISTICS**

	Natural Gas	
Ash Content (%) =	NA	
Sulfur Content (%) =	NA	
Heat Content of Fuel =	1,000	BTU/scf
Hours of Operation =	8,760	hrs/year
Fuel Usage =	0.0004	10 <sup>6</sup> scf per hour
	4	10 <sup>6</sup> scf/year

**Note: this flame does not have any controls for emissions: therefore, uncontrolled is equal to potential maximum emissions.**

EMISSIONS			
Emission	Natural Gas		
	EF <sup>(a)</sup>	Emissions	
Type	lb/10 <sup>6</sup> scf	lb/hr	tons/year
<b>Criteria Air Pollutants<sup>(3)</sup></b>			
CO	84	0.04	0.17
NOx	100	0.04	0.20
PM10/PM2.5 <sup>(1)</sup>	7.6	0.01	0.02
PM	7.6	0.01	0.02
SO <sub>2</sub>	0.6	0.01	0.01
VOC	5.5	0.01	0.02
<b>Hazardous Air Pollutants<sup>(3)</sup></b>			
HAPS- VOC <sup>(2)</sup>	1.88	0.01	0.01
Lead	0.0005	0.01	0.01
Formaldehyde	7.50E-02	0.01	0.01

Rounding to = 2

**Notes:**

- 1 - It is assumed that PM10 and PM2.5 are equal to TSP (PM).
- 2 - Total VOC HAPS as listed in Table 1.4-3 30.50
3. If emissions are less than 0.01 then 0.01 is shown.

**References:**

- a. Emission factors from AP-42, 1.4, Natural Gas Combustion, 7/98.

**REDACTED JUNE 1, 2012**

**Key to Emission Rates Spreadsheet**

Product Name		Catalyst	Catalyst
	1		A
	2		B
	3		C
	4		D
	5		E
	6		F
	7		G
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18		
	19		
	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
	31		
	32		

**REDACTED JUNE 1, 2012**

(b) Flame laminator ID: FL-03 Emissions:  
 The flame laminator will use a 0.35 mmBtu/hr burner to adhere substrate backing to sheets of foam.

The following emission factors developed through a stack testing done on March 1995, for Foamex- Santa Teresa, New Mexico will be used in the emission calculations, except for the SO<sub>2</sub>. These emission factors are worse compared to the AP-42 emission factors, Natural Gas Combustion, Commercial Boilers (<100 mmBtu/hr).

Pollutant	Laminator Capacity (ft <sup>2</sup> /mo)	Emission Factor (lb/ft <sup>2</sup> )	Emissions (tons/yr)
NOx	3,000,000	4 x10 <sup>-6</sup>	0.72
PM	3,000,000	4.8 x10 <sup>-6</sup>	0.93
CO	3,000,000	1.2 x10 <sup>-2</sup>	2.2
VOC	3,000,000	1.8 x10 <sup>-4</sup>	2.9
SO <sub>2</sub>	3,000,000	6 x10 <sup>-1</sup>	0.0
Hydrochloric Acid (HCl)	3,000,000	2.9 x10 <sup>-2</sup>	5.2
Methylenediphenyl Diisocyanate (MDI)	3,000,000	3 x10 <sup>-6</sup>	0.05
Hydrofluoric Acid (HF)	3,000,000	2.9 x10 <sup>-4</sup>	0.0
Hydrogen cyanide (HCN)	3,000,000	2.8 x10 <sup>-6</sup>	0.5
Toluene Diisocyanate (TDI)	3,000,000	3 x10 <sup>-6</sup>	0.05
TOTAL			5.90

Methodology:

$$\text{Emissions, tons/yr} = \text{rate, ft}^2/\text{mo} * \text{Ef, lb/ft}^2 * 12 \text{ mo/yr} * \text{ton}/2000 \text{ lb}$$

1. SO<sub>2</sub> emission factor above is AP-42, 1.4, Natural Gas Combustion, Factor with units of lb/106 scf.
2. Reference: 40CFR63, Subpart M, In addition, the flame lamination of foams containing chlorinated fire retardants also results in emission of the HAP HCl. The fire retardant (see MSDS) used by Rubberlite is not chlorinated; therefore, there are no emissions of HCL anticipated from this source.

