



**CONESTOGA-ROVERS  
& ASSOCIATES**

6320 Rothway, Suite 100, Houston, Texas 77040  
Telephone: (713) 734-3090 Fax: (713) 734-3391  
[www.CRAworld.com](http://www.CRAworld.com)

*Pursley  
13-3230  
033-00255*

February 6, 2015

Reference No. 089634

Mr. Jay Fedczak  
Assistant Director for Permitting  
Division of Air Quality  
WV Department of Environmental Protection  
601 57<sup>th</sup> Street, SE  
Charleston, West Virginia 25304

Dear Mr. Jay Fedczak:

Re: New Source Review Air Permit Application – 45CSR13  
Clarksburg Bulk Cement Plant  
O-Tex Pumping LLC

Conestoga-Rovers & Associates (CRA) would like to submit this 45CSR13 Air Permit application that we prepared on behalf of O-Tex Pumping for relocation of a cement facility identified as Clarksburg Bulk Cement Plant

Enclosed are the following documents:

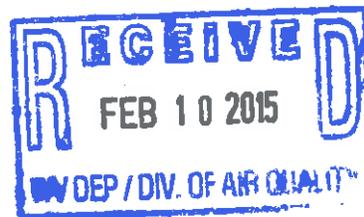
- Original copy of the 45CSR13 Air Permit Application
- Three copies of the 45CSR13 Air Permit Application
- The application fee with check no. 172061 in the amount of \$2000.00

Please let us know if you have any questions or require additional information.

Sincerely,

CONESTOGA-ROVERS & ASSOCIATES

Manuel Bautista



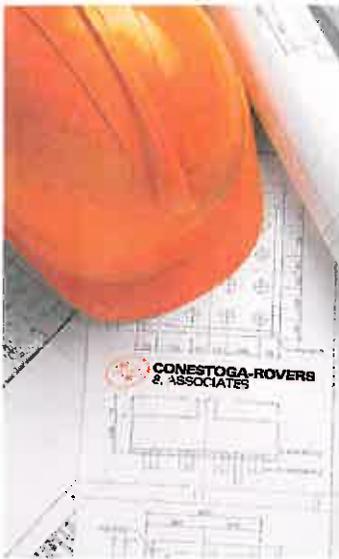
Encl.

cc: Doug Rather – O-Tex Pumping LLC

Equal  
Employment Opportunity  
Employer



[www.CRAworld.com](http://www.CRAworld.com)



## New Source Review Air Permit Application 45CSR13

Clarksburg Bulk Cement Plant

Prepared for: O-Tex Pumping LLC

### **Conestoga-Rovers & Associates**

6320 Rothway St, Suite 100  
Houston, Texas 77040

January 2015 • 089634-01 • Report No. 1



---

## Table of Contents

### NSR (45CSR13) Relocation Air Permit Application

Attachment A	Current Business Certificate
Attachment B	Site Location Map
Attachment C	Installation and Start-up Schedule
Attachment D	Regulatory Discussion
Attachment E	Plot Plan
Attachment F	Process Flow Diagram
Attachment G	Process Description
Attachment H	Material Safety Data Sheets
Attachment I	Emission Unit Table
Attachment J	Emission Points Data Summary Sheet
Attachment K	Fugitive Emission Data Summary Sheet
Attachment L	Emission Unit Data Sheets
Attachment M	Air Pollution Control Device
Attachment N	Supporting Emission Calculations
Attachment O	Monitoring/Recordkeeping/Reporting/Testing Plans
Attachment P	Public Notice
Attachment R	Authority Forms
Attachment	Application Fee



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): O-Text Pumping LLC	2. Federal Employer ID No. (FEIN): 230551389
3. Name of facility (if different from above): Clarksburg Bulk Cement Plant	4. The applicant is the: <input type="checkbox"/> OWNER <input type="checkbox"/> OPERATOR <input checked="" type="checkbox"/> BOTH
5A. Applicant's mailing address: 7303 N Highway 81, Duncan, OK 73533	5B. Facility's present physical address: 691 Good Hope Pike, Clarksburg, WV
6. West Virginia Business Registration. Is the applicant a resident of the State of West Virginia? <input type="checkbox"/> YES <input checked="" 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: N/A	
8. Does the applicant own, lease, have an option to buy or otherwise have control of the proposed site? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO - If YES, please explain:    O-Text Pumping LLC is leasing 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.): Support activities for oil and gas operations	10. North American Industry Classification System (NAICS) code for the facility: 213112
11A. DAQ Plant ID No. (for existing facilities only): -	11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only): N/A

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 Clarksburg city, head east on W Main St toward S 6<sup>th</sup> St for 420 ft; turn left onto S 6<sup>th</sup> St and continue for 456 ft; turn left at the 2<sup>nd</sup> cross street onto Main St N/W Pike St. for 0.5 mi; keep left to continue in Good Hope Pike/ Milford St for 190 ft; slight left to stay on Good Hope Pike/ Milford St for 0.7 mi. Destination will be on the left.

12.B. New site address (if applicable):

12C. Nearest city or town:

12D. County:

Clarksburg

Harrison

12.E. UTM Northing (KM): 4345.9722

12F. UTM Easting (KM): 553.5106

12G. UTM Zone: 17N

13. Briefly describe the proposed change(s) at the facility:

Relocation of a portable bulk cement plant

14A. Provide the date of anticipated installation or change: upon approval of permit application

- If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: *N/A*

14B. Date of anticipated Start-Up if a permit is granted:

Three weeks after approval of permit application

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        |  |
| <input type="checkbox"/> General Emission Unit, specify  |   |  |

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 type="checkbox"/> Mechanical Collector  |
| <input type="checkbox"/> Afterburner               | <input type="checkbox"/> Electrostatic Precipitator | <input type="checkbox"/> Wet Collecting System |
| <input type="checkbox"/> 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 checked="" 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



(Please use blue ink)

DATE:

2/6/2015

(Please use blue ink)

35B. Printed name of signee: Doug Rather

35C. Title: Senior Partner

35D. E-mail: dougr@otexpumping.com

36E. Phone: 580-251-9919

36F. FAX:

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

36B. Title:

36C. E-mail:

36D. Phone:

36E. FAX:

**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 type="checkbox"/> Attachment Q: Business Confidential Claims                                |
| <input checked="" type="checkbox"/> Attachment H: Material Safety Data Sheets (MSDS) | <input checked="" 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 DAO's website, or requested by phone.

# State of West Virginia



## Certificate

*I, Natalie E. Tennant, Secretary of State of the State of West Virginia, hereby certify that*

**O-TEX PUMPING, LLC**

was duly authorized under the laws of this state to transact business in West Virginia as a foreign limited liability company on January 29, 2015.

The company is filed as an at-will company, for an indefinite period.

I further certify that the LLC (PLLC) has not been revoked by the State of West Virginia nor has a Certificate of Cancellation been issued.

Therefore, I hereby issue this

## CERTIFICATE OF AUTHORIZATION

Validation ID:3WV0S\_3PXNH



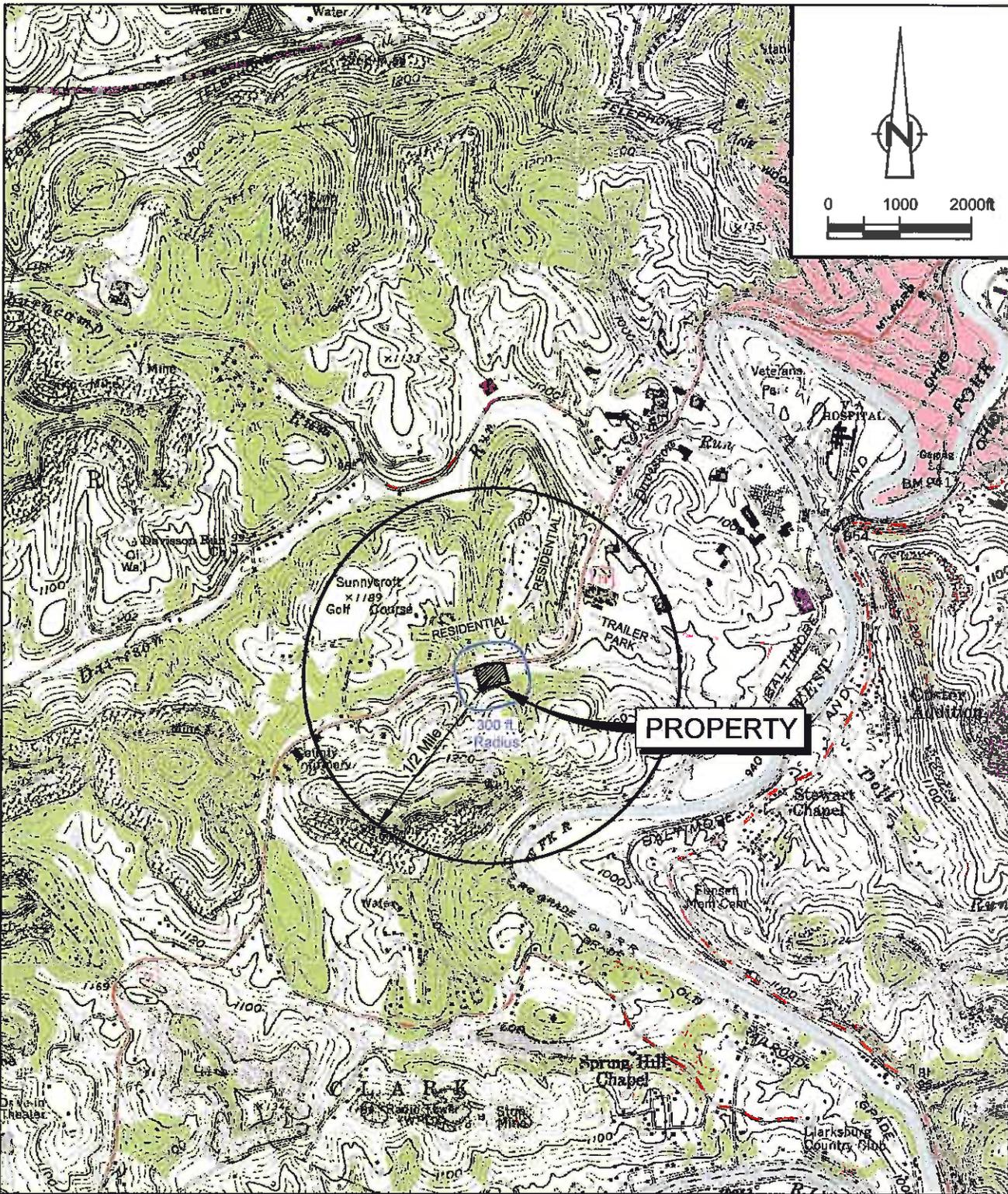
*Given under my hand and the  
Great Seal of the State of  
West Virginia on this day of  
February 06, 2015*

*Natalie E. Tennant*

*Secretary of State*

## Attachment B

### Site Location Map



SOURCE: USGS QUADRANGLE MAPS;  
CLARKSBURG, MOUNT CLARE, WEST MILFORD, AND WOLF SUMMIT, WEST VIRGINIA

Attachment B

SITE COORDINATES: LAT. 39.262434, LONG. -80.379749

AREA MAP  
CLARKSBURG BULK CEMENT PLANT  
O-TEX PUMPING LLC  
*Harrison County, West Virginia*



## **Attachment C**

### **Installation and Start-up Schedule**

**Attachment C**

**Installation and Start-up Schedule**

**Clarksburg Bulk Cement Plant**

**O-Tex Pumping LLC**

**Harrison, West Virginia**

<b>Activities</b>	<b>Schedule</b>
Relocation and installation of equipment	One week after approval of permit application
Startup	Three weeks after approval of permit application

## **Attachment D**

### **Regulatory Discussions**

## Attachment D

**Regulatory Requirements  
Clarksburg Bulk Cement Plant  
O-Tex Pumping LLC  
Harrison County, WV**

Below are the applicable State and Federal regulations. Each emission source and corresponding air pollutant emissions were evaluated to determine regulatory applicability.

### **STATE REGULATORY APPLICABILITY**

#### **45CSR13 (Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation)**

The proposed facility is subject to the requirements of 45CSR13 because it is to relocate non-major stationary sources within the state of West Virginia. The facility submitted the proper application fee of \$2000.00 and will publish a Class I legal advertisement.

#### **45CSR17 (To Prevent and Control Particulate Matter Air Pollution from Materials Handling, Preparation, Storage and Other Sources of Fugitive Particulate Matter)**

The proposed facility is subject to the requirements of 45CFR17 because it is a storage and handling facility for particulate matter. It is not defined as a manufacturing process and therefore not subject to 45CSR7

#### **45CSR22 (Air Quality Management Fee Program)**

This rule establishes a program to collect fees for certificates to operate and for permits to construct, modify or relocate sources of air pollution. The facility will demonstrate compliance with this rule by obtaining a Certificate to Operate (CTO) and paying annual fees in order to maintain a current CTO.

### **FEDERAL REGULATORY APPLICABILITY**

#### **40 CFR §60 New Source Performance Standards**

40 CFR §60 NSPS may apply to the Site if there are affected stationary sources constructed after the date of publication of the applicable parts of this standard.

### Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines)

This subpart applies to stationary compression ignition (CI) internal combustion engines (ICE) specified in 40 CFR 60.4200(a)(2) through (a)(4). The Facility has two stationary ICE (12S and 13S) with maximum engine power of 41.8 HP (35.9 kW) and 173.5 HP (129.4 kW), respectively. These are subject to 40 CFR 60.4205(b) and 60.4204 (b), which covers stationary CI ICE and emergency stationary CI ICE with a displacement of less than 30 liters who are subject to EPA Tier 4 Interim, respectively. These engines fulfill the emission standards specified in 40 CFR 1039.102 as follows:

Model Year	Maximum Engine Power (kW)	PM (g/kW-hr)	Nox (g/kW-hr)	NMHC (g/kW-hr)	NMHC+Nox (g/kW-hr)	CO (g/kW-hr)
2008-2012	19 - 37	0.3	-	-	7.5	5.5
2013-2014	19 - 37	0.03	-	-	4.7	5.5
2007-2011	75 - 130	0.3	-	-	4.0	5.0
2012-2013	75 - 130	0.02	-	-	4.0	5.0
2014 and later	75 - 130	0.02	0.4	0.19	-	5.0

The Facility will comply with the recordkeeping requirements specified in 40 CFR 60.4211(a) through (h), and 40 CFR 60.4214 (b) -Records of compliance notifications submitted (emergency engine with a model year starting 2013 is exempted from this rule).

#### 40 CFR §61 National Emissions Standards for Hazardous Air Pollutants

40 CFR §63 may apply to the site since it has the potential to emit hazardous air pollutants (HAP) and may be subject to a standard, limitation, prohibition, or other federally enforceable requirement of this part.

#### Subpart ZZZZ National Emission Standard for Reciprocating Ignition Internal Combustion Engines

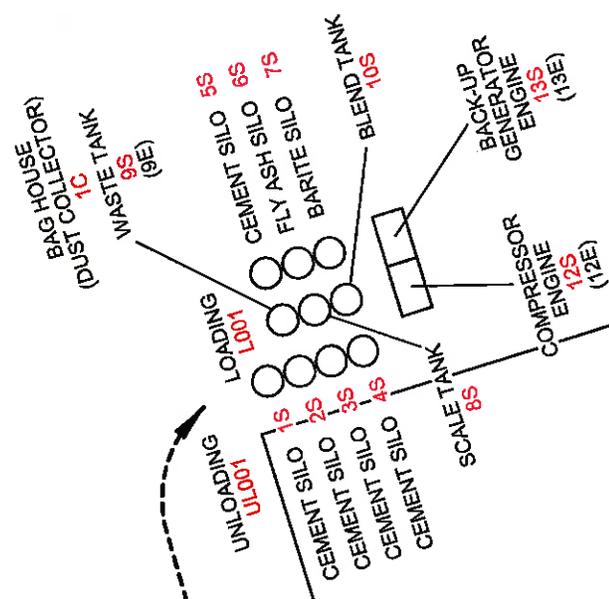
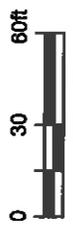
This subpart establishes emission standards for hazardous air pollutants (HAPs) emitted from stationary internal combustion engines located at major and area sources of HAP emissions. The two engines in the Facility (S12 and S13) are subject to the area source requirements. However, since these engines are already subject to 40 CFR 60 Subpart IIII, no further requirements apply to these engines under this subpart as stipulated in 40 CFR 63.6590(c). The Facility will demonstrate compliance through 40 CFR 60 Subpart IIII.

# Attachment E

## Plot Plan

MILFORD STREET

HAULING ROUTE  
(EP-HR001)  
HR001



Attachment E  
 PLOT PLAN  
 CLARKSBURG BULK CEMENT PLANT  
 O-TEX PUMPING LLC  
 Harrison County, West Virginia



# Attachment F

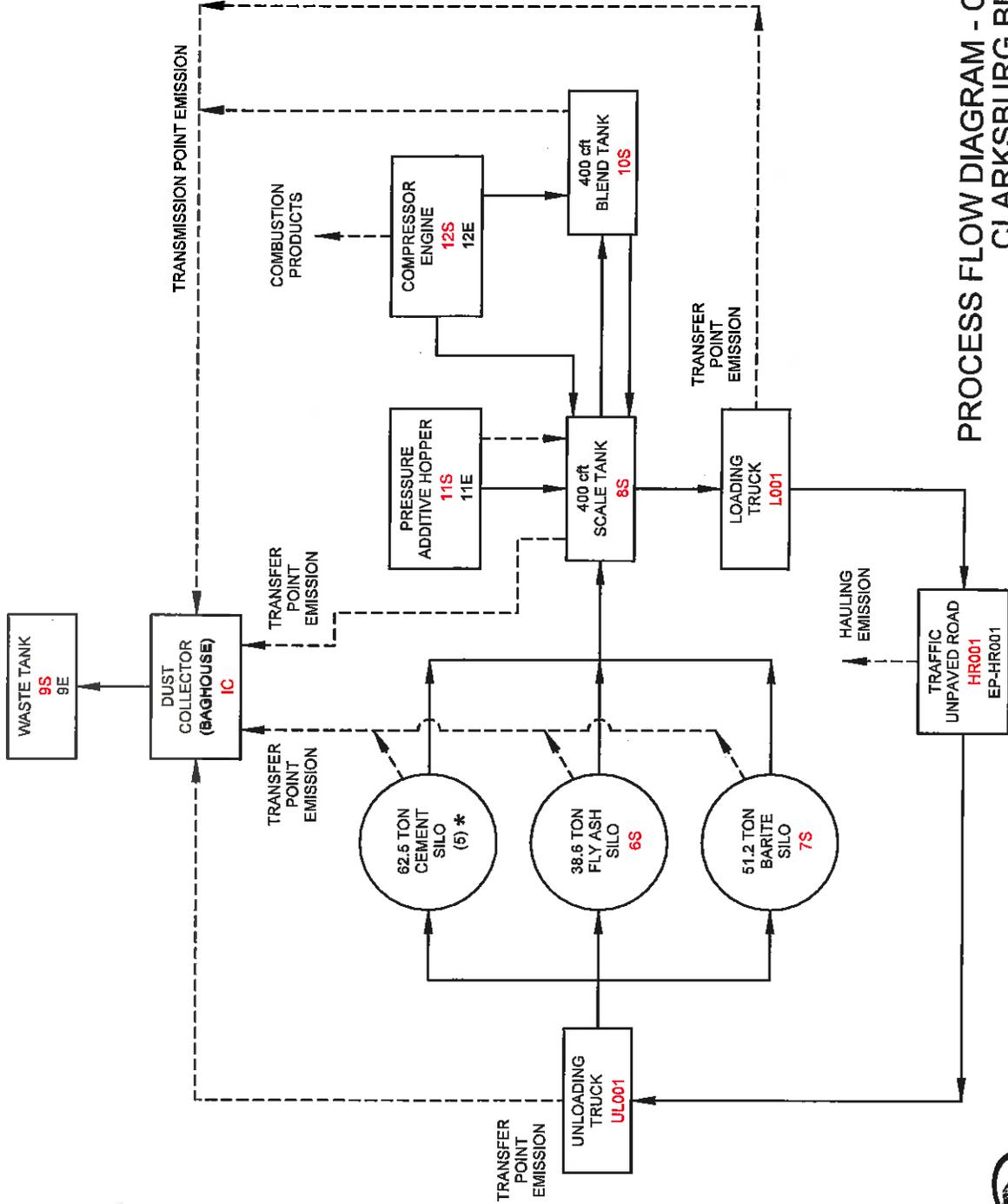
## Process Flow Diagram

\* CEMENT SILOS

- 1S
- 2S
- 3S
- 4S
- 5S

→ MATERIAL FLOW  
(CEMENT, BLENDING  
MATERIAL)

- - - EMISSION FLOW  
(VENT FLOW)



**Attachment F**  
**PROCESS FLOW DIAGRAM - O-TEX PUMPING LLC**  
**CLARKSBURG BULK CEMENT PLANT**  
*Harrison County, West Virginia*



**Attachment G****Process Description  
Clarksburg Bulk Cement Plant  
O-Tex Pumping LLC  
Harrison County, WV**

This facility stores bulk cement, blend materials, and bulk load equipment to be used at gas well sites. All materials are dry and nonhazardous per Department of Transportation guidelines.

The silos (1S-7S) are filled pneumatically from pump transport trucks. Product will be moved from the silos through the dust collector to the scale tank (8S). The dust collector then vents to the waste (junk) tank (9S). Product is then blended with other required materials in the scale tank then pneumatically transferred to the blend tank (10S).

The blend materials are stored in 50- and 100-pound sacks inside a storage building. They are added to the blend tank by dumping into an additive hopper (11S) while pulling a vacuum on the blend tank. The blend tank will have air drawn into it by the vent fan on the dust collector system. After proper blending, the product is pneumatically transferred to the transport truck.

Bulk transport trucks are vented through the same system during loading or unloading. The air compressor used to pressurize the blend and scale tanks will have a dryer system installed. The compressor and vacuum pump are currently run by diesel engine (12S), as described above, but may be run by electric motors in the future. Diesel engine (13S) is used for back-up generator.

The whole system will not be open at the same time. Only one material storage silo or the blend tank will be open to the system with a bulk truck. When the blend tank is pressurized, the system is closed, meaning that no products are unloaded or loaded without going through the emissions control device. When the material is moved between the scale and blend tanks, or to a transport truck, the system is vented through the vent/reclaim tank and the dust collector (1C). A pneumatic shaker is installed for shaking dust from the filter bags. No compressed air will be used in the dust collectors.

The facility can operate any time day or night. Each loading process will last between two and three hours. The unloading process into the silos will last around one hour each. All attempts will be made to operate during daylight hours whenever possible.

# Attachment H

## Material Safety Data Sheets

**Attachment H**

**Description of Material Safety Data Sheets (MSDS)**

**Clarksburg Bulk Cement Plant**

**O-Tex Pumping LLC**

**Harrison County, West Virginia**

Material Safety Data Sheets (MSDS) are provided for the cement, cement fluid loss additive, cement retarder, cement dispersant, cement defoamer, cement additive, fly ash, barite, gel, and blend agents used in bulk cement plant.

# MATERIAL SAFETY DATA SHEET

## BARITE

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**TRADE NAME:** BARITE

**OTHER NAME:** Barium Sulfate

**APPLICATIONS:** Drilling fluid densifier

**EMERGENCY TELEPHONE:** 800-438-7436 (800 GETS GEO)

**SUPPLIER:** Supplied by Industrial Minerals Company  
A Business Unit of GEO Drilling Fluids, Inc.  
1431 Union Ave. Bakersfield, California, 93305

**TELEPHONE:** 661-325-5919

**FAX:** 661-325-5648

### 2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME:	CAS No.:	CONTENTS :	EPA RQ:	TPQ:
Silica, crystalline, quartz	14808-60-7	4-6 %		
Barite	7727-43-7	91-93 %		
Mica	12001-26-2	1-5 %		

### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW:

**CAUTION! MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.**  
Avoid contact with eyes, skin and clothing. Avoid breathing airborne product. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. This product is a/an transparent tan to powder. Slippery when wet. A nuisance dust.