# Rubberlite Air Emission Summary and Calculations

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## **Introduction to Products**

Rubberlite, Incorporated uses a two-component system consisting of Part A-Isocyanate (MDI/PMDI) and Part B-Polyol Resin. The Part B is made up of several components called catalyst, surfactants, chain extenders and pigments. The two-part system is pumped into a specially designed mixing head that combines the two-components to react to form polyurethane foam that is poured onto a lined conveyor. The formulated ratio of isocyanate content to polyol resin is specific to meet customers' specifications. No ABAs are used as our process uses water as the blowing agent. Rubberlite, Incorporated produces four different Grade Series that varied in foam density from 3 pcf - 20 pcf

### **H Series**

To produce the H series we use three different catalysts that are used which are dependent on what density is being poured. These are called Catalyst A, B, C. each of the Catalyst contain different VOC and have different concentrations of VOC within.

Catalyst A contains 70% BADMEE

Catalyst B contains 17.5% BADMEE and 33% TEDA

Catalyst C Contains 25% TEDA

Isocyanate contains 93% MDI

### **S Series**

To produce the s series we use two different catalysts that are used which are dependent on what density is being poured. These are called Catalyst B and D. each of the Catalyst contains different VOC and has different concentrations of VOC within.

Catalyst B contains 17.5% BADMEE and 33% TEDA

Catalyst D contains 50% 1,2 DMI

Isocyanate contains 51% MDI

### **T Series**

To produce the T series we use three different catalysts that are used which are dependent on what density is being poured. These are called Catalyst B, C, E. each of the Catalyst contain different VOC and have different concentrations of VOC within.

Catalyst B contains 17.5% BADMEE and 33% TEDA

Catalyst C Contains 25% TEDA

Catalyst E contains 16.5% TEDA and 50% TMHDA

Isocyanate contains 52% MDI

## V Series

To produce the V series we use two different catalysts that are used which are dependent on what density is being poured. These are called Catalyst F and G. each of the Catalyst contains different VOC and has different concentrations of VOC within.

Catalyst F contains 33% TEDA

Catalyst G contains 70% BDAMEE

Isocyanate contains 63% MDI

## VOC Emission Definition and Calculations

Our foam gives off VOCs throughout its entire lifecycle which is estimated to be 30 years. The rate that the VOCs are given off has many variables. During the production of our products there are some different points that this can be given off. During the foaming of our products some are driven off. These are driven off and pass up the ventilation system that is installed above our manufacturing conveyor. During the next step of curing and storage is where trace amounts are also driven off. This is only driven in to the atmosphere of the facility and ends up going out the HVAC systems. The next step in the process is where we take the foam slabs and cut them into customer required thickness. At this stage there is not a ventilation system to capture the VOCs. Where there is not a specific emission factor that can calculate the exact rate that VOCs are leaving the foam it is assumed that all 100% of the VOCs are driven off while the foam is in our facility.

## Worst Case Scenario VOC Calculation

The following steps explain the calculations used to derive the Potential to emit the max emissions that we would ever foresee being emitted with our current process. After each step there is an example calculation on one product. A spreadsheet titled Emission Rates has each calculation for each product that we can manufacture. The Polyol Resin is batched into tanks and allowed to mix overnight. We will typically batch each tank with a different formulation so we can run different products in a given day. For the Worst Case Scenario we are assuming that we would fill all the tanks up with the same formulation.

To calculate the worst case scenario of VOCs emissions the following calculations were done for each product and each eminent.

1. The weight of catalyst is given in each batch.

Ex. With a batch of poly to be 24000 lbs for Product #1 there would be 29.83 lbs. of Catalyst A.

2. The weight of catalyst per batch multiplied by the percentage of VOC that is found in that catalyst. Will equate to the total amount of VOC found in that batch of foam.

Ex. Product #1 contains 29.83 lbs. of Catalysts A per batch. Catalyst A is made up of 70% BADMEE. Therefore, H0705 contains 36.55 lbs. BADMEE per batch.

3. Maximum time taken to run a full batch of chemical is calculated by taking the total available amount of poly resin and dividing it by the thru put of chemical onto conveyor. material (a full batch of chemical would be all 5 Poly tanks filled with the Poly resin for a single grade)

Ex. To run 24,000 lbs. of Poly resin for Product #1 with a chemical thru put of 74.07 lbs. /min. It would take 324.02 minutes of run time to process full tank capacity.

4. The maximum number of linear feet of foam that can be ran can be calculated by taking the line speed and multiplying it by the time taken to run the full amount of material.

Ex. The line speed of Product #1 is 10.5 ft. /min and the calculated run time for a complete batch of Product #1 is 324.02 min., Therefore the max linear footage in one run of Product # 1 would be 3,402 ft.

5. Based on that total emission factor for one full batch the Max emission can be calculated for the year. Based on the way that we batch our process. Rubberlite could only run one max run/ day. It would take the calculated time to run the material. Plus an estimated time of 405 min. to batch the chemical, and time for the chemicals to blend together to be ready for pouring we could only run once in a day. So, by taking the max emission for one batch and multiplying that by 365 days we can estimate the Max emissions for a given year.

Ex. Product #1 has a max emission of VOC per run of 66.09 lbs. That multiplied by 365 days equals 24,122.85 lbs. of VOC emitted per year for Product # 1. Converting to tons by dividing the 2,000 lbs. per ton equals to 12.06 tons of VOC emitted per year producing Product # 1.

6. The hourly rate of VOC emission can be calculated by taking the length of time that our foam is on site and dividing that out by the Total amount of VOC that is calculated to be driven off. All of our foam is on site for a minimum of 24 hours so this was the number that was used for this calculation.

Ex. Product #1 is on site for 24 hrs and emits a total of 66.09 lbs of VOC during that time. That equates to 2.75 lbs of VOC/ hour

### **Worst Case Scenario MDI Calculation**

The following steps explain the calculations used to derive the Potential to emit the max emissions that we would ever foresee being emitted with our current process. After each step there is an example calculation on one product. A spreadsheet titled Emission Rates has each calculation for each product that we can manufacture.

To calculate the worst case scenario of MDI emissions the following calculations were done for each product.

The temperature of the process, the density of the material formed, and the amount of material processes governs the amount of MDI/PMDI emitted from the process. A worst case scenario is to assume the volume displaced by the foam is saturated with MDI/PMDI. The concentration is therefore equal to the vapor pressure of MDI at the process temperature.

The process losses can be estimated from the following expression:

$$L_{fd} = V_{air} * (1 / 359) * (273.15 / T_{proc}) * (VP_{mdi} / 760) * M_w * K_{mdi}$$

$L_{fd}$  = emissions from the process in lb/year

$V_{air}$  = annual volume of displaced air in ft<sup>3</sup>/year

$T_{proc}$  = process temperature in degrees K

$VP_{mdi}$  = Vapor Pressure of MDI

$M_w$  = molecular weight of MDI

$K_{mdi}$  = adjustment factor to the vapor pressure that is a function of MDI concentration in the feed stock and the temperature

### Product # 1 MDI emission Calculation

$$L_{fd} = (476 \text{ lbs. of Iso} / 7\text{Pct}) (1/359) (273.15/377.6^\circ\text{K}) (0.0247 \text{ mm Hg} / 760) * (250.26 \text{ lb/lb-mol}) (.94)$$
$$= 1.04 \times 10^{-3} \text{ lbs of MDI/PMDI per 108.8 ft of material ran.}$$

The amount of MDI emission per batch of material ran is equal to the amount of MDI/PMDI per run of material multiplied by the concentration of MDI in the Iso.