#### ACUTE EFFECTS:

#### HEALTH HAZARDS, GENERAL:

Particulates may cause mechanical irritation to the eyes, nose, throat and lungs. Particulate inhalation may lead to pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma. Dermatitis and asthma may result from short contact periods.

**INHALATION:** May be irritating to the respiratory tract if inhaled.

**INGESTION:** May cause gastric distress, nausea and vomiting if ingested.

**SKIN:** May be irritating to the skin.

**EYES:** May be irritating to the eyes.

**CHRONIC EFFECTS:**

**CARCINOGENICITY:**

IARC: Not listed. OSHA: Not regulated. NTP: Not listed.

**ATTENTION! CANCER HAZARD. CONTAINS CRYSTALLINE SILICA WHICH CAN CAUSE CANCER.** Risk of cancer depends on duration and level of exposure.

IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC classification Group 1.

**ROUTE OF ENTRY:**

Inhalation. Skin and/or eye contact.

**TARGET ORGANS:**

Respiratory system, lungs. Skin. Eyes.

---

**4. FIRST AID MEASURES**

---

**GENERAL:** Persons seeking medical attention should carry a copy of this MSDS with them.

**INHALATION:** Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.

**INGESTION:** Drink a couple of glasses water or milk. Do not give victim anything to drink of he is unconscious. Get medical attention.

**SKIN:** Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

**EYES:** Promptly wash eyes with lots of water while lifting the eye lids. Get medical attention if any discomfort continues.

---

**5. FIRE FIGHTING MEASURES**

---

**AUTO IGNITION TEMP. (?F):** N/D

**FLAMMABILITY LIMIT - LOWER(%):** N/D

**FLAMMABILITY LIMIT - UPPER(%):** N/D

**EXTINGUISHING MEDIA:**

This material is not combustible. Use extinguishing media appropriate for surrounding fire.

**SPECIAL FIRE FIGHTING PROCEDURES:**

No specific fire fighting procedure given.

**UNUSUAL FIRE & EXPLOSION HAZARDS:**

No unusual fire or explosion hazards noted.

**HAZARDOUS COMBUSTION PRODUCTS:** This material is not combustible.

---

**6. ACCIDENTAL RELEASE MEASURES**

**PERSONAL PRECAUTIONS:**

Wear proper personal protective equipment (see MSDS Section 8).

**SPILL CLEAN-UP PROCEDURES:**

Avoid generating and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water. Do not contaminate drainage or waterways. Repackage or recycle if possible.

**7. HANDLING AND STORAGE**

**HANDLING PRECAUTIONS:**

Avoid inhalation of dust and contact with skin and eyes.

**STORAGE PRECAUTIONS:**

Store in tightly closed original container in a dry, cool and well-ventilated place.

**8. EXPOSURE CONTROLS, PERSONAL PROTECTION**

INGREDIENT NAME:	CAS No.:	OSHA PEL: TWA: STEL:	ACGIH TLV: TWA: STEL:	OTHER: TWA: STEL:	UNITS:
Silica, crystalline, quartz	14808-60-7	*	0.1		mg/m <sup>3</sup> resp.dust
Barite	7727-43-7	15	10		mg/m <sup>3</sup> total dust
Mica	12001-26-2	20 mppcf *	3		mg/m <sup>3</sup> total dust

**INGREDIENT COMMENTS:**

\* OSHA PELs for Mineral Dusts containing crystalline silica are 10 mg/m<sup>3</sup> / (%SiO<sub>2</sub>+2) for quartz and 1/2 the calculated quartz value for cristobalite and tridymite. \* mppcf = millions of particles per cubic foot of air.

**PROTECTIVE EQUIPMENT:**

**ENGINEERING CONTROLS:**

Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to reduce air contamination and keep worker exposure below the applicable limits.

**VENTILATION:**

Supply natural or mechanical ventilation adequate to exhaust airborne product and keep exposures below the applicable limits.

**RESPIRATORY PROTECTION:**

Respiratory protection must be used if air contamination exceeds acceptable level.

**HAND PROTECTION:**

Use suitable protective gloves if risk of skin contact.

**EYE PROTECTION:**

Wear dust resistant safety goggles where there is danger of eye contact.

**PROTECTIVE CLOTHING:**

Wear appropriate clothing to prevent repeated or prolonged skin contact.

**HYGIENIC WORK PRACTICES:**

Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

---

**9. PHYSICAL AND CHEMICAL PROPERTIES**

---

<b>APPEARANCE/PHYSICAL STATE:</b>	Powder, dust.
<b>COLOR:</b>	Tan to Grey.
<b>ODOR:</b>	Odorless or no characteristic odor.
<b>SOLUBILITY DESCRIPTION:</b>	Insoluble in water.
<b>MELT./FREEZ. POINT (?F, interval):</b>	2876
<b>DENSITY/SPECIFIC GRAVITY (g/ml):</b>	4.10 - 4.15
<b>BULK DENSITY:</b>	107 - 135 lb/cu ft; 1714 - 2163 kg/m <sup>3</sup>
<b>VAPOR DENSITY (air=1):</b>	N/A
<b>VAPOR PRESSURE:</b>	N/A

---

**10. STABILITY AND REACTIVITY**

---

<b>STABILITY:</b>	Normally stable.
<b>CONDITIONS TO AVOID:</b>	N/A.
<b>HAZARDOUS POLYMERIZATION:</b>	Will not polymerize.
<b>POLYMERIZATION DESCRIPTION:</b>	Not relevant.
<b>MATERIALS TO AVOID:</b>	N/A
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	

No specific hazardous decomposition products noted.

**11. TOXICOLOGICAL INFORMATION**

**TOXICOLOGICAL INFORMATION:**

No toxicological data is available for this product.

**12. ECOLOGICAL INFORMATION**

**ACUTE AQUATIC TOXICITY:**

This product passes the mysid shrimp toxicity test required by the U.S. Environmental Protection Agency (EPA) Region VI (Gulf of Mexico) NPDES Permit, which regulates offshore discharge of drilling fluids, when tested in a standard drilling fluid.

**13. DISPOSAL CONSIDERATIONS**

**WASTE MANAGEMENT:**

This product does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc, may render the resulting materials hazardous.

**DISPOSAL METHODS:**

Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

**14. TRANSPORT INFORMATION**

**PRODUCT RQ:** N/A  
**U.S. DOT:**  
**U.S. DOT CLASS:** Not regulated.

**15. REGULATORY INFORMATION**

**REGULATORY STATUS OF INGREDIENTS:**

<b>NAME:</b>	<b>CAS No:</b>	<b>TSCA:</b>	<b>CERCLA:</b>	<b>SARA 302:</b>	<b>SARA 313:</b>	<b>DSL(CAN):</b>
Silica, crystalline, quartz	14808-60-7	Yes	No	No	No	Yes
Barite	7727-43-7	Yes	No	No	No	Yes
Mica	12001-26-2	Yes	No	No	No	Yes

**REPAIRED BY:** Andy Philips  
**REVISION No.:** April 4, 2013

# MATERIAL SAFETY DATA SHEET

Product Name: ANCO BAR (BARITE)

Anchor Drilling Fluids USA, Inc.  
2431 E 61<sup>ST</sup> Street, Suite 710, Tulsa, OK 74136

Run Date: 5/31/06

Rev. Date: 1/4/2008

## I. GENERAL INFORMATION

Chemical Name: BARIUM SULFATE CAS#: 7727-43-7  
Chemical Family: BARYTES  
Chemical Formula: BASO4  
Synonyms: BAR  
NFPA Properties: Health: 1 Flammability: 0 Reactivity: 0  
Emergency Telephone: CHEMTREC (800) 424-9300 Information Telephone: (918) 583-7701

## II. HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

Hazardous Components	TWAPPM	TWA MG/M <sup>3</sup>	STEL PPM	STEL MG/M <sup>3</sup>	CAS#	OTHER LIMITS	%
1. BARIUM SULFATE		10		0.1			
2. KAOLIN				0.1	1332-58-7		0-5
3. QUARTZ				0.1	14808-60-7		0-3

## III. PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point °F: N/A Color: WHITE TO GRAY  
Specific Gravity: 4.3 Odor: NONE  
Vapor Pressure: N/A Appearance: POWDER  
Percent Volatility: N/A pH: NDA  
Vapor Density: N/A Viscosity: N/A  
Evaporation Rate: N/A Activity: INERT  
Solubility in Water: INSOLUBLE LC50: NDA  
Melting Point °F: 2876 LD50: NDA

## IV. FIRE & EXPLOSION HAZARD DATA

Extinguishing Agents: N/A  
Flash Point °F: NONE  
Flammable Limits: N/A LEL: N/A UEL: N/A  
Special Firefighting Procedures: N/A

Unusual Fire & Explosion Hazards: CONTACT WITH POWDERED ALUMINUM OR MAGNESIUM MAY PROVE EXPLOSIVE. CONTACT WITH PHOSPHOROUS WITH POTASSIUM HITRATE-CALCIUM SILICIDE MAY IGNITE.

# MATERIAL SAFETY DATA SHEET

Product Name: ANCO BAR (BARITE)

Anchor Drilling Fluids USA, Inc.  
2431 E 61<sup>ST</sup> Street, Suite 710, Tulsa, OK 74136

Run Date: 5/31/06

Rev. Date: 1/4/2008

## V. HEALTH HAZARD DATA

Routes of Entry:    Inhalation – YES                      Skin – YES                      Ingestion – YES  
Effects of Overexposure:    DIRECT CONTACT WITH SKIN MAY CAUSE DRYNESS AND ITCHING. REPEATED INHALATION MAY CAUSE DELAYED LUNG INJURY. MAY CAUSE MECHANICAL IRRITATION TO THE NOSE, THROAT, AND UPPER RESPIRATORY TRACT.

Toxicological Properties:    NDA

Chronic & Acute Effects of Overexposure:    INHALATION OF BARIUM SULFATE MAY LEAD TO DEPOSITION IN THE LUNGS IN SUFFICIENT QUANTITIES TO PRODUCE BARITOSIS – A BENIGN PNEUMOCONIOSIS. ABNORMAL PHYSICAL SIGNS. DISSEMINATED NODULAR OPACITIES THROUGHOUT BOTH LUNGS ARE DETECTABLE BY X-RAYS; THESE ARE DISCRETE BUT SOMETIMES OVERLAP.

Carcinogenicity:    NTP – NO                      IARC Monographs – NO                      OSHA Regulated – YES

### Emergency First Aid Procedures:

- Eyes:                      FLUSH WITH PLENTY OF WATER. IF IRRITATION DEVELOPS, CALL A PHYSICIAN
- Skin Contact:            WASH AREA WITH SOAP AND WATER. APPLY SKIN MOISTURIZER. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION.
- Inhalation:              REMOVE FROM EXPOSURE. IF SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION.
- Ingestion:                TREAT SYMPTOMATICALLY. IF SYMPTOMS PERSIST, CONSULT A PHYSICIAN. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

## VI. REACTIVITY DATA

Stability:                      STABLE                                      Hazardous Polymerization:    WILL NOT OCCUR  
Hazardous Decomposition Products:    THERMAL DECOMPOSITION MAY PRODUCE TOXIC OXIDES OF SULFUR AND BARIUM.  
Conditions To Avoid:                      CONTACT WITH ALUMINUM OR MAGNESIUM MAY PROVE EXPLOSIVE. CONTACT WITH PHOSPHOROUS WITH POTASSIUM NITRATE-CALCIUM SILICIDE MAY IGNITE.  
Incompatibility and Materials to Avoid:    POWDERED ALUMINUM OR MAGNESIUM. PHOSPHOROUS WITH POTASSIUM NITRATE-CALCIUM SILICIDE.

## VII. PRECAUTIONS FOR SAFE HANDLING AND USE

<u>Steps To Be Taken In Case Material Is Released Or Spilled – Procedures For Clean-Up:</u>	SWEEP UP SPILL MATERIAL AND REPACKAGE
<u>Waste Disposal Method:</u>	DISPOSE OF IN ACCORDANCE TO LOCAL, STATE AND FEDERAL REGULATIONS
<u>Precautions To Be Taken In Handling &amp; Storage:</u>	CONTAINERS SHOULD BE SEALED TO PREVENT DUSTING

# MATERIAL SAFETY DATA SHEET

Product Name: ANCO BAR (BARITE)

Anchor Drilling Fluids USA, Inc.  
2431 E 61<sup>ST</sup> Street, Suite 710, Tulsa, OK 74136

Run Date: 5/31/06

Rev. Date: 1/4/2008

---

## VIII. CONTROL MEASURES

---

Ventilation Type Required:	LOCAL AND MECHANICAL EXHAUST AS APPROPRIATE
Protective Gloves:	COTTON GLOVES RECOMMENDED
Eye Protection:	SAFETY GOGGLES OR SAFETY GLASSES WITH SIDE SHIELDS
Respiratory Protection:	WEAR A NIOSH APPROVED MASK IF CONCENTRATION IS TO EXCEED TLV
Other Protective Equipment:	NONE

---

## IX. REGULATORY & TRANSPORTATION INFORMATION

---

US DOT Proper Shipping Name:	"OIL WELL TREATING COMPOUND"	DOT ID Number:	NOT REGULATED
US DOT Hazard Class:		Freight Classification:	
ID Number:		Regulated by DOT:	
Unregulated by DOT:			
Special Transportation Note:			
Labels Required:			

---

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, expressed or implied, and we assume no responsibility for any damage or expense.

---



Health	2
Fire	0
Reactivity	0
Personal Protection	E

## Material Safety Data Sheet Bentonite MSDS

### Section 1: Chemical Product and Company Identification

**Product Name:** Bentonite

**Catalog Codes:** SLB1441, SLB2935, SLB4435

**CAS#:** 1302-78-9

**RTECS:** CT9450000

**TSCA:** TSCA 8(b) Inventory: Bentonite

**CI#:** Not applicable.

**Synonym:** Montmorillonite;

**Chemical Name:** Not available.

**Chemical Formula:**

(Al,Fe<sub>1.67</sub>Mg<sub>.33</sub>)Si<sub>10</sub>(OH)<sub>2</sub>Na<sup>(+)</sup>Ca<sup>(++)</sup>/2.33

**Contact Information:**

**Sciencelab.com, Inc.**

14025 Smith Rd.

Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: [ScienceLab.com](http://ScienceLab.com)

**CHEMTREC (24HR Emergency Telephone), call:**  
1-800-424-9300

**International CHEMTREC, call: 1-703-527-3887**

**For non-emergency assistance, call: 1-281-441-4400**

### Section 2: Composition and Information on Ingredients

**Composition:**

Name	CAS #	% by Weight
Bentonite	1302-78-9	100

**Toxicological Data on Ingredients:** Bentonite LD50: Not available. LC50: Not available.

### Section 3: Hazards Identification

**Potential Acute Health Effects:**

Hazardous in case of eye contact (irritant), of inhalation. Slightly hazardous in case of skin contact (irritant), of ingestion.

**Potential Chronic Health Effects:**

Hazardous in case of inhalation.

**CARCINOGENIC EFFECTS:** Not available.

**MUTAGENIC EFFECTS:** Not available.

**TERATOGENIC EFFECTS:** Not available.

**DEVELOPMENTAL TOXICITY:** Not available.

The substance is toxic to lungs.

Repeated or prolonged exposure to the substance can produce target organs damage.

#### Section 4: First Aid Measures

**Eye Contact:**

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention.

**Skin Contact:** Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

**Serious Skin Contact:** Not available.

**Inhalation:**

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

**Serious Inhalation:** Not available.

**Ingestion:**

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Serious Ingestion:** Not available.

#### Section 5: Fire and Explosion Data

**Flammability of the Product:** Non-flammable.

**Auto-Ignition Temperature:** Not applicable.

**Flash Points:** Not applicable.

**Flammable Limits:** Not applicable.

**Products of Combustion:** Not available.

**Fire Hazards in Presence of Various Substances:** Not applicable.

**Explosion Hazards in Presence of Various Substances:**

Risks of explosion of the product in presence of mechanical impact: Not available.

Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions:** Not applicable.

**Special Remarks on Fire Hazards:** Not available.

**Special Remarks on Explosion Hazards:** Not available.

#### Section 6: Accidental Release Measures

**Small Spill:**

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large Spill:**

Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

## Section 7: Handling and Storage

### Precautions:

Do not breathe dust. Avoid contact with eyes. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible.

**Storage:** Keep container tightly closed. Keep container in a cool, well-ventilated area.

## Section 8: Exposure Controls/Personal Protection

### Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

### Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

### Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

### Exposure Limits:

TWA: 10 from ACGIH (TLV) [United States]

Consult local authorities for acceptable exposure limits.

## Section 9: Physical and Chemical Properties

**Physical state and appearance:** Solid.

**Odor:** Odorless.

**Taste:** Not available.

**Molecular Weight:** Not available.

**Color:** Beige. (Light.)

**pH (1% soln/water):** Not available.

**Boiling Point:** Not available.

**Melting Point:** Decomposes.

**Critical Temperature:** Not available.

**Specific Gravity:** 2.5 (Water = 1)

**Vapor Pressure:** Not applicable.

**Vapor Density:** Not available.

**Volatility:** Not available.

**Odor Threshold:** Not available.

**Water/Oil Dist. Coeff.:** Not available.

**Ionicity (In Water):** Not available.

**Dispersion Properties:** Not available.

**Solubility:**

Very slightly soluble in cold water, hot water.

Insoluble in methanol, diethyl ether, n-octanol, acetone.

### Section 10: Stability and Reactivity Data

**Stability:** The product is stable.

**Instability Temperature:** Not available.

**Conditions of Instability:** Not available.

**Incompatibility with various substances:** Not available.

**Corrosivity:** Not available.

**Special Remarks on Reactivity:** Not available.

**Special Remarks on Corrosivity:** Not available.

**Polymerization:** Will not occur.

### Section 11: Toxicological Information

**Routes of Entry:** Eye contact. Inhalation.

**Toxicity to Animals:**

LD50: Not available.

LC50: Not available.

**Chronic Effects on Humans:** Causes damage to the following organs: lungs.

**Other Toxic Effects on Humans:**

Hazardous in case of Inhalation.

Slightly hazardous in case of skin contact (irritant), of Ingestion.

**Special Remarks on Toxicity to Animals:** Not available.

**Special Remarks on Chronic Effects on Humans:** Not available.

**Special Remarks on other Toxic Effects on Humans:** Not available.

### Section 12: Ecological Information

**Ecotoxicity:** Not available.

**BOD5 and COD:** Not available.

**Products of Biodegradation:**

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation:** The products of degradation are as toxic as the original product.

**Special Remarks on the Products of Biodegradation:** Not available.

### Section 13: Disposal Considerations

**Waste Disposal:**

### Section 14: Transport Information

**DOT Classification:** Not a DOT controlled material (United States).

**Identification:** Not applicable.

**Special Provisions for Transport:** Not applicable.

### Section 15: Other Regulatory Information

**Federal and State Regulations:** TSCA 8(b) inventory: Bentonite

**Other Regulations:** OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

**Other Classifications:**

**WHMIS (Canada):** CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

**DSCL (EEC):** R36- Irritating to eyes.

**HMIS (U.S.A.):**

**Health Hazard:** 2

**Fire Hazard:** 0

**Reactivity:** 0

**Personal Protection:** E

**National Fire Protection Association (U.S.A.):**

**Health:** 2

**Flammability:** 0

**Reactivity:** 0

**Specific hazard:**

**Protective Equipment:**

Gloves.

Lab coat.

Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Splash goggles.

### Section 16: Other Information

**References:** Not available.

**Other Special Considerations:** Not available.

**Created:** 10/10/2005 08:14 PM

**Last Updated:** 10/10/2005 08:14 PM

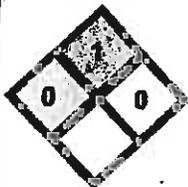
*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall ScienceLab.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.*



# MATERIAL SAFETY DATA SHEET

C-12

**NFPA**



## 1. Product And Company Identification

**Supplier**

Chemplex, L.C.  
P.O. Box 1071  
506 CR 137  
Snyder, TX 79550 United States  
Telephone Number: 915-573-7298  
FAX Number: (915) 573-3340

**Manufacturer**

Chemplex, L.C.  
P.O. Box 1071  
506 CR 137  
Snyder, TX 79550 United States  
Telephone Number: 915-573-7298  
FAX Number: (915) 573-3340

**Supplier Emergency Contacts & Phone Number**  
(800) 633-8253

**Manufacturer Emergency Contacts & Phone Number**  
(800) 633-8253

Issue Date: 05/20/2002

Product Name: C-12  
CAS Number: Not Established  
MSDS Number: 12

**Product/Material Uses**

Petrochemical industry: Cement Fluid Loss Additive

## 2. Composition/Information On Ingredients

Ingredient Name	CAS Number	Percent Of Total Weight
NO hazardous ingredients. - treat as nuisance dust.	Not Establish	

## 3. Hazards Identification

**Primary Routes(s) Of Entry**

Ingestion, inhalation.

## 4. First Aid Measures

**Eye**

IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used.

**Skin**

No known EFFECT according to our database.

**gestion**

Slight Ingestion: DO NOT induce vomiting. Have conscious person drink several glasses of water or milk. Seek



# MATERIAL SAFETY DATA SHEET

C-12

## 4. First Aid Measures - Continued

### Ingestion - Continued

immediate medical attention.

**HAZARDOUS INGESTION:** Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

### Inhalation

Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

## 5. Fire Fighting Measures

### Fire Fighting Instructions

**SMALL FIRE:** Use DRY chemical, CO<sub>2</sub>, water spray or foam.

**LARGE FIRE:** Use water spray, fog or foam. DO NOT use water jet.

## 6. Accidental Release Measures

**Small Spill and Leak:** Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local regional authority requirements.

**Large Spill and Leak:** Our database contains no additional information in case of a spill and/or a leak of the product. Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

## 7. Handling And Storage

### Handling Precautions

Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. DO NOT breathe dust.

### Storage Precautions

Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

## Protective Clothing (Pictograms)



## 8. Exposure Controls/Personal Protection

### Eye/Face Protection

Safety glasses with side shields or goggles.

Mask

### Skin Protection

Full suit

### Respiratory Protection

Face Mask



# MATERIAL SAFETY DATA SHEET

C-12

## 9. Physical And Chemical Properties

### Appearance

Solid.  
Light brown.

### Odor

Moth ball like (slight)

Chemical Type: Mixture

pH Factor: 8 At a Concentration Of 1% soln/water

## 10. Stability And Reactivity

**Stability:** The product is stable.

## 11. Toxicological Information

### Acute Studies

No specific information is available in our database regarding the other toxic effects of this material for humans.

## 12. Ecological information

No Data Available...

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

### Proper Shipping Name

Not DOT Regulated

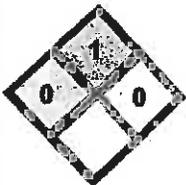
## 15. Regulatory Information

### U.S. Regulatory Information

Not DOT Regulated

All components of this product are listed in the TSCA inventory.

### NFPA



## 16. Other Information

### Revision/Preparer Information

MSDS Preparer: Dr. Edward F. Vinson

MSDS Preparer Phone Number: 915-573-7298

# MATERIAL SAFETY DATA SHEET

C-12

## 16. Other Information - Continued

### Revision/Preparer Information - Continued

This MSDS Supersedes A Previous MSDS Dated: 10/24/2001

### Disclaimer

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purposes(s).

**Chemplex, L.C.**

Printed Using MSDS Generator™ 2000



# Material Safety Data Sheet

NFPA	Protective Clothing	DOT

## Section I. Product Identification and Uses

<b>Common/Trade name</b>	<b>Chemplex C-15</b>	<b>CI#</b>	Not applicable.
<b>Synonyms</b>	Not available.	<b>TSCA</b>	All components listed.
<b>Chemical name</b>	Not applicable.	<b>CAS#</b>	Not available.
<b>Chemical formula</b>	Not applicable.	<b>Code</b>	<small>Not DOT Registered Emergency Response (800)833-6253</small>
<b>Chemical family</b>	Mixture	<b>Molecular weight</b>	Not applicable.
<b>Supplier</b>	Chemplex, L.C. P.O. Box 1071 Snyder, TX 79550 (915) 573-7298	<b>Manufacturer</b>	Chemplex, L.C. P.O. Box 1071 Snyder, TX 79550 (915) 573-7298
<b>Material uses</b>	Petrochemical industry: Cement Fluid Loss Additive		

## Section IA. First Aid Measures

<b>Eye contact</b>	IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used.
<b>Skin contact</b>	NO known EFFECT according to our database.
<b>Hazardous skin contact</b>	No additional information.
<b>Slight inhalation</b>	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
<b>Hazardous inhalation</b>	No additional information.
<b>Slight ingestion</b>	DO NOT induce vomiting. Have conscious person drink several glasses of water or milk. Seek immediate medical attention.
<b>Hazardous ingestion</b>	DO NOT induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

## Section II. Hazardous Ingredients

Name	CAS #	% by Weight	TLV/PEL	LC <sub>50</sub> /LD <sub>50</sub>
No hazardous ingredient.				

## Section III. Physical Data

Physical state and appearance	Powder	Odor	Mild, characteristic
pH (1% soln/water)	8-10	Taste	Not available.
Odor threshold	Not available.	Color	Reddish
Volatility	<5% (w/w).		
Melting point	Not Known		
Boiling point	Not available.		
Specific gravity	1.6 (water = 1)		
Vapor density	Not available.		
Vapor pressure	Not available.		
Evaporation rate	Not available.		
Viscosity	Not available.		
LogK <sub>ow</sub>	Not available.		
Ionicity (surface active agent)	Anionic.		
Critical temperature	Not available.		
Instability temperature	Not available.		
Conditions of instability	No additional remark.		
Dispersion properties	See solubility in water.		
Solubility	Soluble; forms thick solution		

## Section IV. Fire and Explosion Data

page 3/5

The product is: Combustible.

Auto-ignition temperature Not available.

Fire degradation products Oxides of carbon and sulfur..

Flash points Not available.

Flammable limits Not available.

Fire extinguishing procedures  
SMALL FIRE: Use DRY chemicals, CO2, water spray or foam.  
LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.

Flammability No specific information is available in our database regarding the flammability of this product in presence of various materials. Highly dispersed dust could potentially ignite or explode if ignited.

**Remark**  
No additional remark.

Risks of explosion Risks of explosion of the product in presence of mechanical impact: Not available.  
Risks of explosion of the product in presence of static discharge: Not available.  
No specific information is available in our database regarding the product's risks of explosion in the presence of various materials.

**Remark**  
No additional remark.

## Section V. Reactivity Data

Stability The product is stable.

Hazardous decomp. products Not available.

Degradability Not available.

Products of degradation  
Not available.  
Not available.

**Remark**  
No additional remark.

Corrosivity No specific information is available in our database regarding the corrosivity of this product in presence of various materials.

**Remark**  
No additional remark.

Reactivity No specific information is available in our database regarding the reactivity of this material in presence of various other materials.

**Remark**  
No additional remark.

## Section VI. Toxicological Properties

page 4/5

Routes of entry      Ingestion.

TLV                      Not available.

Toxicity for animals    LD50: >5g/kg (oral, rat)  
LC50: Not available.

**Remark**  
No additional remark.

Chronic effects on humans    Toxicity of the product to the reproductive system: Not available.

**Remark**  
No additional remark.

Acute effects on humans    No specific information is available in our database regarding the other toxic effects of this material for humans.

**Remark**  
No additional remark.

## Section VII. Preventive Measures

**Waste disposal**      Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

**Storage**                Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

**Precautions**          Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. DO NOT breathe dust.

**Small spill and leak**    Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large spill and leak**    Our database contains no additional information in case of a spill and/or a leak of the product. Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Wet product may become slippery.

**Protective Clothing**    Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

### Section VIII. Classification

**DOT** Not a DOT controlled material (United States).



Not applicable

**Remark**

Not available.

**Maritime transportation**



**Remark**

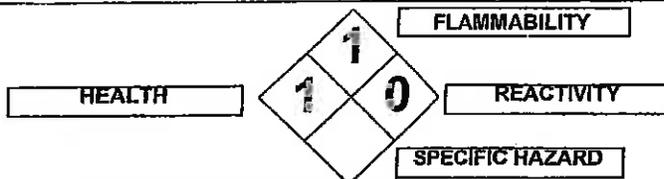
Not applicable.

**HCS** Not controlled under the HCS (United States).

**Remark**

Not applicable.

**NFPA**



**Federal and State Regulations**

### Section IX. Protective Clothing

Safety glasses. Lab coat. Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent.



### Section X. Other Information

**References** Not available.

Validated by Chemplex on 12/15/2000.

Verified by Chemplex, L.C..

Printed 12/15/2000.

**EMERGENCY RESPONSE (800) 633-8253**

*To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.*

# Chemplex C-20



Chemplex, Ltd.  
506 CR 1071  
Snyder, TX 79549  
(325) 573-7298

DATE PREPARED:.....04/11/2002  
REVISION DATE:.....06/29/2006  
EMERGENCY NUMBER:....**800-633-8253**  
PRODUCT NUMBER:..... 01719

## SECTION I – IDENTIFICATION

PRODUCT NAME: ..... Chemplex C-20  
CHEMICAL FAMILY: ..... Lignosulfonate Salt  
PRODUCT USE: ..... Cement Retarder.

## SECTION II – HAZARDOUS INGREDIENTS

<i>HAZ INGREDIENT</i>	<i>PERCENT</i>	<i>CAS NUMBER</i>	<i>PEL</i>
No hazardous ingredients			

## SECTION III – PHYSICAL DATA

APPEARANCE: ..... Tan to brown powder.  
ODOR: ..... Slight, earthy.  
BOILING POINT: ..... N/A  
FLASHPOINT: ..... N/A  
VAPOR DENSITY (AIR=1): ..... N/A  
SPECIFIC GRAVITY (WATER=1): ..... 1.54 (water=1)  
pH (1% SOLN/WATER):.....Near neutral

## SECTION IV – FIRE AND EXPLOSION DATA

FLASHPOINT: .....None  
FLAMMABLE HAZARDS: .....May burn in surrounding flames.

## SECTION V – REACTIVITY DATA

STABILITY: ..... This product is stable.  
CORROSIVITY: ..... Not corrosive.

# Chemplex C-20

REACTIVITY: .....No known hazards.

**SECTION VI A - HEALTH HAZARD DATA**

ROUTE OF ENTRY: ..... Ingestion. Skin Contact.

CHRONIC EFFECTS ON HUMANS: ... None known beyond those for acute exposure.

**SECTION VI B - FIRST AID**

INHALATION: ..... **SLIGHT INHALATION:** Allow the victim to rest in a well ventilated area. Seek immediate medical attention.  
**HAZARDOUS INHALATION:** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention.

INGESTION: ..... **SLIGHT INGESTION:** Do not induce vomiting. Have conscious person drink several glasses of water or milk. Seek immediate medical attention.  
**HAZARDOUS INGESTION: DO NOT INDUCE VOMITING.** Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waist band. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

EYE CONTACT: ..... Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

SKIN CONTACT: ..... If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victims exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. **COLD** water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

# Chemplex C-20

## SECTION VII – SPILL, STORAGE AND DISPOSAL DATA

**SPILL:** ..... Use appropriate tools to put the spilled solid in a convenient waste disposal container. Avoid creating or breathing dust.

**WASTE DISPOSAL:** ..... Dispose in accordance with all applicable regulations.

**HANDLING:** ..... Keep container dry. DO NOT breathe dust. Wear suitable protective clothing. If you feel unwell, seek medical attention and show the label when possible.

**STORAGE:** ..... Store in a dry place.

## SECTION VIII – PROTECTIVE CLOTHING

**RESPIRATORY PROTECTION:** ..... Dust mask.

**PROTECTIVE CLOTHING/EQUIPMENT:** .....Goggles and gloves.

## SECTION IX – TRANSPORTATION DATA

**PROPER SHIPPING NAME:** ..... Not DOT Regulated.

**HAZARD CLASS:** ..... None

**UN NUMBER:** ..... None

**PACKAGING GROUP:** ..... None

**RQ:** ..... N/A

**DOT SHIPPING:** ..... Not DOT Regulated.

## SECTION X – OTHER REGULATORY INFORMATION

**TSCA STATUS:** .....Listed on inventory.

**NFPA HEALTH:** .....0

**NFPA FLAMMABILITY:** ..... 1

**NFPA REACTIVITY:** .....0

## SECTION XI - ADDITIONAL INFORMATION

**PREPARED BY:** ..... Edward F. Vinson

**EMERGENCY RESPONSE NUMBER:** ..... **800-633-8253**

Trade Name: **BRITESIL® C24 Hydrous Sodium Silicate**  
Date Prepared: 09/11/06

Page: 1 of 5

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: BRITESIL® C24 Hydrous Sodium silicate  
Product description: A 2.4 weight ratio hydrous sodium silicate powder  
Manufacturer: PQ Corporation  
P. O. Box 840  
Valley Forge, PA 19482 USA  
Telephone: 610-651-4200  
In case of emergency call: 610-651-4200  
For transportation emergency  
Call CHEMTREC: 800-424-9300

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical and Common Name	CAS Registry Number	Wt. %	OSHA PEL	ACGIH TLV
Silicic acid, sodium salt;	1344-09-8	~82.5%	Not Established	Not Established
Sodium silicate				
Water	7732-18-5	~17.5%	Not Established	Not Established

### 3. HAZARDS IDENTIFICATION

*Emergency Overview:* White, odorless, powder. Causes eye burns and skin irritation. Dust irritating to respiratory tract. Due to high pH of product, release into surface water is harmful to aquatic life. Noncombustible. Reacts with acids and some organics.

*Eye contact:* Causes eye burns.  
*Skin contact:* Causes skin irritation.  
*Inhalation:* Dust irritating to respiratory tract.  
*Ingestion:* Causes irritation to mouth, esophagus, and stomach.  
*Chronic hazards:* No known chronic hazards. Not listed by NTP, IARC or OSHA as a carcinogen.  
*Physical hazards:* Can etch glass if not promptly removed.

### 4. FIRST AID MEASURES

*Eye:* In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

*Skin:* In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention.

*Inhalation:* Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

*Ingestion:* If swallowed, DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

---

Trade Name: **BRITESIL® C24 Hydrous Sodium Silicate**

Date Prepared: 09/11/06

Page: 2 of 5

---

## **5. FIRE FIGHTING MEASURES**

*Flammable limits* This material is noncombustible.

*Extinguishing Media:* This material is compatible with all extinguishing media.

*Hazards to fire-fighters:* See Section 3 for information on hazards when this material is present in the area of a fire.

*Fire-fighting equipment:* The following protective equipment for fire fighters is recommended when this material is present in the area of a fire: chemical goggles, body-covering protective clothing, chemical resistant gloves, and rubber boots.

---

## **6. ACCIDENTAL RELEASE MEASURES**

*Personal protection:* Wear chemical goggles, body-covering protective clothing, chemical resistant gloves, and rubber boots, NIOSH-approved dust respirator where dust occurs. See section 8.

*Environmental Hazards:* Sinks and mixes with water. High pH of this material is harmful to aquatic life, see Section 12.

*Small spill cleanup:* Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust. Use appropriate Personal Protective Equipment (PPE). See section 8.

*Large spill cleanup:* Keep unnecessary people away; isolate hazard area and deny entry. Do not touch or walk through spilled material. Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust. Use appropriate Personal Protective Equipment (PPE). See section 8. In case of contact with water, prevent runoff from entering into storm sewers and ditches which lead to natural waterways. Neutralize contaminated area and flush with large quantities of water. Comply with applicable environmental regulations.

*CERCLA RQ:* There is no CERCLA Reportable Quantity for this material. If a spill goes off site, notification of state and local authorities is recommended.

---

## **7. HANDLING AND STORAGE**

*Handling:* Do not get in eyes. Avoid contact with skin and clothing. Avoid breathing dust. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Promptly clean up spills.

*Storage:* Keep containers closed. Store in clean steel or plastic containers. Separate from acids, reactive metals, and ammonium salts. Do not store in aluminum, fiberglass, copper, brass, zinc or galvanized containers. This product can absorb water from the air. In case of high humidity or storage for extended periods of time, use plastic bags to enclose product containers to avoid caking.

---

---

Trade Name: **BRITESIL® C24 Hydrous Sodium Silicate**

Date Prepared: 09/11/06

Page: 3 of 5

---

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

*Engineering controls:* Use only with adequate ventilation. Keep containers closed. Safety shower and eyewash fountain should be within direct access.

*Respiratory protection:* Use a NIOSH-approved dust respirator where dust occurs. Observe OSHA regulations for respirator use (29 C.F.R. §1910.134)

*Skin protection:* Wear body-covering protective clothing and gloves.

*Eye protection:* Wear chemical goggles.

---

### 9. PHYSICAL AND CHEMICAL PROPERTIES

*Appearance:* Powder.

*Color:* White.

*Odor:* Odorless or musty odor.

*pH:* Approximately 12.3

*Bulk density:* Approximately 38 lbs/ft<sup>3</sup> untamped.

*Solubility in water:* Soluble in all proportions.

---

### 10. STABILITY AND REACTIVITY

*Stability:* This material is stable under all conditions of use and storage.

*Conditions to avoid:* None.

*Materials to avoid:* Generates heat when mixed with acid. May react with ammonium salt solutions resulting in evolution of ammonia gas. Flammable hydrogen gas may be produced on contact with aluminum, tin, lead, and zinc.

*Hazardous decomposition products:* Hydrogen.

---

### 11. TOXICOLOGICAL INFORMATION

*Acute Data:* When tested for primary irritation potential, a similar material caused severe irritation to the eyes and was slightly irritating to the skin. Human experience confirms that irritation occurs when sodium silicates get on clothes at the collar, cuffs or other areas where abrasion may occur. The acute oral toxicity of this product has not been tested. When sodium silicates were tested on a 100% solids basis, their single dose acute oral LD<sub>50</sub> in rats ranged from 1500 mg/kg to 3200 mg/kg. The acute oral lethality resulted from nonspecific causes. This product contains approximately 82.5% sodium silicate.

*Subchronic Data:* In a study of rats fed sodium silicate in drinking water for three months, at 200, 600 and 1800 ppm, changes were reported in the blood chemistry of some animals, but no specific changes to the organs of the animals due to sodium silicate administration were observed in any of the dosage groups. Another study reported adverse effects to the kidneys of dogs fed sodium silicate in their diet at 2.4g/kg/day for 4 weeks, whereas rats fed the same dosage did not develop any treatment-related effects. Decreased numbers of births and survival to weaning was reported for rats fed sodium silicate in their drinking water at 600 and 1200 ppm.

---

Trade Name: **BRITESIL® C24 Hydrous Sodium Silicate**  
Date Prepared: 09/11/06

Page: 4 of 5

---

*Special Studies:* Sodium silicate was not mutagenic to the bacterium E. Coli when tested in a mutagenicity bioassay. There are no known reports of carcinogenicity of sodium silicates. Frequent ingestion over extended periods of time of gram quantities of silicates is associated with the formation kidney stones and other siliceous urinary calculi in humans. Sodium silicate is not listed by IARC, NTP or OSHA as a carcinogen.

---

## 12. ECOLOGICAL INFORMATION

*Eco toxicity:* The following data is reported for sodium silicates on a 100% solids basis: A 96 hour median tolerance for fish (*Gambusia affinis*) of 2320 ppm; a 96 hour median tolerance for water fleas (*Daphnia magna*) of 247 ppm; a 96 hour median tolerance for snail eggs (*Lymnea*) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm. This product contains approximately 82.5% sodium silicate.

*Environmental Fate:* This material is not persistent in aquatic systems, but its high pH when undiluted or unneutralized is acutely harmful to aquatic life. Diluted material rapidly depolymerizes to yield dissolved silica in a form that is indistinguishable from natural dissolved silica. It does not contribute to BOD. This material does not bioaccumulate except in species that use silica as a structural material such as diatoms and siliceous sponges. Where abnormally low natural silica concentrations exist (less than 0.1 ppm), dissolved silica may be a limiting nutrient for diatoms and a few other aquatic algal species. However, the addition of excess dissolved silica over the limiting concentration will not stimulate the growth of diatom populations; their growth rate is independent of silica concentration once the limiting concentration is exceeded. Neither silica nor sodium will appreciably bioconcentrate up the food chain.

*Physical/Chemical:* Sinks and mixes with water. Only water will evaporate from this material.

---

## 13. DISPOSAL CONSIDERATIONS

*Classification:* Disposed material is not a hazardous waste.  
*Disposal Method:* Dispose in accordance with federal, state and local regulations and permits.

---

## 14. TRANSPORT INFORMATION

*DOT UN Status:* This material is not regulated hazardous material for transportation.

---

---

Trade Name: **BRITESIL® C24 Hydrous Sodium Silicate**  
Date Prepared: 09/11/06

Page: 5 of 5

---

**15. REGULATORY INFORMATION**

**CERCLA:** No CERCLA Reportable Quantity has been established for this material.  
**SARA TITLE III:** Not an Extremely Hazardous Substance under §302. Not a Toxic Chemical under §313. Hazard Categories under §§311/312: Acute  
**TSCA:** All ingredients of this material are listed on the TSCA inventory.  
**FDA:** The use of sodium silicate is authorized by FDA as a boiler water additive for the production of steam that will contact food pursuant to 21 CFR §173.310; as a component of zinc-silicon dioxide matrix coatings on food contact surfaces pursuant to 21 CFR §175.390(c); as a GRAS substance when migrating from cotton fabric used in dry food packaging pursuant to 21 CFR §182.70; and as a GRAS substance when migrating to food from paper and paperboard products pursuant to 21 CFR §182.90.

---

**16. OTHER INFORMATION**

**Prepared by:** John G. Blumberg  
**Supersedes revision of:** 03/07/05

THE INFORMATION ON THIS SAFETY DATA SHEET IS BELIEVED TO BE ACCURATE AND IT IS THE BEST INFORMATION AVAILABLE TO PQ CORPORATION THIS DOCUMENT IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONS FOR HANDLING A CHEMICAL BY A PERSON TRAINED IN CHEMICAL HANDLING. PQ CORPORATION MAKES NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED WITH RESPECT TO SUCH INFORMATION OR THE PRODUCT TO WHICH IT RELATES, AND WE ASSUME NO LIABILITY RESULTING FROM THE USE OR HANDLING OF THE PRODUCT TO WHICH THIS SAFETY DATA SHEET RELATES. USERS AND HANDLERS OF THIS PRODUCT SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION PROVIDED HEREIN FOR THEIR OWN PURPOSES.

---

REPORT NUMBER: 703

MSDS NO: 34818

MAINFRAME UPLOAD DATE: 09/16/08

UNIVAR USA INC.  
MATERIAL SAFETY DATA SHEET

PAGE: 001

VERSION: 005

PRODUCT: BRITESIL C24 HYDROUS SODIUM SILICATE

ORDER NO: 220581  
PROD NO : 227210

O-TEX PUMPING LLC  
265 M. STREET

QUITMAN ,AR 72131

UNIVAR USA INC.  
17425 NE UNION HILL RD , REDMOND

(425)889-3400  
, WA 98052

----- EMERGENCY ASSISTANCE -----

FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL - CHEMTREC  
(800)424-9300

PRODUCT NAME: BRITESIL C24 HYDROUS SODIUM SILICATE  
MSDS NUMBER: 34818  
DATE ISSUED: 09/11/2006  
SUPERSEDES: 03/07/2005  
ISSUED BY: 008808

\*\*\*\*\*  
\*\*\*\*\*

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: BRITESIL C24 HYDROUS SODIUM SILICATE  
PRODUCT DESCRIPTION: A 2.4 WEIGHT RATIO HYDROUS SODIUM SILICATE POWDER

MANUFACTURER:  
PQ CORPORATION  
P. O. BOX 840  
VEY FORGE, PA 19482 USA

TELEPHONE: 610-651-4200

PRODUCT: BRITESIL C24 HYDROUS SODIUM SILICATE

ORDER NO: 220581  
PROD NO : 227210

-----  
IN CASE OF EMERGENCY CALL: 610-651-4200  
FOR TRANSPORTATION EMERGENCY  
CALL CHEMTREC: 800-424-9300

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL AND COMMON NAME	CAS REGISTRY NUMBER	WT. %	OSHA PEL	ACGIH TLV
SILICIC ACID, SODIUM SALT; SODIUM SILICATE	1344-09-8	-82.5%	N/E	N/E
WATER	7732-18-5	-17.5%	N/E	N/E

N/E = NOT ESTABLISHED

## 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: WHITE, ODORLESS, POWDER. CAUSES EYE BURNS AND SKIN IRRITATION. DUST IRRITATING TO RESPIRATORY TRACT. DUE TO HIGH PH OF PRODUCT, RELEASE INTO SURFACE WATER IS HARMFUL TO AQUATIC LIFE.  
N/ COMBUSTIBLE. REACTS WITH ACIDS AND SOME ORGANICS.

EYE CONTACT: CAUSES EYE BURNS.

SKIN CONTACT: CAUSES SKIN IRRITATION.

INHALATION: DUST IRRITATING TO RESPIRATORY TRACT.

INGESTION: CAUSES IRRITATION TO MOUTH, ESOPHAGUS, AND STOMACH.

CHRONIC HAZARDS: NO KNOWN CHRONIC HAZARDS. NOT LISTED BY NTP, IARC OR OSHA AS A CARCINOGEN.

PHYSICAL HAZARDS: CAN ETCH GLASS IF NOT PROMPTLY REMOVED.

## 4. FIRST AID MEASURES

EYE: IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN: IN CASE OF CONTACT, IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER. REMOVE CONTAMINATED CLOTHING AND SHOES. GET MEDICAL ATTENTION.

INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET MEDICAL ATTENTION.

INGESTION: IF SWALLOWED, DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION IMMEDIATELY. IF VICTIM IS FULLY CONSCIOUS, GIVE A CUPFUL OF WATER. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

REPORT NUMBER: 703

UNIVAR USA INC.

PAGE: 003

MSDS NO: 34818

MATERIAL SAFETY DATA SHEET

MAINFRAME UPLOAD DATE: 09/16/08

VERSION: 005

PRODUCT: BRITESIL C24 HYDROUS SODIUM SILICATE

ORDER NO: 220581

PROD NO : 227210

---

## 5. FIRE FIGHTING MEASURES

FLAMMABLE LIMITS: THIS MATERIAL IS NONCOMBUSTIBLE.

EXTINGUISHING MEDIA: THIS MATERIAL IS COMPATIBLE WITH ALL EXTINGUISHING MEDIA.

HAZARDS TO FIRE-FIGHTERS: SEE SECTION 3 FOR INFORMATION ON HAZARDS WHEN THIS MATERIAL IS PRESENT IN THE AREA OF A FIRE.

FIRE-FIGHTING EQUIPMENT: THE FOLLOWING PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS IS RECOMMENDED WHEN THIS MATERIAL IS PRESENT IN THE AREA OF A FIRE: CHEMICAL GOGGLES, BODY-COVERING PROTECTIVE CLOTHING, CHEMICAL RESISTANT GLOVES, AND RUBBER BOOTS.

## 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTION: WEAR CHEMICAL GOGGLES, BODY-COVERING PROTECTIVE CLOTHING, CHEMICAL RESISTANT GLOVES, AND RUBBER BOOTS, NIOSH-APPROVED DUST RESPIRATOR WHERE DUST OCCURS. SEE SECTION 8.

ENVIRONMENTAL HAZARDS: SINKS AND MIXES WITH WATER. HIGH PH OF THIS MATERIAL IS HARMFUL TO AQUATIC LIFE, SEE SECTION 12.

SMALL SPILL CLEANUP: CAREFULLY SHOVEL OR SWEEP UP SPILLED MATERIAL AND PLACE IN SUITABLE CONTAINER. AVOID GENERATING DUST. USE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE). SEE SECTION 8.

LARGE SPILL CLEANUP: KEEP UNNECESSARY PEOPLE AWAY; ISOLATE HAZARD AREA AND DENY ENTRY. DO NOT TOUCH OR WALK THROUGH SPILLED MATERIAL. CAREFULLY SHOVEL OR SWEEP UP SPILLED MATERIAL AND PLACE IN SUITABLE CONTAINER. AVOID GENERATING DUST. USE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE). SEE SECTION 8. IN CASE OF CONTACT WITH WATER, PREVENT RUNOFF FROM ENTERING INTO STORM SEWERS AND DITCHES WHICH LEAD TO NATURAL WATERWAYS. NEUTRALIZE CONTAMINATED AREA AND FLUSH WITH LARGE QUANTITIES OF WATER. COMPLY WITH APPLICABLE ENVIRONMENTAL REGULATIONS.