Iso used for Product # 1 is 93% MDI

$$\text{MDI emission per batch H0705} = (3.27 \times 10^{-2} \text{ lbs of MDI/PMDI}) \times (93\%)$$
$$= 3.04 \times 10^{-2} \text{ lbs. of MDI emission per batch}$$

The max MDI emissions calculated for the year is equal to the Emissions per batch times 365 days

$$\text{Ex. Product \# 1 emission per batch is } (3.04 \times 10^{-2} \text{ lbs.}) \times (365 \text{ days}) / 2000 = 5.5 \times 10^{-3} \text{ Tons/year.}$$

### Worst Case Scenario Calculation Summary

The above calculations were completed for each Product that Rubberlite manufactures. The following are highest numbers for each category in that calculation.

Max Length of material that can be ran: 2,135,024 ft/ year. (Product # 20)

Tons of VOC that is emitted per year: 15.08 Tons/ year (Product # 19)

Lbs of VOC that is emitted per hour: 3.44 lbs./ hour (Product # 19)

Tons of CO<sub>2</sub> emitted per Year: 171.38 Tons/year (Product # 17)

Lbs. of CO<sub>2</sub> emitted per hour: 39.13 Lbs./hour (Product # 17)

Tons of HAP's per year  $6.50 \times 10^{-3}$  lbs./year (Product # 17)

Lbs. of HAP's per hour  $5.6 \times 10^{-3}$  lbs/hour (Product # 1)

## Process Limitations

When looking at Rubberlite's process capabilities there are a few limitations that need to be taken into consideration. The first is how we batch our chemical. The Part B is made up of several components called catalyst, surfactants, chain extenders and pigments. We take and add all of these to a batch tank. We have three different sizes of tanks. Our three primary batch tanks are 800 gal. each. We also have one batch tank that is 750 gal. and a lab tank that we will run trials out of that is 150 gal. During the batching process we will take and add all the components that make the resin for a particular batch and allowed to blend overnight to get the batch even all the way through. We will typically batch each tank with a different formulation so we can run different products in a given day. For the Worst Case Scenario we are assuming that we would fill all the tanks up with the same formulation. In looking at the time it would take to run a complete Worst Case Scenario, the amount of time it would take to batch all the tanks for the next pour, and the allowed time for the chemicals to blend evenly we can see that we could only get one Worst Case Scenario run in a 24 hour period.

To batch 24,000 lbs. of poly resin it would take an estimated 6 hours and 45 min. This is based on the fastest pump rate of 50 gal/ min, time for employees to add the non-pumped chemicals, and time for employees to logistically move totes of chemical to the tote stations. If we add this estimated batch time of 6 hours and 45 min. and an average run time for the Worst Case Scenario of 5 hours and 40 min. it would equate to an estimated 12 hours and 24 min. With a Cycle time of 12 hours and 24 min. that would leave 11 hours and 36 min. for the chemicals to blend. In this amount of time they should be able to blend together and make a quality product.

There are also other things that can be looked at when looking at limitations. One is that when the mixing unit heats up due to the processing temperatures of the chemicals. The chemical tends to start reacting in the mix head and dispensing unit causing them to clog.

Another is the capacity of our crane room. Our crane room has the space for 7 stack of Hypur-cel material. The height of the stacks will vary depending on which product that we stack and the 13 ft max height to allow the crane to pass over head. At an average thickness of 3 inches and a max height of 13 feet we could only stack at most 52 master rolls per stack. At seven stacks of Hypur-cel that would equate to 364 rolls of Hypur-cel material. Our crane room would never have that much material in it because our splitting capacity.

With the splitting equipment we currently have we have the capacity to cut 12 master rolls per 8 hours shift. If we were to go to 3 full shifts we would only have the capacity to cut 36 master rolls per day. In the Worst Case Scenario we would be producing at most 58 master rolls per day. There for the most foam that Rubberlite can produce to keep up with its overall system is 36 master rolls/day which would equate to 1,314,000 ft of foam per year.

## **Actual Historical Data and Future Business Potential**

The Worst Case Scenario situation is good way to look at what the emissions would be if we ran at max capacity. However, if we were to look at the historical data and the potential growth of the company we would see that the Worst Case Scenario is far away in the future.

Looking at historical data we have average a 16.89% increase per year in our manufacturing process. If we were to assume that that we stayed on that trend with our current system then we could only reach 1,064,498ft by 2020. This only shows that the Worst Case Scenario situation is far from our actual potential growth.