CERCLA RQ: THERE IS NO CERCLA REPORTABLE QUANTITY FOR THIS MATERIAL. IF A SPILL GOES OFF SITE, NOTIFICATION OF STATE AND LOCAL AUTHORITIES IS RECOMMENDED.

## 7. HANDLING AND STORAGE

HANDLING: DO NOT GET IN EYES. AVOID CONTACT WITH SKIN AND CLOTHING. AVOID BREATHING DUST. KEEP CONTAINER CLOSED. USE ONLY WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING. PROMPTLY CLEAN UP SPILLS.

REPORT NUMBER: 703

UNIVAR USA INC.

PAGE: 004

MSDS NO: 34818

MATERIAL SAFETY DATA SHEET

MAINFRAME UPLOAD DATE: 09/16/08

VERSION: 005

PRODUCT: BRITESIL C24 HYDROUS SODIUM SILICATE

ORDER NO: 220581

PROD NO : 227210

-----

STORAGE: KEEP CONTAINERS CLOSED. STORE IN CLEAN STEEL OR PLASTIC CONTAINERS. SEPARATE FROM ACIDS, REACTIVE METALS, AND AMMONIUM SALTS. DO NOT STORE IN ALUMINUM, FIBERGLASS, COPPER, BRASS, ZINC OR GALVANIZED CONTAINERS. THIS PRODUCT CAN ABSORB WATER FROM THE AIR. IN CASE OF HIGH HUMIDITY OR STORAGE FOR EXTENDED PERIODS OF TIME, USE PLASTIC BAGS TO ENCLOSE PRODUCT CONTAINERS TO AVOID CAKING.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: USE ONLY WITH ADEQUATE VENTILATION. KEEP CONTAINERS CLOSED. SAFETY SHOWER AND EYEWASH FOUNTAIN SHOULD BE WITHIN DIRECT ACCESS.

RESPIRATORY PROTECTION: USE A NIOSH-APPROVED DUST RESPIRATOR WHERE DUST OCCURS. OBSERVE OSHA REGULATIONS FOR RESPIRATOR USE (29 C.F.R. 1910.134)

SKIN PROTECTION: WEAR BODY-COVERING PROTECTIVE CLOTHING AND GLOVES.

EYE PROTECTION: WEAR CHEMICAL GOGGLES.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: POWDER.

COLOR: WHITE.

ODOR: ODORLESS OR MUSTY ODOR.

PH: APPROXIMATELY 12.3

BULK DENSITY: APPROXIMATELY 38 LBS/FT<sup>3</sup> UNTAMPED.

SOLUBILITY IN WATER: SOLUBLE IN ALL PROPORTIONS.

#### 10. STABILITY AND REACTIVITY

STABILITY: THIS MATERIAL IS STABLE UNDER ALL CONDITIONS OF USE AND STORAGE.

CONDITIONS TO AVOID: NONE.

MATERIALS TO AVOID: GENERATES HEAT WHEN MIXED WITH ACID. MAY REACT WITH AMMONIUM SALT SOLUTIONS RESULTING IN EVOLUTION OF AMMONIA GAS. FLAMMABLE HYDROGEN GAS MAY BE PRODUCED ON CONTACT WITH ALUMINUM, TIN, LEAD, AND ZINC.

HAZARDOUS DECOMPOSITION PRODUCTS: HYDROGEN.

#### 11. TOXICOLOGICAL INFORMATION

REPORT NUMBER: 703

MSDS NO: 34818

MAINFRAME UPLOAD DATE: 09/16/08

UNIVAR USA INC.  
MATERIAL SAFETY DATA SHEET

PAGE: 006

VERSION: 005

PRODUCT: BRITESIL C24 HYDROUS SODIUM SILICATE

ORDER NO: 220581

PROD NO : 227210

-----  
THE LIMITING CONCENTRATION IS EXCEEDED. NEITHER SILICA NOR SODIUM WILL APPRECIABLY BIOCONCENTRATE UP THE FOOD CHAIN.

PHYSICAL/CHEMICAL: SINKS AND MIXES WITH WATER. ONLY WATER WILL EVAPORATE FROM THIS MATERIAL.

### 13. DISPOSAL CONSIDERATIONS

CLASSIFICATION: DISPOSED MATERIAL IS NOT A HAZARDOUS WASTE.

DISPOSAL METHOD: DISPOSE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS AND PERMITS.

### 14. TRANSPORT INFORMATION

DOT UN STATUS: THIS MATERIAL IS NOT REGULATED HAZARDOUS MATERIAL FOR TRANSPORTATION.

### 15. REGULATORY INFORMATION

CL P1A: NO CERCLA REPORTABLE QUANTITY HAS BEEN ESTABLISHED FOR THIS MATERIAL.

SARA TITLE III: NOT AN EXTREMELY HAZARDOUS SUBSTANCE UNDER 302. NOT A TOXIC CHEMICAL UNDER 313. HAZARD CATEGORIES UNDER 311/312: ACUTE

TSCA: ALL INGREDIENTS OF THIS MATERIAL ARE LISTED ON THE TSCA INVENTORY.

FDA: THE USE OF SODIUM SILICATE IS AUTHORIZED BY FDA AS A BOILER WATER ADDITIVE FOR THE PRODUCTION OF STEAM THAT WILL CONTACT FOOD PURSUANT TO 21 CFR 173.310; AS A COMPONENT OF ZINC-SILICON DIOXIDE MATRIX COATINGS ON FOOD CONTACT SURFACES PURSUANT TO 21 CFR 175.390(C); AS A GRAS SUBSTANCE WHEN MIGRATING FROM COTTON FABRIC USED IN DRY FOOD PACKAGING PURSUANT TO 21 CFR 182.70; AND AS A GRAS SUBSTANCE WHEN MIGRATING TO FOOD FROM PAPER AND PAPERBOARD PRODUCTS PURSUANT TO 21 CFR 182.90.

### 16. OTHER INFORMATION

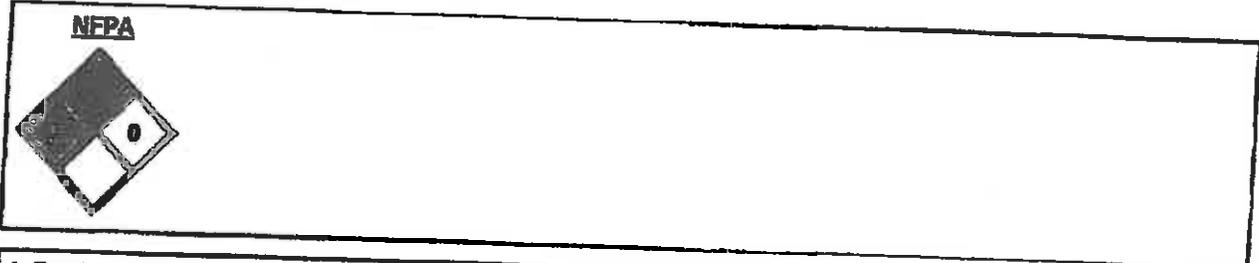
PREPARED BY: JOHN G. BLUMBERG





# MATERIAL SAFETY DATA SHEET

C-37



**1. Product And Company Identification**

<b>Supplier</b> Chemplex, L.C. P.O. Box 1071 506 CR 137 Snyder, TX 79550 United States Telephone Number: 915-573-7288 FAX Number: (915) 573-3340	<b>Manufacturer</b> Chemplex, L.C. P.O. Box 1071 506 CR 137 Snyder, TX 79550 United States Telephone Number: 915-573-7288 FAX Number: (915) 573-3340
<b>Supplier Emergency Contacts &amp; Phone Number</b> (800) 633-8253	<b>Manufacturer Emergency Contacts &amp; Phone Number</b> (800) 633-8253

Issue Date: 05/21/2002  
 Product Name: C-37  
 CAS Number: 9084-06-4  
 Chemical Family: Naphthalenesulfonate-formaldehyde resin.  
 MSDS Number: 21  
**Synonyms**  
 Not Available  
**Product/Material Uses**  
 Cement dispersant.

**2. Composition/Information On Ingredients**

Ingredient Name	CAS Number	Percent Of Total Weight
NO hazardous ingredients. - treat as nuisance dust.	Not Establish	

**3. Hazards Identification**

**Primary Route(s) Of Entry**  
Ingestion

**4. First Aid Measures**

**Eye**  
 IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used.

# MATERIAL SAFETY DATA SHEET



C-37

## 4. First Aid Measures - Continued

### Skin

No known EFFECT on skin contact, rinse with water for a few minutes.

### Ingestion

Remove dentures if any. Have conscious person drink several glasses of water or milk. Induce vomiting by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Never give an unconscious person anything to ingest. Seek medical attention.

### Inhalation

Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

## 5. Fire Fighting Measures

### Fire Fighting Instructions

Use water, carbon dioxide, dry chemicals or foam as appropriate for surrounding materials.

## 6. Accidental Release Measures

**Small Spill and Leak:** Mop up liquid or absorb small amounts using sand or other suitable absorbent. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.  
**Large Spill and Leak:** Our database contains no additional information in case of a spill and/or a leak of the product. Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

## 7. Handling And Storage

### Storage Precautions

No specific storage is required. Use shelves or cabinets sturdy enough to bear the weight of the chemicals. Be sure that it is not necessary to strain to reach materials, and that shelves are not overloaded.

### Protective Clothing (Pictograms)



## 8. Exposure Controls/Personal Protection

### Evo/Face Protection

Splash goggles

### Skin Protection

Full suit

Boots

Gloves

### Respiratory Protection

Dust mask

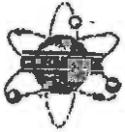
## 9. Physical And Chemical Properties

### Appearance

Tan powder.

# MATERIAL SAFETY DATA SHEET

C-37



## 9. Physical And Chemical Properties - Continued

### Odor

Faint, moth ball like.

**Chemical Type:** Mixture

**Physical State:** Solid

**pH Factor:** 7-10 At a Concentration Of 1% soln/water

## 10. Stability And Reactivity

**Stability:** The product is stable.

## 11. Toxicological Information

### Acute Studies

No specific information is available in our database regarding the other toxic effects of this material for humans.

## 12. Ecological Information

No Data Available...

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

### Proper Shipping Name

Not DOT Regulated

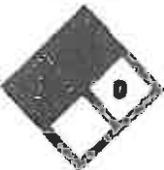
## 15. Regulatory Information

### U.S. Regulatory Information

Not DOT Regulated

All components of this product are listed in the TSCA inventory.

### NFPA



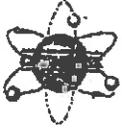
## 16. Other Information

### Revision/Preparer Information

**MSDS Preparer:** Dr. Edward F. Vinson

**MSDS Preparer Phone Number:** 815-573-7298

**This MSDS Supersedes A Previous MSDS Dated:** 10/26/2001



# MATERIAL SAFETY DATA SHEET

C-37

**Disclaimer**

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purposes(s).

**Chemplex, L.C.**

Printed Using MSDS Converter™ 2000

# Chemplex C-41L

	Chemplex, L.C. 506 CR 1071 Snyder, TX 79549 (325) 573-7298	DATE PREPARED:.....05/21/2002 REVISION DATE:.....05/09/2007 EMERGENCY NUMBER:... <b>800-633-8253</b> PRODUCT NUMBER:..... 01715
---	---	--

## SECTION I – IDENTIFICATION

**PRODUCT NAME:** ..... Chemplex C-41L  
**CHEMICAL FAMILY:** ..... Alcohol (Solvent)  
**PRODUCT USE:** .....Cement Defoamer

## SECTION II – HAZARDOUS INGREDIENTS

<i>HAZ INGREDIENT</i>	<i>PERCENT</i>	<i>CAS NUMBER</i>	<i>PEL</i>
Methyl Alcohol	60 %	67-56-1	
Tributyl Phosphate	40 %	126-73-8	

## SECTION III – PHYSICAL DATA

**APPEARANCE:** ..... Colorless to light yellow liquid.  
**ODOR:** ..... Disagreeable.  
**BOILING POINT:** ..... 150 °F  
**FLASHPOINT:** .....62 °F  
**VAPOR DENSITY (AIR=1):** .....N/A  
**SPECIFIC GRAVITY (WATER=1):** .....0.87 (water=1)  
**pH (1% SOLN/WATER):**.....Near 7

## SECTION IV – FIRE AND EXPLOSION DATA

**FLASHPOINT:** .....62 °F  
**FLAMMABLE HAZARDS:** .....Flammable liquid, soluble or dispersed in water.

## SECTION V – REACTIVITY DATA

**STABILITY:** ..... This product is stable.

# Chemplex C-41L

**CORROSIVITY:** ..... Not corrosive.  
**REACTIVITY:** ..... Reactive with oxidizing agents.

**SECTION VI A - HEALTH HAZARD DATA**

**ROUTE OF ENTRY:** ..... Inhalation. Ingestion.  
**CHRONIC EFFECTS ON HUMANS:** ... None known beyond those for acute exposure.

**SECTION VI B - FIRST AID**

**INHALATION:** ..... **SLIGHT INHALATION:** Allow the victim to rest in a well ventilated area. Seek immediate medical attention.  
**HAZARDOUS INHALATION:** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention.

**INGESTION:** ..... **SLIGHT INGESTION:** DO NOT induce vomiting. Have conscious person drink several glasses of water or milk. Seek immediate medical attention.  
**HAZARDOUS INGESTION:** Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waist band. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

**EYE CONTACT:** ..... Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

**SKIN CONTACT:** ..... Very irritating on skin contact; may be absorbed through skin. Rinse with water for a few minutes. If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. If irritation exists, seek medical attention. Wash contaminated clothing before reusing.

# Chemplex C-41L

## SECTION VII – SPILL, STORAGE AND DISPOSAL DATA

**SPILL:** ..... **SMALL SPILL:** Mop up or absorb with dry earth, sand, or other non-combustible material.  
**LARGE SPILL:** keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT touch spilled material. Prevent entry into sewers, basements, or confined areas; dike if needed. Eliminate all sources of ignition.

**WASTE DISPOSAL:** ..... Dispose in accordance with all applicable regulations.

**HANDLING:** ..... Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. DO NOT ingest. Do not breathe gas, fumes, vapor, or spray. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container label. Avoid contact with skin and eyes. Keep away from incompatibles as oxidizing agents.

**STORAGE:** ..... Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. A refrigerated room would be preferable for materials with a flash point lower than 37.8 °C (100 °F).

## SECTION VIII – PROTECTIVE CLOTHING

**RESPIRATORY PROTECTION:** ..... Vapor respirator  
**PROTECTIVE CLOTHING/EQUIP.:** .... Splash goggles, full suit, boots, gloves.

## SECTION IX – TRANSPORTATION DATA

**PROPER SHIPPING NAME:** ..... Flammable liquid, n.o.s., (Contains Methyl Alcohol)  
**HAZARD CLASS:** ..... 3  
**UN NUMBER:** ..... 1993  
**PACKAGING GROUP:** ..... II  
**RQ:** ..... 1250 gallons (methyl alcohol)  
**DOT SHIPPING:** ..... Flammable liquid, n.o.s., (Contains Methyl Alcohol), 3, UN 1993, PG II.

# Chemplex C-41L

**SECTION X – OTHER REGULATORY INFORMATION**

TSCA STATUS: .....Listed on inventory.  
NFPA HEALTH: .....1  
NFPA FLAMMABILITY: .....3  
NFPA REACTIVITY: .....0

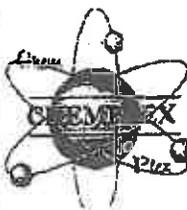
**SECTION XI - ADDITIONAL INFORMATION**

PREPARED BY: ..... Edward F. Vinson

EMERGENCY RESPONSE NUMBER: ..... **800-633-8253**

Material Safety Data Sheet

# Chemplex C-41P

	Chemplex, L.C. 506 CR 1071 Snyder, TX 79549 (325) 573-7298	DATE PREPARED:.....05/22/2002 REVISION DATE:.....01/03/2007 EMERGENCY NUMBER:..800-633-8253 PRODUCT NUMBER:..... 01718
---	---	---

## SECTION I - IDENTIFICATION

**PRODUCT NAME:** ..... Chemplex C-41P  
**CHEMICAL FAMILY:** ..... Surfactants  
**PRODUCT USE:** ..... Cement Defoamer

## SECTION II - HAZARDOUS INGREDIENTS

HAZ INGREDIENT	PERCENT	CAS NUMBER	PEL
Crystalline Silica	<0.67%	14808-60-7	
Sodium Acetate	10%	127-09-3	

## SECTION III - PHYSICAL DATA

**APPEARANCE:** ..... White powder  
**ODOR:** ..... Slight vinegar-like.  
**BOILING POINT:** ..... N/A  
**FLASHPOINT:** ..... Will not burn  
**VAPOR DENSITY (AIR=1):** ..... N/A  
**SPECIFIC GRAVITY (WATER=1):** ..... 2.7 (water=1)  
**pH (1% SOLN/WATER):** ..... Near neutral

## SECTION IV - FIRE AND EXPLOSION DATA

**FLASHPOINT:** ..... Will not burn.  
**FLAMMABLE HAZARDS:** ..... Use measures appropriate for surrounding fire

## SECTION V - REACTIVITY DATA

**STABILITY:** ..... This product is stable.

Material Safety Data Sheet

# Chemplex C-41P

**CORROSIVITY:** ..... Not corrosive.  
**REACTIVITY:** ..... Non reactive under most conditions.

## SECTION VI A - HEALTH HAZARD DATA

**ROUTE OF ENTRY:** ..... Inhalation. Ingestion. Skin Contact.  
**CHRONIC EFFECTS ON HUMANS:** ... None known beyond those for acute exposure.

## SECTION VI B - FIRST AID

**INHALATION:** ..... **SLIGHT INHALATION:** Allow the victim to rest in a well ventilated area. Seek immediate medical attention.  
**HAZARDOUS INHALATION:** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention.

**INGESTION:** ..... **SLIGHT INGESTION:** Induce vomiting by sticking finger in throat. Seek immediate medical attention.  
**HAZARDOUS INGESTION:** Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waist band. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

**EYE CONTACT:** ..... Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

**SKIN CONTACT:** ..... No known effect on skin contact. Rinse with water for a few minutes. If irritation exists, seek medical attention. Wash contaminated clothing before reusing.

## SECTION VII - SPILL, STORAGE AND DISPOSAL DATA

**SPILL:** ..... **SMALL SPILL:** Use appropriate tools to put the spilled solid in a convenient waste disposal container. Avoid creating or breathing dust.  
**LARGE SPILL:** Corrosive solid. Stop leak if without risk. Do not get water inside container. DO NOT touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements, or confined areas; dike if needed. Call for assistance on disposal.

Material Safety Data Sheet

# Chemplex C-41P

Neutralize the residue with a dilute solution of acetic acid.

**WASTE DISPOSAL:** ..... Dispose in accordance with all applicable regulations.

**HANDLING:** ..... Keep container dry. DO NOT breathe dust. Never add water to this product. Wear suitable protective clothing. if you feel unwell, seek medical attention and show the label when possible.

**STORAGE:** ..... Corrosive materials should be stored in a separate safety storage cabinet or room.

## SECTION VIII - PROTECTIVE CLOTHING

**RESPIRATORY PROTECTION:** ..... Vapor respirator

**PROTECTIVE CLOTHING/EQUIP.:** ..... Splash goggles, full suit, boots, gloves

## SECTION IX - TRANSPORTATION DATA

**PROPER SHIPPING NAME:** ..... Not DOT Regulated

**HAZARD CLASS:** ..... N/A

**UN NUMBER:** ..... N/A

**PACKAGING GROUP:** ..... N/A

**RQ:** ..... N/A

**DOT SHIPPING:** ..... Not DOT Regulated

## SECTION X - OTHER REGULATORY INFORMATION

**TSCA STATUS:** ..... Listed on inventory.

**NFPA HEALTH:** ..... 1

**NFPA FLAMMABILITY:** ..... 0

**NFPA REACTIVITY:** ..... 0

## SECTION XI - ADDITIONAL INFORMATION

**PREPARED BY:** ..... Edward F. Vinson

**EMERGENCY RESPONSE NUMBER:** ..... 800-633-8253

# Chemplex C-45

	<p>Chemplex, Ltd. 506 CR 1071 Snyder, TX 79549 (325) 573-7298</p>	<p>DATE PREPARED:.....04/10/2002 REVISION DATE:.....11/01/2007 EMERGENCY NUMBER:....<b>800-633-8253</b> PRODUCT NUMBER:..... 01721</p>
---	---	--

## SECTION I – IDENTIFICATION

**PRODUCT NAME:** ..... Chemplex C-45  
**CHEMICAL FAMILY:** ..... Silicic acid, alkali salt  
**PRODUCT USE:** ..... Cement Additive



## SECTION II – HAZARDOUS INGREDIENTS

<i><b>HAZ INGREDIENT</b></i>	<i><b>PERCENT</b></i>	<i><b>CAS NUMBER</b></i>	<i><b>PEL</b></i>
SODIUM METASILICATE	100%	6834-92-0	

## SECTION III – PHYSICAL DATA

**APPEARANCE:** ..... White solid.  
**ODOR:** ..... Odorless.  
**MELTING POINT:** ..... 1089°C  
**FLASHPOINT:** ..... N/A  
**VAPOR DENSITY (AIR=1):** ..... N/A  
**SPECIFIC GRAVITY (WATER=1):** ..... 2.4 (water=1)  
**pH (1% SOLN/WATER):** ..... Basic

## SECTION IV – FIRE AND EXPLOSION DATA

**FLASHPOINT:** ..... N/A  
**FLAMMABLE HAZARDS:** ..... N/A

## SECTION V – REACTIVITY DATA

**STABILITY:** ..... This product is stable.  
**CORROSIVITY:** ..... N/A  
**REACTIVITY:** ..... N/A

# Chemplex C-45

## SECTION VI A - HEALTH HAZARD DATA

ROUTE OF ENTRY: ..... Inhalation Ingestion. Eye Contact.  
CHRONIC EFFECTS ON HUMANS: ... None known beyond those for acute exposure.

## SECTION VI B - FIRST AID

**INHALATION:** ..... **SLIGHT INHALATION:** Allow the victim to rest in a well ventilated area. Seek immediate medical attention.  
**HAZARDOUS INHALATION:** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention.

**INGESTION:** ..... **SLIGHT INGESTION:** Do not induce vomiting. Have conscious person drink several glasses of water or milk. Seek immediate medical attention.

**EYE CONTACT:** ..... Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Seek medical attention.

**SKIN CONTACT:** ..... If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victims exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. **COLD** water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

## SECTION VII - SPILL, STORAGE AND DISPOSAL DATA

**SPILL:** ..... **SMALL SPILL:** Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.  
**LARGE SPILL:** Corrosive solid. Poisonous solid. Stop leak if without risk. **DO NOT** get water inside container. **DO NOT** touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements, or confined areas; dike if needed. Call for assistance on disposal. Neutralize with a dilute solution of acetic acid.

# Chemplex C-45

**WASTE DISPOSAL:** .....Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use, or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state, and local requirements.

**HANDLING:** .....Keep locked up. Keep container dry. DO NOT ingest. DO NOT breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical attention immediately and show the container or label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, organic materials, metals, acids, and moisture.

**STORAGE:** .....Alkalis may be stored in heavy duty gauge steel containers. Corrosive materials should be stored in a separate safety storage cabinet of room.

## SECTION VIII – PROTECTIVE CLOTHING

**RESPIRATORY PROTECTION:** ..... Vapor respirator.  
**PROTECTIVE CLOTHING/EQUIPMENT:** .....Apron, goggles and gloves.

## SECTION IX – TRANSPORTATION DATA

**PROPER SHIPPING NAME:** .....Corrosive solid, basic, inorganic, n.o.s., (Contains silicic acid and disodium salt)

**HAZARD CLASS:** .....8

**UN NUMBER:** .....3262

**PACKAGING GROUP:** ..... II

**RQ:** ..... none

**DOT SHIPPING:** ..... Corrosive solid, basic, inorganic, n.o.s., (Contains silicic acid and disodium salt), 8, UN 3262, PG II

## SECTION X – OTHER REGULATORY INFORMATION

**TSCA STATUS:** .....Listed on inventory.

**NFPA HEALTH:** .....3

**NFPA FLAMMABILITY:** ..... 0

**NFPA REACTIVITY:** .....1

## SECTION XI - ADDITIONAL INFORMATION

**PREPARED BY:** ..... Edward F. Vinson

**EMERGENCY RESPONSE NUMBER:** ..... **800-633-8253**

# Chemplex C-51



Chemplex, L.C.  
506 CR 1071  
Snyder, TX 79549  
(325) 573-7298

DATE PREPARED:.....01/12/1999  
REVISION DATE:.....11/09/2006  
EMERGENCY NUMBER:...**800-633-8253**  
PRODUCT NUMBER:..... 01723

## SECTION I – IDENTIFICATION

PRODUCT NAME: ..... Chemplex C-51  
CHEMICAL FAMILY: ..... Cellulose gum.  
PRODUCT USE: .....Petrochemical industry. Cement additive.

## SECTION II – HAZARDOUS INGREDIENTS

<i>HAZ INGREDIENT</i>	<i>PERCENT</i>	<i>CAS NUMBER</i>	<i>PEL</i>
No hazardous ingredient.			

## SECTION III – PHYSICAL DATA

APPEARANCE: ..... Cream. off white powder  
ODOR: ..... Mild, slight.  
BOILING POINT: ..... Not available.  
FLASHPOINT: ..... Not available.  
VAPOR DENSITY (AIR=1): ..... Not available.  
SPECIFIC GRAVITY (WATER=1): ..... 1.4 (water=1)  
pH (1% SOLN/WATER):.....8

## SECTION IV – FIRE AND EXPLOSION DATA

FLASHPOINT: ..... Not available.  
FLAMMABLE HAZARDS: ..... Use measures appropriate for surrounding fire

# Chemplex C-51

## SECTION V – REACTIVITY DATA

**STABILITY:** ..... This product is stable.  
**CORROSIVITY:** .....Not available.  
**REACTIVITY:** .....Not available.

## SECTION VI A - HEALTH HAZARD DATA

**ROUTE OF ENTRY:** ..... Ingestion.  
**CHRONIC EFFECTS ON HUMANS:** ... Not available.

## SECTION VI B - FIRST AID

**INHALATION:** .....  
***SLIGHT INHALATION:*** May cause irritation of nose and throat. May cause cough and chest discomfort. Allow the victim to rest in a well ventilated area. Seek immediate medical attention.  
***HAZARDOUS INHALATION:*** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention.

**INGESTION:** .....  
***SLIGHT INGESTION:*** Do not induce vomiting. Have conscious person drink several glasses of water or milk. Seek immediate medical attention.  
***HAZARDOUS INGESTION: DO NOT INDUCE VOMITING*** Have conscious person drink several glasses of water or milk. Seek medical attention.

**EYE CONTACT:** ..... Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

**SKIN CONTACT:** ..... May cause temporary reddening. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

## SECTION VII – SPILL, STORAGE AND DISPOSAL DATA

**SPILL:** ..... ***SMALL SPILL:*** Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local regional authority requirements. Use caution, as wet product will

# Chemplex C-51

be extremely slippery.

**LARGE SPILL:** Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

**WASTE DISPOSAL:** .....Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state, and local regulations.

**HANDLING:** .....Keep container dry. DO NOT breathe dust. Never add water to this product. Wear suitable protective clothing. If you feel unwell, seek medical attention and show the label when possible.

**STORAGE:** .....Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

## SECTION VIII – PROTECTIVE CLOTHING

**RESPIRATORY PROTECTION:** ..... A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**PROTECTIVE CLOTHING/EQUIP:** .....Splash goggles, full suit, dust respirator, boots, gloves.

## SECTION IX – TRANSPORTATION DATA

**PROPER SHIPPING NAME:** .....Not DOT regulated.

**HAZARD CLASS:** .....N/A

**UN NUMBER:** .....N/A

**PACKAGING GROUP:** ..... N/A

**RQ:** ..... N/A

**DOT SHIPPING:** .....Not DOT regulated.

## SECTION X – OTHER REGULATORY INFORMATION

**TSCA STATUS:** .....Listed on inventory.

**NFPA HEALTH:** .....0

**NFPA FLAMMABILITY:** ..... 1

**NFPA REACTIVITY:** .....0

# Chemplex C-51

**SECTION XI - ADDITIONAL INFORMATION**

**PREPARED BY:** ..... Edward F. Vinson

**EMERGENCY RESPONSE NUMBER:** ..... **800-633-8253**

# C-63

	Chemplex, Ltd. 506 CR 1071 Snyder, TX 79549 (325) 573-7298	DATE PREPARED:.....07/28/2006 REVISION DATE:.....07/28/2006 EMERGENCY NUMBER:.... <b>800-633-8253</b> PRODUCT NUMBER:..... 01726
---	---	---

## SECTION I – IDENTIFICATION

**PRODUCT NAME:** .....C-63  
**CHEMICAL FAMILY:** .....Blend of organic and inorganic gelling agents.  
**PRODUCT USE:** .....Spacer mix for oil well cementing

## SECTION II – HAZARDOUS INGREDIENTS

<b>HAZ INGREDIENT</b>	<b>PERCENT</b>	<b>CAS NUMBER</b>	<b>PEL</b>
Crystalline Silica	< 0.5 %	14808-60-7	

## SECTION III – PHYSICAL DATA

**APPEARANCE:** ..... Off-white powder  
**ODOR:** ..... None  
**BOILING POINT:** ..... None  
**FLASHPOINT:** ..... None  
**VAPOR DENSITY (AIR=1):** .....N/A  
**SPECIFIC GRAVITY (WATER=1):** .....2.17 (water=1)  
**pH (1% SOLN/WATER):**.....5

## SECTION IV – FIRE AND EXPLOSION DATA

**FLASHPOINT:** .....Not flammable  
**FLAMMABLE HAZARDS:** .....Use measures appropriate for surrounding fire

## SECTION V – REACTIVITY DATA

**STABILITY:** .....This product is stable.  
**CORROSIVITY:** ..... Not corrosive  
**REACTIVITY:** .....Non-reactive with common materials.

# C-63

**SECTION VI A - HEALTH HAZARD DATA**

ROUTE OF ENTRY: ..... Ingestion, inhalation.  
CHRONIC EFFECTS ON HUMANS: ... None known beyond those for acute exposure.

**SECTION VI B - FIRST AID**

**INHALATION:** ..... **SLIGHT INHALATION:** Allow the victim to rest in a well ventilated area. Seek immediate medical attention.  
**HAZARDOUS INHALATION:** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Long term inhalation of silica dust may lead to silicosis or other respiratory diseases. Seek medical attention.

**INGESTION:** ..... **SLIGHT INGESTION:** Do not induce vomiting. Have conscious person drink several glasses of water or milk. Seek immediate medical attention.  
**HAZARDOUS INGESTION:** **INDUCE VOMITING** by sticking finger in throat. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waist band. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

**EYE CONTACT:** ..... Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

**SKIN CONTACT:** ..... If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victims exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. **COLD** water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

# C-63

**SECTION VII – SPILL, STORAGE AND DISPOSAL DATA**

**SPILL:** ..... **SMALL SPILL:** Use appropriate tools to put the spilled solid in a convenient waste disposal container. Avoid creating or breathing dust.  
**LARGE SPILL:** As for small spill. Water will make product very slippery.

**WASTE DISPOSAL:** .....Dispose in accordance with all applicable regulations.

**HANDLING:** .....Keep container dry. DO NOT breathe dust. Never add water to this product. Wear suitable protective clothing. If you feel unwell, seek medical attention and show the label when possible.

**STORAGE:** ..... Keep away from moisture.

**SECTION VIII – PROTECTIVE CLOTHING**

**RESPIRATORY PROTECTION:** ..... Dust respirator  
**PROTECTIVE CLOTHING/EQUIP.:** .....Goggles

**SECTION IX – TRANSPORTATION DATA**

**PROPER SHIPPING NAME:** ..... Not DOT Regulated  
**HAZARD CLASS:** ..... N/A  
**UN NUMBER:** ..... N/A  
**PACKAGING GROUP:** ..... N/A  
**RQ:** ..... N/A  
**DOT SHIPPING:** .....Not DOT Regulated

**SECTION X – OTHER REGULATORY INFORMATION**

**TSCA STATUS:** .....Listed on inventory.  
**NFPA HEALTH:** .....1  
**NFPA FLAMMABILITY:** ..... 0  
**NFPA REACTIVITY:** .....0

**SECTION XI - ADDITIONAL INFORMATION**

**PREPARED BY:** ..... Edward F. Vinson  
**EMERGENCY RESPONSE NUMBER:** ..... **800-633-3253**

# Material Safety Data Sheet

This document has been prepared to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200

45 N.E. Loop 410, Suite 700  
San Antonio, Texas 78216  
Phone: (210) 349-4069  
FAX: (210) 349-8512  
E-mail: [info@BORAL.com](mailto:info@BORAL.com)

**Boral  
Material  
Technologies**



Classification: Calcium Aluminum Silicate

IDENTITY: (As used on label and list)  
Boral Class F Fly Ash

Emergency Telephone Number:  
1 (800) 424-9300 (CHEMTREC)

## SECTION I – Identity Information

Chemical Name: Fly Ash	Telephone Number for information: (210) 349-4069
Chemical Family: Coal Ash	Date Prepared: 15-Feb-93
CAS #: 68131-74-8	Date Revised: 21-September-07

## SECTION II – Product Composition & Information on Ingredients

Ingredients	CAS#	% Weight	Exposure Limits	
			OSHA PEL mg/m <sup>3</sup>	ACGIH TLV mg/m <sup>3</sup>
Calcium Aluminate Silicates	Various	>80%	15	10
Crystalline Silica	14808-60-7	Varies	[10/(%SiO <sub>2</sub> +2)] (R) [30/(%SiO <sub>2</sub> +2)] (T)	0.05
Iron Compounds	Various	Varies	Not Available	Not Available

The above chemistries are provided for industrial hygiene and environmental purposes and are not intended to represent product specifications. Composition is variable depending on coal source and power plant characteristics. This data has been compiled from data believed to be reliable. Elements such as aluminum, arsenic, boron, calcium, chromium, cobalt, copper, gold, lead, molybdenum, nickel, silver, tin, titanium, vanadium, and zirconium may be present in trace amounts.

## SECTION III – Physical/Chemical Characteristics

Boiling Point (°F) Not Applicable	Specific Gravity (H <sub>2</sub> O=1) Not Applicable	NFPA Health 1 NFPA Flammability 0 NFPA Reactivity 0 NFPA Special:
Vapor Pressure (mm Hg.) Not Applicable	Percent Volatile by Mass (%) Not Applicable	
Vapor Density (AIR=1) Not Applicable	Evaporation Rate (Butyl Acetate=1) Not Applicable	
Solubility in Water Not Applicable	pH 4-12 (1%w/w)	

Appearance and Odor  
Grayish powder, odorless

## SECTION IV – Fire and Explosion Hazard Data

Flash Point Not Applicable	LEL Not Applicable	UEL Not Applicable
Extinguishing Media Not Applicable		
Special Fire Fighting Procedures Not Applicable		
Unusual Fire and Explosion Hazards Not Applicable		

## SECTION V – Reactivity Data

Materials as shipped are not reactive

## SECTION VI – Health Hazard Data

**ACUTE EFFECTS OF OVEREXPOSURE:**

**Eye:** May cause irritation by abrasion with dust.

**Skin:** Dust may cause irritation in hypersensitive individuals.

**Inhalation:** Dust may cause congestion and irritation in nasal and respiratory passages.

**Ingestion:** No known acute effects.

**CHRONIC EFFECTS OF OVEREXPOSURE:**

Excessive exposures to respirable particulate (dust) over an extended period of time may result in the development of pulmonary diseases such as silicosis.

**CARCINOGENICITY:**

The following carcinogenicity classifications for crystalline silica have been established by the following agencies:

**OSHA:** Not regulated as a carcinogen

**IARC:** Group 1 carcinogenic in humans

**NIOSH:** Carcinogen, with no further categorization

**NTP:** Known Carcinogen

Material may contain crystalline silica, a chemical that has been determined by the agencies listed above to cause cancer and other chemicals known to cause cancer, birth defects and other reproductive harm. Inhalation of dust above established or recommended exposure levels should be avoided by use of proper ventilation and/or use of NIOSH approved respirator

**SECTION V II – Precautions for Safe Handling**

**VENTILATION:** Provide adequate ventilation to maintain exposures below the OSHA PEL and ACGIH TLV for crystalline silica and other substances.

**RESPIRATORY PROTECTION:** None required under PEL. IF PEL is exceeded, use a NIOSH approved half or full-face air purifying respirator with high efficiency particulate air filters.

**PROTECTIVE GLOVES:** Work gloves as needed

**EYE PROTECTION:** Recommend Safety goggles or safety glasses. Eye wash stations should be readily accessible.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** As Needed

**Steps to be taken in case Material is Released or Spilled:**

Clean up for use or disposal. Dampen with water mist to control dust (airborne dust) before removal. Do not use compressed air. If loaded on trucks, wet down material to prevent dusting during transport. Observe local, state, and federal regulations pertinent to reporting requirements.

**Waste Disposal Method:**

Dispose of in landfill or coal ash disposal pond. Observe local, state and federal regulations. This material is not RCRA hazardous waste.

**Precautions to Be Taken in Handling and Storing:**

Store in dry conditions. Minimize dust. Avoid creating dust.

**SECTION VIII – First Aid and Medical**

**Skin:** Wash with soap and water. If an allergic reaction causes a rash that does not heal within a few days, consult a physician.

**Eyes:** Flush with running water. Obtain medical assistance if irritation continues.

**Ingestion:** Do not induce vomiting. See a physician.

**Inhalation:** Remove from exposure to airborne particulates.

**Medical Conditions Aggravated by Exposure:**

Excessive dust exposure may aggravate any existing respiratory disorders or diseases. Possible complications or allergies resulting in irritation to skin, eyes, and respiratory tract may occur from excessive exposure to dusts.

**Section IX – Other Regulations**

<b>RCRA:</b> This material is not an RCRA hazardous waste.
<b>EPCRA Section 311/312:</b> Material as shipped is subject to Section 311/312 reporting.
<b>EPCRA Section 313:</b> Material as shipped is not subject to Section 313, Toxic Chemical Release Inventory reporting requirements.
<b>DOT:</b> Material as shipped is not a hazardous material as per DOT regulations.
<b>UN/NA Code:</b> None
<b>Placard Required:</b> None
<b>Labeling Requirement:</b> None
The information and recommendations set forth herein are based on data we have in our possession and we have reason to believe is accurate. It is, however, the user's responsibility to determine the safety, toxicity, and suitability for his/her own use of the herein described product. Because the actions by others is beyond our control, Boral Material Technologies Inc. makes no warranty expressed or implied regarding accuracy of the data or the results to be obtained from the use thereof.

# MATERIAL SAFETY DATA SHEET

Product Name: ANCO GEL PREMIUM

Anchor Drilling Fluids USA, Inc.  
2431 E 61<sup>ST</sup> Street, Suite 710 Tulsa, OK 74136

Run Date: 12/22/94

Rev. Date: 5/1/06

## I. GENERAL INFORMATION

Chemical Name: SODIUM MONTMORILLONITE CAS#: 14808-60-7  
Chemical Family: WYOMING BENTONITE  
Chemical Formula:  
Synonyms: GEL  
NFPA Properties: Health: NDA Flammability: NDA Reactivity: NDA  
Emergency Telephone: CHEMTREC (800) 424-9300 Information Telephone: (918) 583-7701

## II. HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

Hazardous Components	TWAPPM	TWA MG/M <sup>3</sup>	STEL PPM	STEL MG/M <sup>3</sup>	CAS#	OTHER LIMITS	%
1. N/A							

## III. PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point °F:	N/A	Color:	GRAY-WHITE
Specific Gravity:	2.35-2.5	Odor:	EARTHY
Vapor Pressure:	N/A	Appearance:	POWDER
Percent Volatility:	N/A	pH:	
Vapor Density:	N/A	Viscosity:	NDA
Evaporation Rate:	N/A	Activity:	N/A
Solubility in Water:	INSOLUBLE	LC50:	NDA
Melting Point °F:	1450C	LD50:	NDA

## IV. FIRE & EXPLOSION HAZARD DATA

Extinguishing Agents: DRYCHEMICAL OR WATERSPRAY OR WATERFOG OR CO2 OR FOAM OR SAND & EARTH

Flash Point °F: N/A

Flammable Limits: N/A

LEL: N/A UEL: N/A

Special Firefighting Procedures: FIREFIGHTERS SHOULD WEAR NORMAL PROTECTIVE EQUIPMENT INCLUDING A SELF-CONTAINED BREATHING APPARATUS.

Unusual Fire & Explosion Hazards:

# MATERIAL SAFETY DATA SHEET

Product Name: ANCO GEL PREMIUM

Anchor Drilling Fluids USA, Inc.  
2431 E 61<sup>ST</sup> Street, Suite 710 Tulsa, OK 74136

Run Date: 12/22/94

Rev. Date: 5/1/06

## V. HEALTH HAZARD DATA

Routes of Entry:    Inhalation – YES                      Skin – YES                      Ingestion – YES  
Effects of Overexposure:    NONE  
Toxicological Properties:    NDA  
Chronic & Acute Effects of Overexposure:  
Carcinogenicity:    NTP – NO                      IARC Monographs – NO                      OSHA Regulated

### Emergency First Aid Procedures:

- Eyes:            FLUSH WITH PLENTY OF WATER. IF IRRITATION DEVELOPS, CALL A PHYSICIAN.
- Skin Contact:    ORDINARY MEASURES OF PERSONAL HYGIENE SHOULD BE ADEQUATE
- Inhalation:      SYMPTOMATIC TREATMENT.
- Ingestion:       CONSULT A PHYSICIAN. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

## VI. REACTIVITY DATA

Stability:            STABLE                      Hazardous Polymerization:    WILL NOT OCCUR  
Hazardous Decomposition Products: SMOKE, FUMES, CARBON MONOXIDE, CARBON DIOXIDE  
Conditions To Avoid:  
Incompatibility and Materials to Avoid:

## VII. PRECAUTIONS FOR SAFE HANDLING AND USE

<u>Steps To Be Taken In Case Material Is Released Or Spilled – Procedures For Clean-Up:</u>	SWEEP SPILL MATERIAL AND REPACKAGE.
<u>Waste Disposal Method:</u>	INCINERATE IN ACCORDANCE TO LOCAL, STATE AND FEDERAL REGULATIONS
<u>Precautions To Be Taken In Handling &amp; Storage:</u>	NONE.

## VIII. CONTROL MEASURES

Ventilation Type Required:            LOCAL EXHAUST  
Protective Gloves:                      RECOMMENDED  
Eye Protection:                          SAFETY GOGGLES  
Respiratory Protection:                WEAR A NIOSH APPROVED MASK IF CONCENTRATION IS TO EXCEED TLV  
Other Protective Equipment:  
Comments:

# MATERIAL SAFETY DATA SHEET

Product Name: ANCO GEL PREMIUM

Anchor Drilling Fluids USA, Inc.  
2431 E 61<sup>ST</sup> Street, Suite 710 Tulsa, OK 74136

Run Date: 12/22/94

Rev. Date: 5/1/06

---

## IX. REGULATORY & TRANSPORTATION INFORMATION

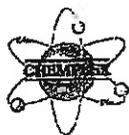
---

US DOT Proper Shipping Name:	"OIL-WELL TREATING COMPOUND"	
US DOT Hazard Class:		DOT ID Number: NOT REGULATED
ID Number:		Freight Classification:
Unregulated by DOT:		Regulated by DOT:
Special Transportation Note:		
Labels Required:		

---

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, expressed or implied, and we assume no responsibility for any damage or expense.

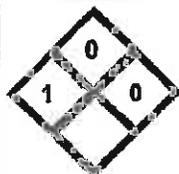
---



# MATERIAL SAFETY DATA SHEET

KCl (Potassium Chloride)

**NFPA**



## 1. Product And Company Identification

**Supplier**

Chemplex, L.C.  
P.O. Box 1071  
506 CR 137  
Snyder, TX 79550 United States

Telephone Number: 915-573-7298  
FAX Number: (915) 573-3340

**Manufacturer**

Chemplex, L.C.  
P.O. Box 1071  
506 CR 137  
Snyder, TX 79550 United States

Telephone Number: 915-573-7298  
FAX Number: (915) 573-3340

**Supplier Emergency Contacts & Phone Number**  
(800) 633-8253

**Manufacturer Emergency Contacts & Phone Number**  
(800) 633-8253

Issue Date: 06/14/2002

Product Name: KCl (Potassium Chloride)

CAS Number: 7447-40-7

Chemical Formula: KCl

MSDS Number: 79

Product Code: ATR01076

**Product/Material Uses**

Not available.

## 2. Composition/Information On Ingredients

Ingredient Name	CAS Number	Percent Of Total Weight
NO HAZARDOUS INGREDIENT	Not Establish	

## 3. Hazards Identification

**Primary Route(s) Of Entry**

Ingestion

## 4. First Aid Measures

**Eye**

IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used.

**Skin**

No known EFFECT on skin contact, rinse with water for a few minutes.



# MATERIAL SAFETY DATA SHEET

## KCl (Potassium Chloride)

### 4. First Aid Measures - Continued

#### Ingestion

**Slight Ingestion:** Remove dentures if any. Watch for any obstruction in the victim's mouth. Remove if possible what is causing the obstruction but do not force fingers or a hard object between the victim's teeth. Have conscious person drink several glasses of water for milk. **INDUCE VOMITING** by sticking finger in throat. Seek medical attention.

**Hazardous Ingestion:** Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Remove dentures if any. Watch for an obstruction in the victim's mouth. Remove if possible what is causing the obstruction but do not force fingers or a hard object between the victim's teeth. If a soft pad can be inserted between the victim's teeth, it will protect the tongue from being bitten. A badly bleeding tongue immensely complicates the patient's problems. Have conscious person drink several glasses of water or milk. **INDUCE VOMITING** by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. If convulsions occur, do not restrain the victim, but do remove objects with which he (she) might injure himself (herself) or orient the victim to prevent him (her) from striking fixed heavy objects. If the convulsions cease, turn the victim on the side or face down so that any fluid in the mouth will drain. Seek immediate medical attention.

#### Inhalation

**Slight Inhalation:** Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

**Hazardous Inhalation:** Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waist band. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention.

### 5. Fire Fighting Measures

#### Extinguishing Media

Not flammable. Use media appropriate for surrounding fire.

### 6. Accidental Release Measures

**Small Spill and Leak:** Use appropriate tools to put the spilled solid in a convenient waste disposal container.

**Large Spill and Leak:** Poisonous solid. Stop leak if without risk. **DO NOT** get water inside container. **DO NOT** touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal.

### 7. Handling And Storage

#### Handling Precautions

Keep locked up. **DO NOT** ingest. **DO NOT** breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label.

#### Storage Precautions

Keep container dry. Keep in a cool, well-ventilated place. Highly toxic or infectious materials should be stored in a separate locked safety storage cabinet or room.

#### Protective Clothing (Pictograms)





# MATERIAL SAFETY DATA SHEET

KCl (Potassium Chloride)

## 8. Exposure Controls/Personal Protection

### Eye/Face Protection

Safety glasses

### Skin Protection

Apron

### Respiratory Protection

Dust mask

## 9. Physical And Chemical Properties

### Appearance

Not available.

### Odor

Not Available.

**Chemical Type:** Mixture

**Physical State:** Solid

**Melting Point:** 1424.3 °F 773.5 °C

**Boiling Point:** 2571.8 °F 1411 °C

**Specific Gravity:** 1.987 (Water=1)

**Molecular Weight:** 74.55 g/mole

**pH Factor:** 6 At a Concentration Of (1% soln/water)

**Solubility:** Water

## 10. Stability And Reactivity

**Stability:** This product is stable.

### Incompatible Materials

No specific information is available in our database.

## 11. Toxicological Information

### Acute Studies

No specific information is available in our database regarding the toxic effects of this material for humans.

## 12. Ecological Information

No Data Available...