In 2010 we only produced 223,357 linear feet of foam. If we would compare that to the 2,135,024 feet that is the worst case scenario the we are only operating at 10.5% of capacity of our current system. It can be estimated that our current VOC emissions are at 1.58 tons / year. it also can be estimated that our current CO<sub>2</sub> emissions are at 17.95 tons/ year.

**ATTACHMENT O**  
**MONITORING/RECORDKEEPING/REPORTING/  
TESTING PLANS**

## **ATTACHMENT O**

### **MONITORING/RECORDKEEPING/REPORTING/TESTING PLANS**

Rubberlite, Incorporated requests monitoring, recordkeeping, reporting and testing be maintained as it currently exists in the latest version of the permit.

**ATTACHMENT P**  
**PUBLIC NOTICE**

**LEGAL ADVERTISEMENT**

**AIR QUALITY PERMIT NOTICE**

**Notice of Application**

Notice is given that Rubberlite, Incorporated has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a permit for the construction and modification of Permit R13-2948A for a Foam Production and Fabrication Facility located on Guyan Avenue in Huntington, Cabell County, West Virginia. The latitude and longitude coordinates are: 38.430764 and -82.41350.

The applicant estimates the increased potential to discharge the following Regulated Air Pollutants will be: VOC of 71.18 tons per year (tpy); PM of 4.27 tpy; PM<sub>10</sub> of 3.44 tpy; PM<sub>2.5</sub> of 3.29 tpy; NO<sub>x</sub> of 11.47 tpy; SO<sub>2</sub> of 0.15 tpy; CO of 14.15 tpy, and total HAPS of 20.25 tpy.

This is an existing operation with proposed installation to occur in January 2016 and will begin operation under the permit upon issuance of permit. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57<sup>th</sup> Street, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, Extension 1250, during normal business hours.

Dated this the (PLEASE INSERT DATE) day of September, 2015.

By: Rubberlite, Incorporated  
Jeffrey D. Goad  
Vice President of Business Technology  
2501 Guyan Avenue  
Huntington, West Virginia 25703

**ATTACHMENT Q**  
**BUSINESS CONFIDENTIAL CLAIM**

## Precautionary Notice — Claims of Confidentiality

The person submitting this information may assert that some or all of the information submitted is entitled to confidential treatment as provided by West Virginia Legislative Rule 45CSR31, entitled "Confidential Information." Information covered by such a claim will be disclosed by the Division of Air Quality (DAQ) only to the extent, and by means of the procedures, set forth in 45CSR31. Please contact the West Virginia Secretary of State's Office at 304/558-6000 to obtain a copy of 45CSR31 in order to ensure that all required procedures are followed.

Information concerning the "types and amounts of air pollutants discharged," as that term is defined in WVCSR §45-31-2.4, shall not be claimed as confidential.

Any claim of confidentiality shall be made in accordance with the requirements of 45CSR31 and must accompany the information at the time it is submitted to the DAQ. **If no claim of confidentiality is made at the time of submission or is not made in accordance with the requirements of 45CSR31, the DAQ may make the information available to the public without further notice.**

Included below are procedures to be followed in submitting information claimed as confidential. This information is intended to assist a person with claiming confidential information and is not meant to relieve a person of his/her obligation to review the provisions of 45CSR31 and to comply with such rule. The procedures are as follows:

1. Indicate clearly the items of information claimed confidential by marking each page with the term "Claimed Confidential," with the date of such claim of confidentiality. With the exception of documents of a size greater than 8½" x 14", information claimed confidential must be submitted on colored paper.
2. Include a cover document which justifies the claim of confidentiality in accordance with the specific criteria under WVCSR §45-31-4.1. A sample cover document is attached for your information and use. The cover document will be available for public disclosure and must include the following information:
  - (a) The identity of the person making the submission of information claimed confidential;
  - (b) The reason for the submission of information;
  - (c) The name, an address in the State of West Virginia and telephone number of the designee who shall be contacted in accordance with 45CSR31;
  - (d) Identification of each segment of information within each page that is submitted as confidential and the justification for each segment claimed confidential, including the criteria under WVCSR §45-31-4.1;