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

### Proper Shipping Name

Not DOT Regulated



# MATERIAL SAFETY DATA SHEET

KCl (Potassium Chloride)

## 15. Regulatory Information

### U.S. Regulatory Information

Not DOT Regulated  
All components of this product are listed in the TSCA inventory.

## 16. Other Information

### NFPA Rating

Health: 1

Fire: 0

Reactivity: 0

### Revision/Preparer Information

MSDS Preparer: Dr. Edward F. Vinson

MSDS Preparer Phone Number: 915-573-7298

### Disclaimer

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purposes(s).

Chemplex, L.C.

Printed Using MSDS Generator™ 2000

### MATERIAL SAFETY DATA SHEET

#### SECTION I

PRODUCT NAME:	Kol-Seal	SIZE:	-6 Mesh
CHEMICAL NAME:	Ground Coal		
FORMULA:	N/A		
MANUFACTURER:	WelDril Products, Inc.		
ADDRESS:	Box 2673, Muskogee, OK 74402		
FOR INFORMATION ON HEALTH HAZARDS, CALL: 918-686-8585			
FOR OTHER INFORMATION, CALL:	918-686-8585	INFORMATION EFFECTIVE AS OF:	12/17/1997

#### SECTION II HAZARDOUS INGREDIENTS OF MIXTURES

PRINCIPAL HAZARDOUS COMPONENT(S)	%	TLV (Units)
N.A.		

#### SECTION III PHYSICAL DATA

BOILING POINT (°F.)	N.A.	SPECIFIC GRAVITY (H <sub>2</sub> O - 1)	1.3
VAPOR PRESSURE (mm Hg.)	N.A.	PERCENT VOLATILE BY VOLUME (%)	N.A.
VAPOR DENSITY (AIR-1)	N.A.	EVAPORATION RATE	N.A.
SOLUBILITY IN WATER	Insoluble		
APPEARANCE AND ODOR	Black granular and powder		

#### SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method Used)	200 degrees F. Tag Closed Cup	FLAMMABLE LIMITS AVAILABLE	LeI	UeI
			N.A.	N.A.
SPECIAL FIRE FIGHTING PROCEDURES:	Wear self-contained breathing apparatus in closed area.			
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None - Stable			

### SECTION V

<b>THRESHOLD LIMIT VALUE</b>	PEL 2.4 mg/m <sup>3</sup> TLV 2 mg/m <sup>3</sup>
<b>EFFECTS OF OVEREXPOSURE</b>	Prolonged and repeated inhalation of <b>dust</b> in excess of TLV may result in lung injury.
<b>EMERGENCY AND FIRST AID PROCEDURES</b>	EYES - Wash with water for five minutes SKIN - Contact will cause no more than slight irritation. Wash off in water or shower. INGESTION - Low in toxicity

### SECTION VI

<b>STABILITY</b>	<b>UNSTABLE</b>		<b>CONDITIONS TO AVOID:</b> Material is flammable.
	<b>STABLE</b>	X	
<b>INCOMPATIBILITY (Materials to Avoid)</b>	Strong oxidizers		
<b>HAZARDOUS DECOMPOSITION PRODUCTS</b>	Oxides, nitrogen, carbon monoxide, carbon dioxide		
<b>HAZARDOUS POLYMERIZATION</b>		<b>CONDITIONS TO AVOID:</b> N.A.	
<b>May Occur</b>	<b>Will Not Occur</b>		
	X		

### SECTION VII SPILL OR LEAK PROCEDURES

<b>STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED</b>	Sweep up and dispose
<b>WASTE DISPOSAL METHOD</b>	In accordance with state, local and federal regulations

### SECTION VIII SPECIAL PROTECTION INFORMATION

<b>RESPIRATORY PROTECTION (Specify type)</b>	Prolonged exposure to dust concentrations in excess of TLV requires use of NIOSH dust mask.	
<b>VENTILATION:</b>	<b>LOCAL EXHAUST:</b> X	<b>SPECIAL</b>
	<b>MECHANICAL (general)</b>	<b>OTHER</b>
<b>PROTECTIVE GLOVES:</b> N.A.	<b>EYE PROTECTION:</b> Safety Glasses	
<b>OTHER PROTECTIVE EQUIPMENT:</b> N.A.		

### SECTION IX SPECIAL PRECAUTIONS

<b>PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:</b>	Store away from heat and flames
<b>OTHER PRECAUTIONS:</b>	<ol style="list-style-type: none"> <li>1. Combustible when exposed to flame or temp. in excess of 260° F.</li> <li>2. Susceptible to spontaneous combustion.</li> <li>3. Highly combustible and/or explosive when in dust or powder form. Normal fire procedures are to be followed.</li> </ol>

*The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness.*

APPROVED BY U.S. DEPARTMENT OF LABOR  
 "ESSENTIALLY SIMILAR" TO FORM OSHA-20

**MATERIAL SAFETY DATA SHEET**

**SECTION I**

PRODUCT NAME:	Kol-Seal	SIZE:	-6 Mesh
CHEMICAL NAME:	Ground Ccal		
FORMULA:	N/A		
MANUFACTURER:	WelDrii Products, Inc.		
ADDRESS:	Box 2673, Muskogee, OK 74402		
FOR INFORMATION ON HEALTH HAZARDS, CALL: 918-686-8585			
FOR OTHER INFORMATION, CALL:	918-686-8585	INFORMATION EFFECTIVE AS OF:	12/17/1997

**SECTION II HAZARDOUS INGREDIENTS OF MIXTURES**

PRINCIPAL HAZARDOUS COMPONENT(S)	%	TLV (Units)
N.A.		

**SECTION III PHYSICAL DATA**

BOILING POINT (°F.)	N.A.	SPECIFIC GRAVITY (H <sub>2</sub> O - 1)	1.3
VAPOR PRESSURE (mm Hg.)	N.A.	PERCENT VOLATILE BY VOLUME (%)	N.A.
VAPOR DENSITY (AIR-1)	N.A.	EVAPORATION RATE	N.A.
SOLUBILITY IN WATER	Insoluble		
APPEARANCE AND ODOR	Black granular and powder		

**SECTION IV FIRE AND EXPLOSION HAZARD DATA**

FLASH POINT (Method Used)	200 degrees F. Tag Closed Cup	FLAMMABLE LIMITS AVAILABLE	Lel	Uel
			N.A.	N.A.
SPECIAL FIRE FIGHTING PROCEDURES:	Wear self-contained breathing apparatus in closed area.			
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None - Stable			

### SECTION V

<b>THRESHOLD LIMIT VALUE</b>	PEL 2.4 mg/m <sup>3</sup> TLV 2 mg/m <sup>3</sup>
<b>EFFECTS OF OVEREXPOSURE</b>	Prolonged and repeated inhalation of dust in excess of TLV may result in lung injury.
<b>EMERGENCY AND FIRST AID PROCEDURES</b>	EYES - Wash with water for five minutes SKIN - Contact will cause no more than slight irritation. Wash off in water or shower. INGESTION - Low in toxicity

### SECTION VI

<b>STABILITY</b>	<b>UNSTABLE</b>		<b>CONDITIONS TO AVOID:</b> Material is flammable.
	<b>STABLE</b>	X	
<b>INCOMPATIBILITY (Materials to Avoid)</b>	Strong oxidizers		
<b>HAZARDOUS DECOMPOSITION PRODUCTS</b>	Oxides, nitrogen, carbon monoxide, carbon dioxide		
<b>HAZARDOUS POLYMERIZATION</b>		<b>CONDITIONS TO AVOID:</b> N.A.	
<b>May Occur</b>	<b>Will Not Occur</b>		
	X		

### SECTION VII SPILL OR LEAK PROCEDURES

<b>STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED</b>	Sweep up and dispose
<b>WASTE DISPOSAL METHOD</b>	In accordance with state, local and federal regulations

### SECTION VIII SPECIAL PROTECTION INFORMATION

<b>RESPIRATORY PROTECTION (Specify type)</b>	Prolonged exposure to dust concentrations in excess of TLV requires use of NIOSH dust mask.	
<b>VENTILATION:</b>	<b>LOCAL EXHAUST:</b> X	<b>SPECIAL</b>
	<b>MECHANICAL (general)</b>	<b>OTHER</b>
<b>PROTECTIVE GLOVES:</b> N.A.	<b>EYE PROTECTION:</b> Safety Glasses	
<b>OTHER PROTECTIVE EQUIPMENT:</b> N.A.		

### SECTION IX SPECIAL PRECAUTIONS

<b>PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:</b>	Store away from heat and flames
<b>OTHER PRECAUTIONS:</b>	<ol style="list-style-type: none"> <li>1. Combustible when exposed to flame or temp. in excess of 260° F.</li> <li>2. Susceptible to spontaneous combustion.</li> <li>3. Highly combustible and/or explosive when in dust or powder form. Normal fire procedures are to be followed.</li> </ol>

*The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness.*

**MATERIAL SAFETY DATA SHEET**

**SECTION I**

<b>PRODUCT NAME:</b>	Pol-E-Flake	<b>SIZE:</b>	3/8" Cut
<b>CHEMICAL NAME:</b>	Polyester		
<b>FORMULA:</b>	N/A		
<b>MANUFACTURER:</b>	WeiDril Products, Inc.		
<b>ADDRESS:</b>	Box 2673, Muskogee, OK 74402		
<b>FOR INFORMATION ON HEALTH HAZARDS, CALL:</b> 918-686-8585			
<b>FOR OTHER INFORMATION, CALL:</b>	918-686-8585	<b>INFORMATION EFFECTIVE AS OF:</b>	09/12/2000

**SECTION II HAZARDOUS INGREDIENTS OF MIXTURES**

PRINCIPAL HAZARDOUS COMPONENT(S)	%	TLV (Units)
N.A.		

**SECTION III PHYSICAL DATA**

<b>BOILING POINT (°F.)</b>	N.A.	<b>SPECIFIC GRAVITY (H<sub>2</sub>O - 1)</b>	N.A.
<b>VAPOR PRESSURE (mm Hg.)</b>	N.A.	<b>PERCENT VOLATILE BY VOLUME (%)</b>	N.A.
<b>VAPOR DENSITY (AIR-1)</b>	N.A.	<b>EVAPORATION RATE</b>	N.A.
<b>SOLUBILITY IN WATER</b>	Negligible		
<b>APPEARANCE AND ODOR</b>	Clear to hazy plastic film - no odor		

**SECTION IV FIRE AND EXPLOSION HAZARD DATA**

<b>FLASH POINT (Method Used)</b>	None	<b>FLAMMABLE LIMITS AVAILABLE</b>	Lel	Uel
<b>EXTINGUISHING MEDIA:</b>	Water, CO <sub>2</sub>		N.A.	N.A.
<b>SPECIAL FIRE FIGHTING PROCEDURES:</b>	None			
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS:</b>	None			

**SECTION V**

THRESHOLD LIMIT VALUE	N.A.
EFFECTS OF OVEREXPOSURE	N.A.
EMERGENCY AND FIRST AID PROCEDURES	N.A.

**SECTION VI**

STABILITY	UNSTABLE		CONDITIONS TO AVOID: Material is flammable.
	STABLE	X	
INCOMPATIBILITY (Materials to Avoid)	Oxidizing materials		
HAZARDOUS DECOMPOSITION PRODUCTS	Carbon monoxide, carbon dioxide on burning		
HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID: N.A.	
May Occur	Will Not Occur		
	X		

**SECTION VII SPILL OR LEAK PROCEDURES**

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED	Sweep up and dispose
WASTE DISPOSAL METHOD	Incinerate in accordance with state, local and federal regulations. Secondary disposal may be in sanitary landfill in accordance with these regulations.

**SECTION VIII SPECIAL PROTECTION INFORMATION**

RESPIRATORY PROTECTION (Specify type)	None needed	
VENTILATION:	LOCAL EXHAUST: X	SPECIAL
	MECHANICAL (general)	OTHER
PROTECTIVE GLOVES: N.A.	EYE PROTECTION: N.A.	
OTHER PROTECTIVE EQUIPMENT: N.A.		

**SECTION IX SPECIAL PRECAUTIONS**

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:	Store away from heat and flames
OTHER PRECAUTIONS:	N.A.

*The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness.*

# Attachment I

## Emission Units Table



**Attachment J**  
**Emission Points Data Summary Sheet**

**Attachment J  
EMISSION POINTS DATA SUMMARY SHEET**

**Table 1: Emissions Data**

Emission Point ID No. (Must match Emission Units Table & Plot Plan)	Emission Point Types	Emission Units Ventilated 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# (Specify VOCs & HAPs)		Maximum Potential Uncontrolled Emissions 4		Maximum Potential Controlled Emissions 5		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Method Used 6
		ID No.	Source	ID No.	Device Type	Short Term	Max (hr/yr)	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr		
1C	n/a	15,25,35,45,55, 65,75,85,105 U1001, L001	Cement Storage Silo, Fly Ash Silo, Bagfill Silo, Scale Tank, Blend Tank, Unloading Pump Truck, Loading Bulk Truck	1C	Baghouse (Dust Collector)	n/a	n/a	CO (630080)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Gas/Vapor/Solid (for PM)	AP-42	
12E, 13E	n/a	12E, 13E	Engine	n/a		n/a	n/a	NOx (10102439)	1.145253	156.8094	1.3188	1.7522	Gas/Vapor/Solid (for PM)	AP-42	
								CO (630080)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	Gas/Vapor/Solid (for PM)	AP-42	
								NOx (10102439)	1.8611	6.3554	1.8611	6.3554	Gas/Vapor/Solid (for PM)	AP-42	
								CO2 Equivalent (100:100:9751, 002:11:3893, 014)	1.7560	5.3456	1.7560	5.1456	Gas/Vapor/Solid (for PM)	AP-42	
								PM1, PM10, PM2.5	254.8600	887.7483	254.8600	887.7483	Gas/Vapor/Solid (for PM)	AP-42	
								PM1, PM10, PM2.5	0.1093	0.3807	0.1093	0.3807	Gas/Vapor/Solid (for PM)	AP-42	
								Acetaldehyde (75070)	0.0012	0.0046	0.0012	0.0046	Gas/Vapor/Solid (for PM)	AP-42	
								Acrolein (107028)	0.0001	0.0006	0.0001	0.0006	Gas/Vapor/Solid (for PM)	AP-42	
								Benzene (71432)	0.0015	0.0056	0.0015	0.0056	Gas/Vapor/Solid (for PM)	AP-42	
								Toluene (108883)	0.0007	0.0024	0.0007	0.0024	Gas/Vapor/Solid (for PM)	AP-42	
								Naphthalene (92103)	0.0001	0.0005	0.0001	0.0005	Gas/Vapor/Solid (for PM)	AP-42	
								1,3-Butadiene (1106990)	0.0001	0.0002	0.0001	0.0002	Gas/Vapor/Solid (for PM)	AP-42	
								o,m,p-Xylenes (95476, 108383, 106423)	0.0005	0.0017	0.0005	0.0017	Gas/Vapor/Solid (for PM)	AP-42	
								Formaldehyde (50000)	0.0019	0.0070	0.0019	0.0070	Gas/Vapor/Solid (for PM)	AP-42	
								Total VOCs	0.5571	1.9408	0.5571	1.9408	Gas/Vapor/Solid (for PM)	AP-42	
								Total SO <sub>2</sub>	0.1543	1.5825	0.1543	1.5825	Gas/Vapor/Solid (for PM)	AP-42	
EP-HR001	n/a	HR001	Haul Truck (Bulk Truck, Pump Truck, Pickup)	n/a		n/a	n/a	PM, PM10, PM2.5	0.8800	2.6005	0.4400	1.3003	Solid (for PM)	AP-42	

## **Attachment K**

### **Fugitive Emissions Data Summary Sheet**

**Attachment K****Description of Fugitive Emissions  
Clarksburg Bulk Cement Plant  
O-Tex Pumping LLC  
Harrison County, West Virginia**

Sources of fugitive emissions include Transfer point (loading/unloading) operations and haul road emissions. Fugitive emissions were calculated using AP-42 factors. Transfer point operations only occur when materials are transferred. Haul road emissions only occur when trucks are onsite.

**Transfer Point Operations**

Transfer point emissions occur when materials are transferred between trucks, silos, scale tank and blend tank. Fugitive emissions were estimated using AP-42 methods. Detailed calculations are shown in Table 4.

**Haul Road Emissions**

Haul road emissions are emitted when trucks or service vehicles enter the Facility. The Facility is flat and unpaved. Detailed calculations are shown on Table 5.

**Attachment K: Emissions Summary Sheet**  
**Fugitive Emissions Data Summary Sheet**

FUGITIVE EMISSIONS SUMMARY	All Regulated Pollutants Chemical Name/CAS 1	Maximum Potential Uncontrolled Emissions 2		Maximum Potential Controlled Emissions 3		Est. Method Used 4
		lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads	n/a					
Unpaved Haul Roads	PM, PM10, PM2.5	0.8800	2.6005	0.4400	1.3003	MB
Transfer Point Operations	Total VOCs	0.00E+00	0.00E+00	0.00E+00	0.00E+00	AP-42
	PM, PM10, PM2.5	114.5253	156.8094	1.3188	1.7522	

1 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>, all applicable Greenhouse Gases (including CO<sub>2</sub> and methane), etc. DO NOT LIST H<sub>2</sub>, H<sub>2</sub>O, N<sub>2</sub>, O<sub>2</sub>, and Noble Gases.

2 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).

3 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).

4 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

### Emission Unit Data Sheets



**Attachment L: Diesel Internal Compressor Engine  
Emission Unit Data Sheet**

*Complete this section for any natural gas-fired reciprocating internal combustion engine.*

Emission Unit (Source) ID No. <sup>1</sup>		12S		13S	
Emission Point ID No. <sup>2</sup>		12E		13E	
Engine Manufacturer and Model		CAT 4.4 TA Diesel Engines		Kubota V2203-M-E3B	
Manufacturer's Rated bhp/rpm		173.5 HP @ 2200 rpm		48.1 HP @ 2800 rpm	
Source Status <sup>3</sup>		NS		NS	
Date Installed/Modified/Removed <sup>4</sup>		2014		2014	
Engine Manufactured/Reconstruction Date <sup>5</sup>		2014		2014	
Is this engine subject to 40CFR60, Subpart IIII?		Yes		Yes	
Is this a Certified Stationary Compression Ignition Engine according to 40CFR60, Subpart IIII? (Yes or No) <sup>6</sup>		Yes		Yes	
Is this engine subject to 40CFR63, Subpart ZZZZ? (yes or no)		Yes		Yes	
Engine, Fuel and Combustion Data	Engine Type <sup>7</sup>	4S		4S	
	APCD Type <sup>8</sup>	--		--	
	Fuel Type <sup>9</sup>	Diesel		Diesel	
	Operating bhp/rpm	173.5 HP @ 2200 rpm		48.1 HP @ 2800 rpm	
	BSFC (Btu/bhp-hr)	15,464		10,021	
	Fuel Consumption (gal/hr)	9.8		1.82	
	Fuel Consumption (gal/yr)	85848		15943	
	Operation (hrs/yr)	8760		500	
Reference <sup>10</sup>	Potential Emissions <sup>11</sup>	lbs/hr	tons/yr	lbs/hr	tons/yr
AP	NO <sub>x</sub>	1.1409	4.9973	0.5931	0.1483
AP	CO	1.4262	6.2467	0.4349	0.1087
AP	VOC	0.4362	1.9105	0.1209	0.0302
AP	SO <sub>2</sub>	0.3557	1.5579	0.0986	0.0247
AP	PM <sub>10</sub>	0.0856	0.3748	0.0237	0.0059
AP	Formaldehyde	0.0016	0.0070	0.0003	0.0001
MRR <sup>12</sup>	Proposed Monitoring:	Monitor engine setting adjustments to ensure these are consistent with manufacturer's instructions.		Monitor engine setting adjustments to ensure these are consistent with manufacturer's instructions.	
	Proposed Recordkeeping:	1) Maintain records of maintenance performed on engines. 2) Documentation from manufacturer that engine is certified to meet emission standards		1) Maintain records of maintenance performed on engines. 2) Documentation from manufacturer that engine is certified to meet emission standards	
	Proposed Reporting:	N/A		N/A	

# **Attachment M**

## **Air Pollution Control Device**

**Attachment M**  
**Air Pollution Control Device Sheet**  
**(BAGHOUSE)**  
**Control Device ID No. (must match Emission Units Table):**

**Equipment Information and Filter Characteristics**

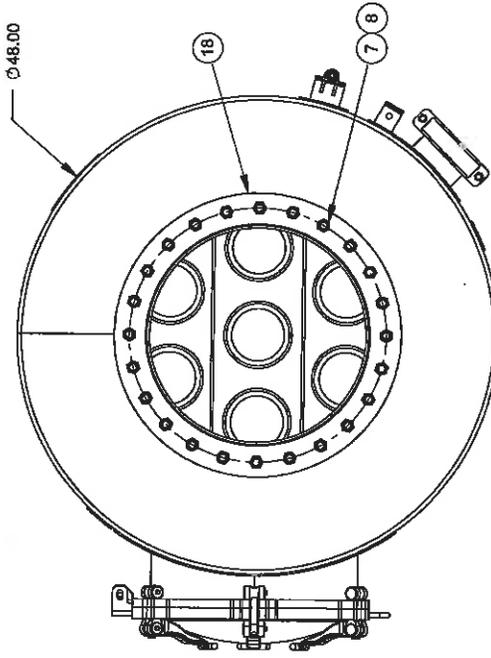
1. Manufacturer: Wilco Machine and Fab, Inc.		2. Total number of compartments: 1	
Model No. 230109		3. Number of compartment online for normal operation: 1	
4. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency. (See attached diagram in Attachment M)			
5. Baghouse Configuration: (check one)		Open Pressure <input type="checkbox"/> Closed Pressure <input checked="" type="checkbox"/> Closed Suction <input type="checkbox"/>	
		Electrostatically Enhanced Fabric <input type="checkbox"/>	
		Other, Specify _____	
6. Filter Fabric Bag Material:		7. Bag Dimension:	
Nomex nylon Wool		Diameter 6 in.	
<input checked="" type="checkbox"/> Polyester Polypropylene		Length 5.4 ft.	
Acrylics Ceramics		8. Total cloth area: 164.1 ft <sup>2</sup>	
Fiber Glass		9. Number of bags: 19	
Cotton Weight 12 oz./sq.yd		10. Operating air to cloth ratio: 3 ft/min	
Teflon Thickness 0.05 in			
Others, specify _____			
11. Baghouse Operation:		Automatic <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/>	
Continuous _____			
12. Method used to clean bags:			
Mechanical Shaker Sonic Cleaning Reverse Air Jet			
<input checked="" type="checkbox"/> Pneumatic Shaker Reverse Air Flow Other:			
Bag Collapse Pulse Jet			
Manual Cleaning Reverse Jet			
13. Cleaning initiated by:			
Timer _____		Frequency if timer actuated _____	
Expected pressure drop range _____ in. of water		<input checked="" type="checkbox"/> Other _____	
14. Operation Hours:			
Max. per day: 24		15. Collection efficiency: Rating: 98.88 %	
Max. per yr: 8760		Guaranteed minimum: 98.88 %	
<b>Gas Stream Characteristics</b>			
16. Gas flow rate into the collector: 110 ACFM at 100 °F and 40 PSIA		Average Expected: 40 PSIA	
ACFM: 110 Design: 40 PSIA Maximum: 40 PSIA			
17. Water Vapor Content of Effluent Stream: N/A		lb. Water/lb. Dry Air _____	
18. Gas Stream Temperature: N/A °F		19. Fan Requirements: N/A hp	
		OR N/A ft <sup>3</sup> /min	
20. Stabilized static pressure loss across baghouse.		Pressure Drop: High 40 in. H <sub>2</sub> O	
		Low 35 in. H <sub>2</sub> O	
21. Particulate Loading: Inlet: 121.4662 grain/scf		Outlet: 1.3987 grain/scf	
22. Type of Pollutant(s) to be collected (if particulate give specific type): PM, PM <sub>10</sub>			
23. Is there any SO <sub>2</sub> in the emission stream? <input checked="" type="checkbox"/> No		SO <sub>2</sub> content: N/A ppmv	