- (e) The period of time for which confidential treatment is desired (e.g., until a certain date, until the occurrence of a specified event or permanently); and,
  - (f) Signature of a responsible official or an authorized representative of such person.
3. At the same time as the information claimed confidential is submitted to the DAQ on colored paper, a complete set of the information, including the cover document previously required under paragraph 2, must be submitted on white paper with the information claimed to be confidential blacked or whited out and the words "Redacted Copy — Claim of Confidentiality" marked clearly on each such page, so that the information is suitable for public disclosure. In the case of drawings and blueprints, mark each page with the words "Redacted Copy — Claim of Confidentiality," include the title or legend of the drawing, and black or white out the information claimed confidential. The redacted page may be 8½" x 11" in size.
4. In the case of a permit application or supplemental information to an application, DAQ requires an applicant to submit three (3) copies of the application. Of those three (3) copies, one (1) must be a complete set of the application containing the information claimed confidential on colored paper and two (2) must be redacted copies. The DAQ reserves the right, however, to request additional copies of the information containing the confidential material.

Attachment

## Attachment Q Business Confidential Claim

This form contains each of the required elements for the cover document required under 45CSR31. The person submitting this form may wish to attach an additional page(s) to provide adequate justification under the "Rationale" section of the form.

Company Name	Rubberlite, Incorporated	Responsible Official Jeffrey D. Goad		
Company Address	2501 Guyan Ave.	Confidential Information Designee in State of WV	Name	Patrick Ward
			Title	Senior Engineer
	Huntington, WV 25703		Address	7012 MacCorkle Avenue, S.E.
Person/Title Submitting Confidential Information	Jeffrey D. Goad			Charleston, WV 25304
	Vice President of Technology		Phone	(304) 342-1400
		Fax	(304) 343-9031	

Reason for Submittal of Confidential Information: Allow review of information pertaining to DAQ issuing a Regulation 13 Permit Application.

Identification of Confidential Information	Rationale for Confidential Claim	Confidential Treatment Time Period
All Marked Confidential Information	<p>Provide justification that the criteria set forth in § 45CSR31-4.1.a - e have been met.</p> <p>The information shown on the pages marked as confidential is to be treated as such. The mixture for each product is confidential and could harm Rubberlite's or others business if released.</p> <p>See Page Q4 of Q4.</p>	This information is to be maintained confidential; there is no timeframe for expiration of confidential treatment.

Responsible Official Name:	Jeffrey D. Goad
Responsible Official Title:	Vice President of Technology
Date Signed: <i>September 10, 2015</i>	Signature: <i>Jeffrey D. Goad</i>

**NOTE:** Must be signed and dated in BLUE INK.

**Provide justification that the criteria set forth in § 45CSR31-4.1.a - e have been met.**

4.1.a. The claim of confidentiality has not expired by its terms, nor been waived or withdrawn;

The information is protected by the company as proprietary information and by confidentiality agreements with those persons allowed to view such information.

4.1.b. The person asserting the claim of confidentiality has satisfactorily shown that it has taken reasonable measures to protect the confidentiality of the information, and that it intends to continue to take such measures;

The information contained within the application is fully protected confidentiality agreements by all parties involved in the processes, the design of the facility, and the permit application process.

4.1.c. The information claimed confidential is not, and has not been, reasonably obtainable without the person's consent by other persons (other than governmental bodies) by use of legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding);

The information available herein is not available and is not to be made available to outside parties.

4.1.d. No statute specifically requires disclosure of the information; and

There are no statutes that require disclosure of the specific information.

4.1.e. Either--

4.1.e.1. The person has satisfactorily shown that disclosure of the information is likely to cause substantial harm to the business's competitive position; or

The product produced by Rubberlite, Incorporated or others is unique and the information is proprietary. Release of this information could cause substantial harm to Rubberlite, Incorporated competitive position in the market.

4.1.e.2. The information is voluntarily submitted information, and its disclosure would likely to impair the State's ability to obtain necessary information in the future.

The State should not disclose this information to anyone.