**Attachment M**  
**Air Pollution Control Device Sheet**  
**(BAGHOUSE)**  
**Control Device ID No. (must match Emission Units Table):**

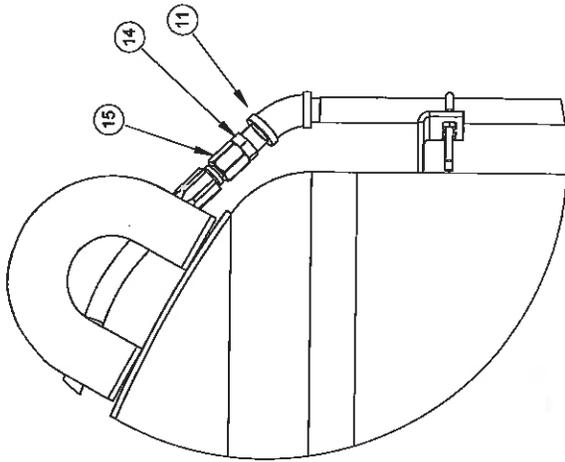
**Equipment Information and Filter Characteristics**

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 <sub>10</sub>	54.103	57.382	0.6261	0.6640
PM	114.525	121.466	1.3188	1.3987
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	N/A		N/A	
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)?				
<input type="checkbox"/> Continuous Opacity <input checked="" type="checkbox"/> Pressure Drop <input type="checkbox"/> Alarms-Audible to Process Operator <input checked="" type="checkbox"/> Visual opacity readings, Frequency: <input checked="" type="checkbox"/> Other, specify: Operator inspection of bags				
27. Describe any recording device and frequency of log entries: N/A				
28. Describe any filter seeding being performed: N/A				
29. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification): N/A				
30. Describe the collection material disposal system: Waste Tank (10' x 9.25' with 400 cf storage ASME Code, 40 psi MAWP at 120)				
31. Have you included <i>Baghouse Control Device</i> 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:		RECORDKEEPING:		
1) Daily monitor dust collector system to insure it is pulling vacuum on vent tank and monitor pressure drop from control room);		1) Records of the occurrence and duration of baghouse malfunction or shutdown		
2) Weekly visual inspect dust collector socks for wear, clean, and replace if needed; Weekly inspect the dust collector exhaust motor and fan and clean and lubricate.		2) Records of the maintenance and actions performed during malfunction or shutdown		
REPORTING: N/A		TESTING: N/A		
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. PM10: 98.88% (Exhaust PM10 Emission Concentration (gr/dscf): <0.01) PM: 98.88%				
34. Manufacturer's Guaranteed Control Efficiency for each air pollutant. PM10: 98.88% (Exhaust PM10 Emission Concentration (gr/dscf): <0.01) PM: 98.88%				
35. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty. Operate bag shaker rate after each use				

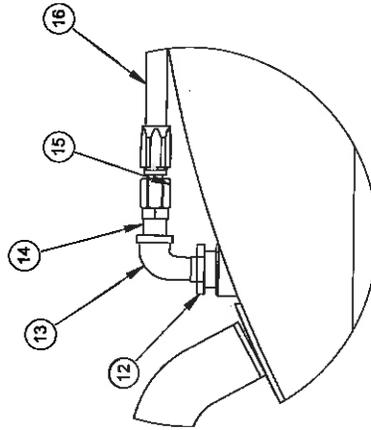




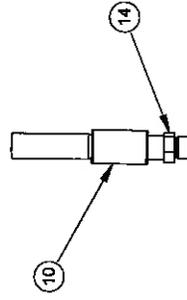
SECTION D-D  
SCALE 1:12



DETAIL B



DETAIL C



DETAIL E

UNLESS OTHERWISE SPECIFIED: 1. ALL DIMENSIONS ARE IN INCHES 2. DIMENSIONS IN PARENTHESES ARE FOR INFORMATION ONLY 3. DIMENSIONS IN PARENTHESES ARE FOR INFORMATION ONLY		WILCO MACHINE AND FAB. INC.	
TITLE ASSY-TANK-DUST COLLECTOR-19 BAG-600 CFM-PRESSURE/VACUUM		REV C	
SIZE B	DWG. NO. 230109	REV C	
DATE 11/27/2011	DESIGNER B. WALLEY	SCALE 1:4	WEIGHT 146.008
DATE 11/27/2011	APPROVER J. FELDMAN	SHEET 2 OF 2	
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF WILCO MACHINE & FAB. INC. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF WILCO MACHINE & FAB. INC. © 2011			

1 2 3 4 5 6 7 8

D C B A

2 3 4 5 6 7 8



# W. L. GORE & ASSOCIATES, INC.

101 LEWISVILLE ROAD • P. O. BOX 1100 • ELKTON, MARYLAND 21922-1100  
 PHONE: 410/392-3300 FAX: 410/398-6624  
 www.gore.com/filtration

## FILTRATION TECHNOLOGIES

### Collection Efficiency Data: Count Basis - Test Parameters

*(Efficiencies based on "COUNT", not "MASS" basis)*

Date: March 21, 2005  
 Material: GORE-TEX® High Durability Filter Bag (polyester felt, 407 g/m<sup>2</sup>, 12 oz/yd<sup>2</sup>)  
 Particulate: Monodisperse Dioctyl-Phthalate (DOP)  
 Face Velocity: 5.33 cm/sec.  
 Flow Rate: 31.99 l/min.  
 Counter: TSI, Inc. Model 8160 Efficiency Tester

#### Test A

Particle Size μm	Percent Efficiency	Upstream Counts (p/cm3)	Downstream Counts (p/cm3)
0.030	97.742	1.16E+03	2.72E+01
0.070	94.328	1.61E+05	9.12E+03
0.100	94.792	2.61E+03	1.37E+02
0.300	98.797	7.92E+03	9.90E+01

#### Test B

Particle Size μm	Percent Efficiency	Upstream Counts (p/cm3)	Downstream Counts (p/cm3)
0.030	97.706	1.16E+03	2.77E+01
0.070	94.240	1.60E+05	9.22E+03
0.100	94.703	2.59E+03	1.38E+02
0.300	98.820	7.40E+03	9.07E+01

#### Test C

R Particle Size μm	Percent Efficiency	Upstream Counts (p/cm3)	Downstream Counts (p/cm3)
0.030	98.054	1.11E+03	2.24E+01
0.070	94.967	1.70E+03	8.54E+01
0.100	95.404	2.56E+03	1.18E+02
0.300	99.034	7.81E+03	7.83E+01

NOTE: The particle count numbers listed in the table must be adjusted to account for different sampling periods (volumes) upstream and downstream, prior to calculating percent efficiency. The data presented above is for a single test. All data expressed as typical values. Please contact W. L. Gore & Associates, Inc. to confirm current information.

®GORE-TEX is a registered trademark of W. L. Gore & Associates, Inc.

RC/dlc: Colleff-0505055



### **Automated Filter Efficiency Testing**

1. The enclosed data is based on laboratory tests, therefore, it is not practical to transpose the data into field emission data and it should be treated as relative and not empirical.
2. The data is generated for purposes of comparing the fractional collection efficiency versus particle size of various unused filter media. The filter is challenged with monodisperse dioctyl-phthalate (DOP) or charge-neutralized Sodium Chloride Aerosol particles of known size. The efficiency is determined by measuring the particle count concentrations upstream and downstream of the filter media. The particle collection efficiency is measured by an automated efficiency tester Model 8160 manufactured by TSI, Inc.
3. The test apparatus was designed to distinguish between highly efficient filter media. The most penetrating particle size is normally between 0.1 and 0.3 µm. The test, therefore, is performed in the submicron size range.
4. An air-to-cloth ratio of 10.5 fpm (5.34 cm/sec) is typically used. In some cases, the test air-to-cloth ratio may be higher than one would expect to experience in the field or at least based upon the certain types of processes. Some challenges may include efficiencies at two different air-to-cloth ratios. At least initially, the GORE-TEX® membrane filter samples show less of an effect due to the air-to-cloth ratio than the conventional media samples do.
5. Because of the apparatus, only new or virgin samples can be challenged. Therefore, this test does not take into account the establishment of either the primary or the secondary dust cakes. Although conventional woven or felted samples require the primary and secondary dust cakes, the GORE-TEX® membrane laminate filter media does not. This can be beneficial for the GORE-TEX membrane media because it does not rely upon the dust cake and can operate efficiently without pressure differential penalties.
6. The samples, which are challenged in this device, are flat and circular in shape. This is not the case for filters which, depending upon the style, are manufactured into various configurations. The test device has no potential leak points around the filter media samples unlike the cartridge or filter bag-to-collector seal. Although we do not see or expect leakage, some potential does exist for seams as well as filter-to-housing unions. This can be negligible if good manufacturing practices are performed.
7. This data is generated based on count and not mass and may be useful in "indicating" such phenomena with respect to heavy metal and/or condensable organic compound (dioxins, furans) enrichment on finer particulate.
8. This data is not an indicator for gases or vapor, which have not condensed prior to the fabric filter.

Gore dust sock

Gore PN: 43WH27222

Wilco PN: 105563

Description:

BAG-DUST COLLECTOR-12 OZ. POLY FELT- WITH SNAPBAND CUFF BOTTOM END AND TOP END CLOSED WITH 2" HANGING LOOP-MEMBRANE LINED-6.00" O.D. X 64.50 +/- .5 " OVERALL LENGTH

Total cloth area: 267.8 ft<sup>2</sup> 31 sock (bag).

Used in Wilco dust collector models models:

185022 Wilco 19-bag dust collector 600CFM

185050 Wilco 19-bag dust collector 600CFM PV

200700 Wilco 19-bag dust collector 600CFM PV actuated

230109 Wilco 19-bag dust collector 600CFM PV no vent

231452 Wilco 31-bag dust collector 785CFM non-code

231500 Wilco 31-bag dust collector 785CFM PV

232075 Wilco 31-bag dust collector 785CFM non-code with blower

Provided by W. L. Gore & Associates Inc.:

Efficiency: 99%

Exhaust PM<sub>10</sub> Emission concentration (gr/dscf): <0.01

## Attachment N

### Supporting Emission Calculations

Table 1

**Facility Information  
Clarksburg Bulk Cement Plant  
Harrison County, West Virginia  
O-TEX PUMPING LLC**

<b>Oil and Gas Site General Information</b>
---

<b>Administrative Information</b>	
Company Name	O-TEX PUMPING LLC
Facility	Clarksburg Bulk Cement Plant
Nearest City/Town	Clarksburg
NAICS	213112
Latitude/Longitude	39.261434, -80.379749
County	Harrison County

<b>Technical Information</b>	
MaxSite Throughput (lb/yr):	247,032,000

<b>Equipment/Processes at Site</b>	
<b>Equipment/Process Types</b>	<b>How many for this site?</b>
IC Engines	2
Diesel Engines	2
Cement Silo	5
Fly Ash Silo	1
Barite Silo	1
Scale Tank	1
Waste Tank	1
Blend Tank	1
Baghouse	1
Pressure Additive Hopper	1

**Table 2**  
**Uncontrolled/Controlled Emissions Summary**  
**Clarksville Bulk Cement Plant**  
**Harrison County, West Virginia**  
**O-TEX PUMPING LLC**

Emission Source	VOC <sup>2</sup>		NO <sub>x</sub>		CO <sub>2</sub>		CO		SO <sub>2</sub>		PM <sub>10</sub>		Pb		Lead		Total HAPs		Benzene		2,3,7,8-Substituted Dioxin/Furan	
	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)
UNCONTROLLED (Storage, Handling, Engines, and Diesel Tanks)																						
Highload Emissions <sup>1</sup>	0.5571	1.2940	5.4055	254.8200	887.7428	3.8611	6.9354	1.6505	0.3930	1.1702	0.8800	2.6005	0.0061	0.0236	0.0015	0.0025	0.0005	0.0017	0.0019	0.0033		
Engine Emissions <sup>2</sup>	0.2871	1.7940	5.4055	254.8200	887.7428	1.8811	6.9354	1.6505	0.2023	1.5510	0.9893	2.8913	0.0081	0.0226	0.0015	0.0025	0.0005	0.0017	0.0019	0.0033		
TOTALS:																						
UNCONTROLLED (Transfer Point Emissions)																						
Transfer Point Emissions <sup>3</sup>																						
TOTALS:																						
CONTROLLED EMISSIONS																						
Impulse Emissions (from Transfer Point)																						
Controlled Fugitive Emissions (from Handling)																						
TOTALS:																						
POTENTIAL TO EXIST	0.5571	1.7940	5.4055	254.8200	1,477,485	3.8611	6,9354	1,6505	0.3930	1,1702	0,8800	2,6005	0,0061	0,0236	0,0015	0,0025	0,0005	0,0017	0,0019	0,0033		

Table 5: for PM emissions from handling  
 2. Site Table 6 for engine emission calculations  
 3. Site Table 4 for Transfer Point emissions  
 4. The heavy potential to exist is the sum of emissions from haul roads, engine emissions, and transfer points.  
 5. The emission is counted as VOC emissions. TOC= total organic compound  
 6. SO<sub>x</sub> emission is counted as SO<sub>2</sub> emission

Error any noise here

Table 3

Permit Summary  
 Clarksburg Bulk Cement Plant  
 Harrison County, West Virginia  
 O-TEX PUMPING LLC

Pollutant		Emissions			Threshold Exceeded?	
		Uncontrolled	Controlled	Threshold	Uncontrolled	Controlled
VOC	lbs/hr	0.5571	0.5571	6		
	tons/yr	1.9408	1.9408	10		
NO <sub>x</sub>	lbs/hr	1.7340	1.7340	6		
	tons/yr	5.1456	5.1456	10		
CO	lbs/hr	1.8611	1.8611	6		
	tons/yr	6.3554	6.3554	10		
SO <sub>2</sub>	lbs/hr	0.4543	0.4543	6		
	tons/yr	1.5825	1.5825	10		
PM <sub>2.5</sub>	lbs/hr	0.00E+00	0.00E+00	6		
	tons/yr	0.00E+00	0.00E+00	10		
PM <sub>10</sub>	lbs/hr	54.6081	0.9334	6	Yes	
	tons/yr	61.2765	1.6335	10	Yes	
PM	lbs/hr	115.5146	1.8681	6	Yes	
	tons/yr	159.7906	3.4331	10	Yes	
Total HAPs	lbs/hr	0.0061	0.0061	2		
	tons/yr	0.0226	0.0226	5		
Total TAPs	lbs/hr	0.0034	0.0034	1.14		
	tons/yr	0.0128	0.0128			

<b>Enter any notes here:</b>	1. Emissions are based on 98.88% Baghouse (Dust Collector) operating 100% of the time.
------------------------------	--

Table 4

Transfer Point Emissions  
 Clarksburg Bulk Cement Plant  
 Harrison County, West Virginia  
 O-TEX PUMPING LLC

Control Device	230109 Wilco 19-bag dust collector 600 CFM PV no
Control Efficiency (%)	98.88

Transfer Point	Truck and Loading Type	Emission Factor, <sup>2</sup>		Transfer rate (t)				Uncontrolled						Controlled	
		PM (lb/ton)	PM10 (lb/ton)	tph	tpy	lb/hr	tpy	lb/h	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Truck to Cement Silo	Unloading Pump Trucks	0.7300	0.4700	80.00	116800.00	58.4000	42.6320	37.6000	27.4480	0.6519	0.4759	0.4197	0.3064		
Cement Supplement (Fly ash, Berrite) to Silos	Unloading Pump Trucks	3.1400	1.1000	4.14	6044.40	12.9996	9.4897	4.5540	3.3244	0.1451	0.1059	0.0508	0.0371		
Sacks to Pressure Additive hopper	Pneumatically Loading	0.0051	0.0028	8.00	671.60	0.0408	0.0017	0.0224	0.0009	0.0408	0.0017	0.0224	0.0009		
Silos to Scale Tank	Pneumatically Loading	0.0051	0.0028	23.00	123516.00	0.1173	0.3150	0.0644	0.1729	0.0013	0.0035	0.0007	0.0019		
Scale Tank to Blend Tank	Pneumatically Loading	0.5720	0.1560	20.00	123516.00	11.4400	35.3256	3.1200	9.6342	0.1277	0.3943	0.0348	0.1075		
Blend Tank to Truck	Loading Bulk Trucks	1.1180	0.3100	28.20	123516.00	31.5276	69.0454	8.7420	19.1450	0.3519	0.7708	0.0976	0.2137		
					Total Emissions	114.5253	156.8094	54.1028	59.7255	1.3188	1.7522	0.6261	0.6676		

Enter any notes here.

1. Maximum Hourly Transfer rate was calculated only when the loading/unloading activity occurs; Single truck loading time is 3 hr and single truck unloading time is 1 hr per trip. Additive Hopper is not vented to the baghouse;  
 2. EPA, AP-42, Volume I, Section 11.12 Concrete Batching, Table 11.12-2

Table 5

Haul Road Emissions  
 Clarksburg Bulk Cement Plant  
 Harrison County, West Virginia  
 O-TEX PUMPING LLC

Unpaved Haul Roads	PM	PM10
Particle Size Multiplier (f)	0.8	0.36
Silt Content of Road Surface Material (s) (%)	5.1	5.1
Days per Year with Precipitation > 0.01 in (p)	150	150
Control Efficiency for Watering <sup>1</sup> (%)	50	50

Bulk Truck Trip Calculation	
No of Bulk Trucks	8.0
No of Trips Per day Per Truck	4.0
Trips per day	32.0
Trips per Year	11680.0

Pump Truck Trip Calculation	
No of Pump Trucks	2.0
No of Trips Per day Per Truck	4.0
Trips per day	8.0
Trips per Year	2920.0

Pick Up Truck Trip Calculation	
No of Pickup Trucks	2.0
No of Trips Per day Per Truck	1.0
No of Trips Per day	2.0
Trips Per Year	730.0

	# of Wheels	Mean Vehicle Weight (W) (tons)	Mean Vehicle Speed (S) (mph)	Miles Per Trip (miles)	Maximum Trips per Hour	Maximum Trips per Year	Vehicle Miles Travelled (miles/hr) (miles/year)	PM (lbs/VMT) (lbs/year)	PM10 (lbs/VMT) (lbs/year)
Bulk Trucks	10	35	10	0.1	1.3	11680	0.1333 1168.0000	3.4769	1.5646
Pump Trucks	10	40	10	0.1	1.0	2920	0.1000 292.0000	3.8175	1.7179
Pickup Trucks	4	2.5	10	0.1	1.0	730	0.1000 73.0000	0.3467	0.1560

	Uncontrolled Emissions				Controlled Emissions			
	PM (lbs/hr)	PM (lbs/year)	PM10 (lbs/hr)	PM10 (lbs/year)	PM (lbs/hr)	PM (lbs/year)	PM10 (lbs/hr)	PM10 (lbs/year)
Bulk Trucks	0.4636	4060.9802	2.0305	1827.4411	0.9137	2030.4901	0.1043	913.7205
Pump Trucks	0.3818	1114.7186	0.5574	501.6234	0.2508	557.3593	0.2787	250.8117
Pickup Trucks	0.0347	25.3076	0.0127	11.3884	0.0057	12.6538	0.0078	5.6942
Total Emissions	0.8800	5,201.0064	2.6005	2,340.4529	1.1702	2,600.5032	0.1980	1,170.2264
Total Haul Road Emissions	0.8800	5,201.0064	2.6005	2,340.4529	1.1702	2,600.5032	0.1980	1,170.2264

Enter any notes here  
<sup>1</sup> EPA, AP-42, Volume I, Section 13.2.2 Unpaved Roads (11/06); assume 2:1 moisture ratio Section 13.2.2 Unpaved Roads (11/06)  
 Source: Attachment L, Fugitive Emissions from Unpaved Haul Roads, Rev 03/2007, West Virginia Department of Environmental Protection

Table 6

**Engine Emissions**  
**Clarksburg Bulk Cement Plant**  
**Harrison County, West Virginia**  
**O-TEX PUMPING LLC**

**CAT 4.4 TA Diesel Engines**

Power (hp)	173.5
Fuel consumption (gal/hr) <sup>1</sup>	9.8
Heat Content of Fuel (Btu/gal)	137380
Operating Hours/year	8760

Pollutant	Emission Factors		lb/hr	tpy
	(lb/hp-hr)	(lb/MMBtu)		
NOx <sup>1</sup>	6.58E-03		1.1409	4.9973
CO <sup>1</sup>	8.22E-03		1.4262	6.2467
CO <sub>2</sub>	1.15		199.5250	873.92
PM <sub>10</sub> <sup>1</sup>	4.93E-04		0.0856	0.3748
PM <sup>1</sup>	4.93E-04		0.0856	0.3748
SO <sub>x</sub>	2.05E-03		0.3557	1.5579
TOC Exhaust	2.47E-03		0.4285	1.88
TOC Evaporative	0		0.0000	0.00
TOC Crankcase	4.41E-05		0.0077	0.03
TOC Refueling	0		0.0000	0.00
HAPS				
Acetaldehyde		7.67E-04	0.0010	0.0045
Acrolein		9.25E-05	0.0001	0.0005
Benzene		9.33E-04	0.0013	0.0055
Formaldehyde		1.18E-03	0.0016	0.0070
Naphthalene		8.48E-05	0.0001	0.0005
Toluene		4.09E-04	0.0006	0.0024
Xylene		2.85E-04	0.0004	0.0017
1,3 Butadiene		3.91E-05	0.0001	0.0002

	lb/hr	tpy
TOTAL NOx	1.7340	5.1456
TOTAL SOx	0.4543	1.5825
TOTAL PM	0.1093	0.3807
TOTAL TAPs (Formaldehyde)	0.0019	0.0070
TOTAL TAPs (Benzene)	0.0015	0.0056
TOTAL TAPs	0.0034	0.0128
TOTAL PM <sub>10</sub>	0.1093	0.3807
TOTAL CO <sub>2e</sub> Emissions	254.8400	887.7483
TOTAL HAPs	0.0061	0.0226
TOTAL VOC <sup>2</sup>	0.5571	1.9408

**Kubota V2203-M-E3B (backup engine)**

Power (hp)	48.1
Fuel consumption (gal/hr) <sup>1</sup>	1.82
Heat Content of Fuel (Btu/gal)	137380
Operating Hours/year	500

Pollutant	Emission Factors		lb/hr	tpy
	(lb/hp-hr)	(lb/MMBtu)		
NOx <sup>1</sup>	1.23E-02		0.5931	0.1483
CO <sup>1</sup>	9.04E-03		0.4349	0.1087
CO <sub>2</sub>	1.15		55.3150	13.83
PM <sub>10</sub> <sup>1</sup>	4.93E-04		0.0237	0.0059
PM <sup>1</sup>	4.93E-04		0.0237	0.0059
SOx	2.05E-03		0.0986	0.0247
TOC Exhaust	2.47E-03		0.1188	0.0297
TOC Evaporative	0		0.0000	0.0000
TOC Crankcase	4.41E-05		0.0021	0.0005
TOC Refueling	0		0.0000	0.0000
HAPS				
Acetaldehyde		7.67E-04	1.92E-04	4.79E-05
Acrolein		9.25E-05	2.31E-05	5.78E-06
Benzene		9.33E-04	2.33E-04	5.83E-05
Formaldehyde		1.18E-03	2.95E-04	7.38E-05
Naphthalene		8.48E-05	2.12E-05	5.30E-06
Toluene		4.09E-04	1.02E-04	2.56E-05
Xylene		2.85E-04	7.13E-05	1.78E-05
1,3-Butadiene		3.91E-05	9.78E-06	2.44E-06

**Enter Any Notes Here:**

1. Emission factors for NOx, CO, and PM were obtained from 40 CFR 1039.102; PM<sub>10</sub> emission is assumed to be the same as PM; NOx Emission factor of Kubota Engine is assumed to be the same as NMHC+NOx as individual Emission Factor is not available
2. Emission factors for all other contaminants were obtained from AP-42, Section 3.3 "Gasoline and Diesel Industrial Engines", Table 3.3-1 and Table 3.3-2.
3. Total VOC from Engine is assumed to be the sum of TOC. TOC=total organic compounds



# C4.4 ACERT™ Industrial Engine

Tier 4 Interim/Stage IIIB  
61.5-129.4 kW/82.5-173.5 bhp @ 2200 rpm



Image shown may not reflect actual engine configuration

## CAT® ENGINE SPECIFICATIONS

### I-4, 4-Stroke-Cycle Diesel

Bore	105 mm (4.13 in)
Stroke	127 mm (5.00 in)
Displacement	4.4 L (268.5 in <sup>3</sup> )
Aspiration	Turbocharged-Aftercooled (TA) or Series Turbocharged-Aftercooled (TTA)
Compression Ratio	16.5:1
Combustion System	Direct Injection
Rotation (from flywheel end)	Counterclockwise
Capacity for Liquids	
Cooling System	10.8 L (11.4 U.S. qts)
Lube System (refill) sump dependent	5.2-13.5 L (5.5-14.27 U.S. qts)
Engine Weight, Net Dry (approximate)	
TA	400 kg (926 lbs)
TTA	420 kg (881.8 lbs)

## FEATURES

### Emissions

Designed to meet 2012 EPA (U.S.) Tier 4 Interim, EU Stage IIIB and Japanese MLIT emissions requirements.

### Reliable, Quiet, and Durable Power

World-class manufacturing capability and processes coupled with proven core engine designs assure reliability, quiet operation, and many hours of productive life.

### High Performance

Series turbocharging with smart wastegate available on specific ratings for fast response, high power, and increased torque.

### Fuel Efficiency

Fuel consumption optimized to match operating cycles of a wide range of equipment and applications. No additional fluids or additives are required, which lowers operating costs.

### Fuel & Oil

Tier 4 Interim/Stage IIIB engines require Ultra Low Sulfur Diesel (ULSD) fuel containing a maximum of 15 ppm sulfur, and new oil formulations to support the new technology. Cat® engines are designed to accommodate B20 biofuel. Your Cat dealer can provide more information regarding fuel and oil.

### Broad Application Range

Industry leading range of factory configurable ratings and options for agricultural, materials-handling, construction, mining, aircraft ground support, and other industrial applications.

### Package Size

Ideal for equipment with narrow engine compartments. Multiple installation options minimize total package size.

### Low-Cost Maintenance

Worldwide service delivers ease of maintenance and simplifies the servicing routine. Hydraulic tappets, multi-vee belts, "no ash service" aftertreatment, and 500-hour oil change intervals enable low-cost maintenance. Many service items have a choice of location on either side of the engine to enable choice of service access. The S•O•S<sup>SM</sup> program is available from your Cat dealer to determine oil change intervals and provide optimal performance.

### Quality

Every Cat engine is manufactured to stringent standards in order to assure customer satisfaction.

### World-class Product Support Offered Through Global Cat Dealer Network

- Scheduled maintenance, including S•O•S<sup>SM</sup> sample
- Customer Support Agreements (CSA)
- Cat Extended Service Coverage (ESC)
- Superior dealer service network
- Extended dealer service network through the Cat Industrial Service Distributor (ISD) program

**Web Site:** For additional information on all your power requirements, visit [www.cat-industrial.com](http://www.cat-industrial.com).



## C4.4 ACERT™ Industrial Engine

Tier 4 Interim/Stage IIIB  
61.5-129.4 bkW/82.5-173.5 bhp @ 2200 rpm

### STANDARD ENGINE EQUIPMENT

#### Air Inlet

Standard air cleaners

#### Control System

Full electronic control system, all connectors and wiring looms waterproof and designed to withstand harsh off-highway environments, flexible and configurable software features and well supported SAE J1939 CAN bus enables highly integrated machines

#### Cooling System

Top tank temperature 108°C (226°F) as standard to minimize cooling pack size, 50:50 water glycol mix, detailed guidance on cooling system design and validation available to ensure machine reliability

#### Exhaust System

Diesel particulate filter supplied with a range of inlet and outlet options, no ash service requirement, passive regeneration

#### Flywheels and Flywheel Housing

Wide choice of drivetrain interfaces, including but not limited to SAE2 and SAE3 configurations

#### Fuel System

Electronic high pressure common rail, ACERT™ Technology, innovative filter design to ensure maximum protection of the engine.

#### Lube System

Choice of sumps for different applications

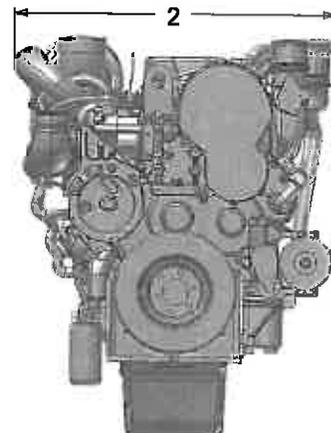
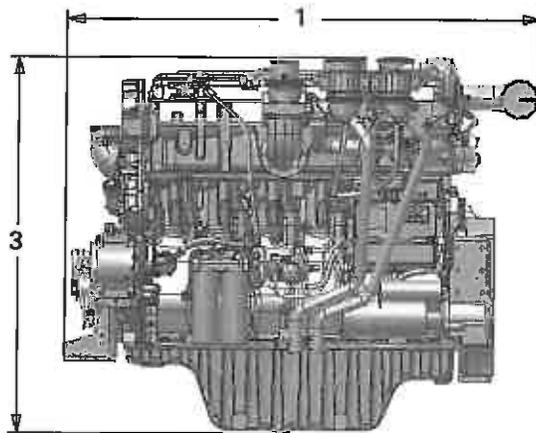
#### Power Take Off

SAE A or SAE B flanges on left-hand side, additional SAE A flange available on LHS, engine power can also be taken from the front of the engine on some applications, factory fitted compressors are also available

#### General

Available with or without a balancer

### DIMENSIONS



(1) Length

TA, TTA: 845.1 mm (33.3 in)

(2) Width

TA: 772.4 mm (30.4 in)  
TTA: 741.6 mm (29.1 in)

(3) Height

TA: 848.2 mm (33.4 in)  
TTA: 867.6 mm (34.1 in)

**Note:** Final dimensions dependent on selected options

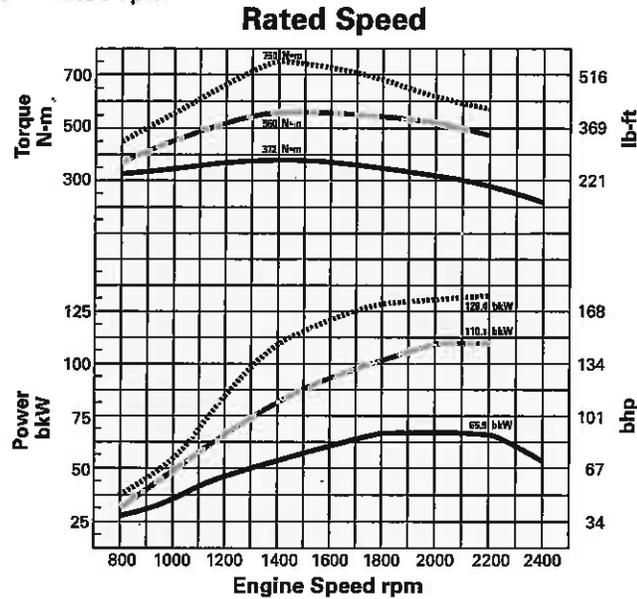


# C4.4 ACERT™ Industrial Engine

Tier 4 Interim/Stage IIIB  
61.5-129.4 bkW/82.5-173.5 bhp @ 2200 rpm

## PERFORMANCE DATA — PRELIMINARY

Turbocharged-Aftercooled — 2200 rpm



### Speed Range

Rating	Speed rpm	Peak Power bkW	Peak Power bhp	Speed rpm	Peak Torque N-m	Peak Torque lb-ft
B	2200	61.5	82.5	1400	347	255.9
B*	2200	65.9	88.4	1400	370	272.9
B	2200	70.0	93.9	1400	400	295.0
C	2200	74.5	100.0	1400	450	331.9
C	2200	82.0	110.0	1400	450	331.9
B	2200	85.9	115.2	1400	480	354.0
B	2200	91.0	122.0	1400	500	368.8
B	2200	92.5	124.0	1400	530	390.9
C	2200	98.0	131.4	1400	500	368.8
C	2200	102.1	137.0	1400	560	413.0
C	2200	106.0	142.1	1400	560	413.0
C*	2200	110.1	147.6	1400	560	413.0
B	2200	105.1	141.0	1400	650	479.4
C	2200	117.0	157.0	1400	683	503.8
C*	2200	129.4	173.5	1400	750	553.2

\*Curve shown

## RATING DEFINITIONS AND CONDITIONS

**IND-B** for service where power and/or speed are cyclic (time at full load not to exceed 80%).

**IND-C (Intermittent)** is the horsepower and speed capability of the engine where maximum power and/or speed are cyclic (time at full load not to exceed 50%).

Additional ratings are available for specific customer requirements. Consult your Cat dealer.

**Rating Conditions** are based on ISO/TR14396, inlet air standard conditions with a total barometric pressure of 100 kPa (29.5 in Hg), with a vapor pressure of 1 kPa (.295 in Hg), and 25°C (77°F). Performance is measured using fuel to EPA specifications in 40 CFR Part 1065 and EU specifications in Directive 97/68/EC with a density of 0.845-0.850 kg/L @ 15°C (59°F) and fuel inlet temperature 40°C (104°F).



## C4.4 ACERT™ Industrial Engine

Tier 4 Interim/Stage IIIB  
61.5-129.4 kW/82.5-173.5 bhp @ 2200 rpm

### AFTERTREATMENT CONFIGURATION

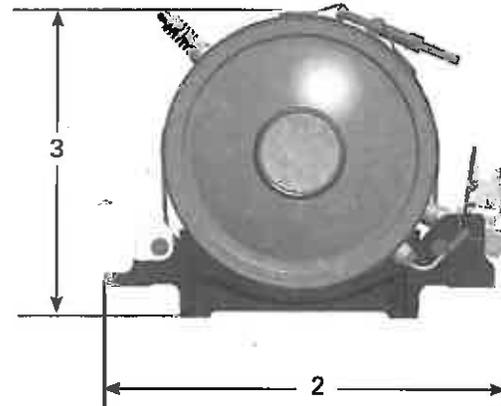
---



*Less than or equal to 82 kW (110 bhp)*  
**244.9 mm (9.6 in) DIAMETER BASE  
CONFIGURATION**

**Approximate Size and Weight**

- (1) Length — 802.5 mm (31.6 in)
  - (2) Width — 365 mm (14.3 in)
  - (3) Height — 279 mm (11 in)
- Weight — 34 kg (75 lbs)



*Greater than 82 kW (110 bhp)*  
**270.3 mm (10.6 in) DIAMETER BASE  
CONFIGURATION**

**Approximate Size and Weight**

- (1) Length — 828 mm (32.6 in)
  - (2) Width — 365 mm (14.3 in)
  - (3) Height — 300.5 mm (11.8 in)
- Weight — 37 kg (81.6 lbs)

### AFTERTREATMENT FEATURES

---

**Regeneration:** Passive regeneration completely transparent to the operator

**Mounting:** Extensive range of inlets and outlets, as well as remote and on-engine installations, provide flexibility for many installations.

**Service:** Service-free DPF for the emissions life of the engine

Available in 12V or 24V systems

### STANDARD EMISSIONS CONTROL EQUIPMENT

---

**DOC:** Diesel Oxidation Catalyst

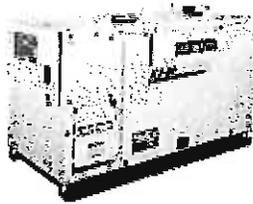
**DPF:** Diesel Particulate Filter

3" flex pipe connection kit with straight, 45°, and 90° options for flexibility

---

Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication. CAT, CATERPILLAR, their respective logos, ACERT, S-O-S, "Caterpillar Yellow" and the "Power Edge" trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

Kubota



**Kubota Generators  
KJ Series**

4-Pole Single Phase  
Output Range :  
(Single Phase) 12.5~19.6kVA

**Heavy-duty power generation**

A heavy-duty 4-pole series powered by Kubota diesel engines. Many features have been added to make the KJ Series much quieter, more efficient, and safer to use anywhere, any time.

CLOSE

for U.S.A.

MODEL	Unit	KJ-20	
Type	-	Revolving field, brushless AC generator	
Frequency	Hz	60	
Standby Output	kVA (kW)	20.6 (20.6)	
Prime Output	kVA (kW)	19.6 (19.6)	
Voltage - Single Phase	V	120/240	
Armature Connection	-	Series	
Phase / Wire	-	1-3	
Power Factor	-	1.0	
No. of Poles	-	4	
Insulation	Class	H	
Voltage Regulation	%	3.5 (No load to full load)	
Type of Coupling	-	Direct coupled	
<b>AMPS</b>			
Single Phase 120V	A	81.7	
Single Phase 240V	A	81.7	
<b>NO. OF RECEPTACLES</b>			
5-20RA (GFCI)	-	1	
L5-20R	-	1	
L6-30R	-	1	
CS-6369	-	1	
<b>TERMINAL</b>			
Terminal	-	Available	
<b>DIESEL ENGINE</b>			
Type	-	Vertical, liquid-cooled, 4-cycle diesel engine	
Model	-	V2203-M	
No. of Cylinders	-	4	
Bore x Stroke	mm (in.)	87 x 92.4 (3.43 x 3.64)	
Displacement	L (cu. in.)	2.197 (134.1)	
Engine Speed	rpm	1800	
Continuous Rated Output	kW (HP)	23.7 (31.8)	
Lubricant (API classification)	-	Above CF grade	
Oil Capacity	L (qts.)	9.5 (10.0)	
Coolant Capacity	L (qts.)	8.7 (9.2)	
Starting System	-	Electric - 12 volt DC	
<b>SET</b>			
Fuel	-	Diesel fuel No.2 (ASTM D975)	
Fuel Consumption	at Full Load	L/h (gal./h)	6.9 (1.82)
	at 3/4 Load	L/h (gal./h)	5.3 (1.4)
	at 1/2 Load	L/h (gal./h)	4.0 (1.06)
	at 1/4 Load	L/h (gal./h)	2.9 (0.77)
Fuel Tank Capacity	L (gal.)	37.0 (9.8)	
Continuous Operation Hours	at Full Load	h	5.4
	at 3/4 Load	h	7.0
	at 1/2 Load	h	9.3
	at 1/4 Load	h	12.8
Battery (Ah/5h)	-	12V (64Ah)	
Dimensions L x W x H	mm (in.)	1571 x 779 x 971 (61.9 x 30.7 x 38.2)	
Approx. Net Weight	kg (lbs.)	580 (1279)	
Sound Level (Full Load at 23 ft. [7m])	dB (A)	76.5	
Emergency Stop System	-	In case of abnormal: Oil pressure, water temperature, fan belt broken When the side cover and door open with running	

COPYRIGHT © 2008 KUBOTA ENGINE DIVISION. ALL RIGHTS RESERVED.

# Kubota

INDUSTRIAL DIESEL ENGINE

KUBOTA 03-M SERIES (4-cylinder)

## V2203-M-E3B



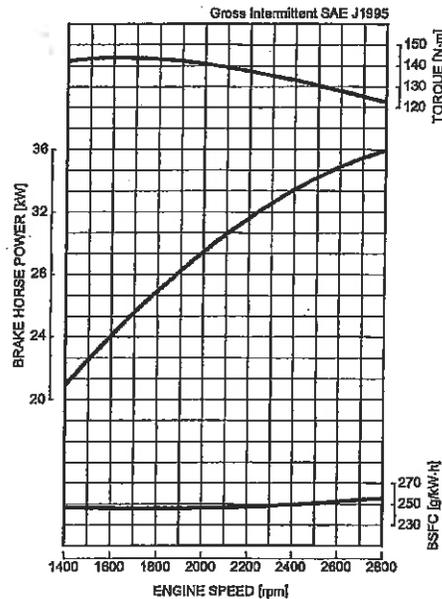
### RATED POWER

35.9kW@2800rpm



Photograph may show non-standard equipment.

### PERFORMANCE CURVE



### FEATURES and BENEFITS

#### Emissions

- The V2203-M engine complies with EPA Interim Tier 4 emissions regulations that are effective through the end of 2012. This engine also complies with EU Stage IIIA requirements that are effective through 2012 and beyond in the European market.

#### Durable Power

- The Kubota 03-M Series is well recognized for industrial applications. With numerous features such as a built-in solenoid, low fan position, and single side serviceability, this engine offers excellent performance characteristics and application flexibility.
- The cooling water passages between the cylinder bores, using Kubota's original casting technology as a countermeasure against heat load of high power density, provides both superior endurance and reliable engine characteristics.
- The V2203-M engine offers a seamless transition from Tier 2 to Interim Tier 4 by maintaining the same footprint and hard mounting points with only slight performance changes from the Tier 2 engine.

#### Clean and Quiet Power

- Kubota's original E-TVCS (Three Vortex Combustion System) has been improved. The airflow, combustion chamber and piston recess were optimized to provide a 50% lower particulate matter (PM) level, the same stringent level as above the 37kW class (EPA Interim Tier 4 Option 1).
- The half-float valve cover and MoS<sub>2</sub> coated pistons lower noise levels by 1.0-2.0 dBA over conventional diesel engines and provide reduced transmitted vibration from the valve area for better noise characteristics.

#### Option

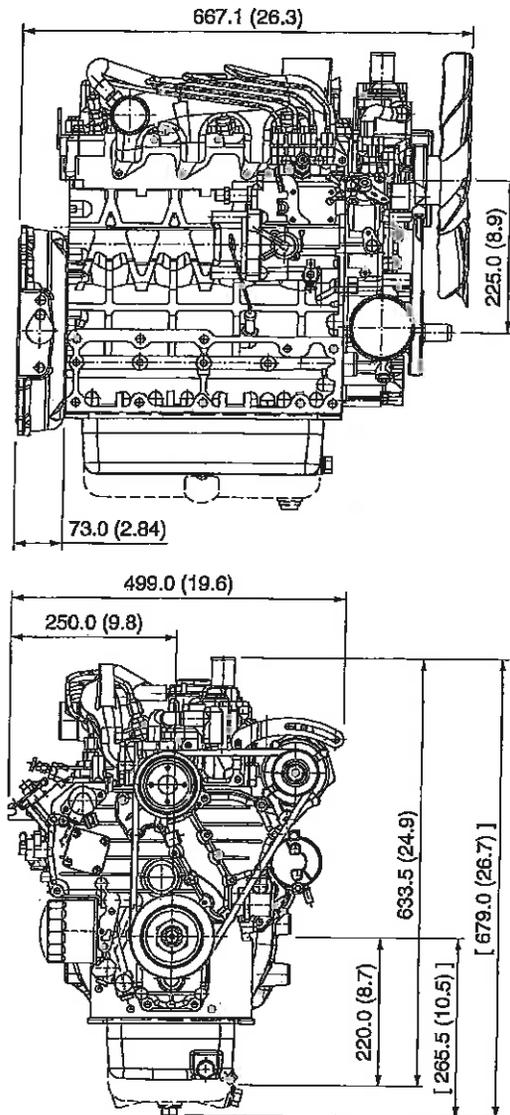
- The Kubota 03-M Series engines offer side power take-off (PTO), in response to the trend of increasing hydraulic control devices in industrial machines. It is possible to install a hydraulic pump at two side PTO locations.

## GENERAL SPECIFICATION

Model		V2203-M-E3B
Emission Regulation		Interim Tier 4 / Stage IIIA
Type		Vertical 4-cycle Liquid Cooled Diesel
Number of Cylinders		4
Bore	mm (in)	87 (3.43)
Stroke	mm (in)	92.4 (3.64)
Displacement	L (cu.in)	2.197 (134.1)
Combustion System		IDI
Intake System		Naturally Aspirated
Maximum Speed	rpm	2800
Output: Gross Intermittent	kW	35.9
	hp	48.1
	ps	48.8
Direction of Rotation		Counterclockwise Viewed on Flywheel
Oil Pan Capacity	L (gal)	7.6 (2.01) [US] / 9.5 (2.51) [EU]
Starter Capacity	V-kW	12-1.4
Alternator Capacity	V-A	12-40
Length	mm (in)	667.1 (26.3)
Width	mm (in)	499.0 (19.6)
Height (1)	mm (in)	633.5 (24.9) [US] / 679.0 (26.7) [EU]
Height (2)	mm (in)	220.0 (8.7) [US] / 265.5 (10.5) [EU]
Dry Weight	kg (lb)	180.0 (396.9)

\*Specification is subject to change without notice.  
 \*Output: Gross Intermittent SAE J1995  
 \*Dry weight is according to Kubota's standard specification.  
 When specification varies, the weight will vary accordingly.

## DIMENSIONS

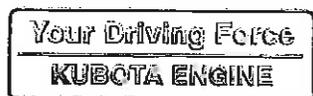


[ ] EU spec



**KUBOTA Corporation**

2-47, Shikitsuhgashi 1-chome, Naniwa-ku, Osaka, 556-8601 Japan  
 Fax: 06-6648-3521  
<http://www.engine.kubota.ne.jp>



## **Attachment O**

### **Monitoring/Recordkeeping/Reporting/Testing Plans**

**Attachment O**

**Proposed Monitoring, Recordkeeping, Reporting, and Testing Plan  
Clarksburg Bulk Cement Plant  
O-Tex Pumping LLC  
Harrison County, West Virginia**

The Facility will perform the following to demonstrate compliance with emission limits and operating parameters:

1. Monitor and maintain records of the amount of cement processed.
2. Monitor and maintain operations of the dust collector unit to ensure capture efficiency of 98.88% or greater.
3. Monitor and maintain records of diesel fuel usage for the engines.

These records will be maintained on site or in a readily available off-site location for a period of 5 years.

# Attachment P

## Public Notice

**Attachment P**

**Air Quality Permit Notice  
Notice of Application  
Clarksburg Bulk Cement Plant  
O-TEX PUMPING LLC  
Harrison County, West Virginia**

Notice is given that O-Tex Pumping LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a New Source Review Permit 45CSR13 for a cement bulk facility located at the intersection of Shadow Hills Dr and Milford St in Harrison County, West Virginia.

The latitude and longitude coordinates are: 39.261434 degrees N and -80.379749 degrees W

The applicant estimates the potential to discharge the following Regulated Air Pollutants will be:

Pollutants	TOTALS (tpy):
VOC	1.9410
NO <sub>x</sub>	5.1456
CO <sub>2e</sub>	887.7000
CO	6.3554
SO <sub>2</sub>	1.5825
PM <sub>2.5</sub>	0.0000
PM <sub>10</sub>	1.6335
PM	3.4331
Total HAPs	0.0226

Startup in operation is planned to begin upon permit issuance. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, 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 1227, during normal business hours.

Dated this the \_\_\_ day of \_\_\_\_\_, 2015

By: O-Tex Pumping LLC  
Doug Rather  
Senior Partner  
7303 N Highway 81  
Duncan, OK 73533-8794

## **Attachment R**

### **Authority Forms**

**Attachment R  
AUTHORITY OF CORPORATION  
OR OTHER BUSINESS ENTITY (DOMESTIC OR FOREIGN)**

TO: The West Virginia Department of Environmental Protection,  
Division of Air Quality

DATE: November 24, 2014

ATTN.: Director

Corporation's / other business entity's Federal Employer I.D. Number 230551389

The undersigned hereby files with the West Virginia Department of Environmental Protection, Division of Air Quality, a permit application and hereby certifies that the said name is a trade name which is used in the conduct of an incorporated business or other business entity.

Further, the corporation or the business entity certifies as follows:

(1) Doug Rather (is/are) the authorized representative(s) and in that capacity may represent the interest of the corporation or the business entity and may obligate and legally bind the corporation or the business entity.

(2) The corporation or the business entity is authorized to do business in the State of West Virginia.

(3) If the corporation or the business entity changes its authorized representative(s), the corporation or the business entity shall notify the Director of the West Virginia Department of Environmental Protection, Division of Air Quality, immediately upon such change.

  
\_\_\_\_\_  
President or Other Authorized Officer (Senior Partner - Owner)  
(Vice President, Secretary, Treasurer or other  
official in charge of a principal business function of  
the corporation or the business entity)

(If not the President, then the corporation or the business entity must submit certified minutes or bylaws stating legal authority of other authorized officer to bind the corporation or the business entity).

\_\_\_\_\_  
Secretary

O-Tex Pumping, LLC

\_\_\_\_\_  
Name of Corporation or business entity

## Application Fee