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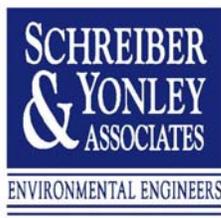
# **Renewal Title V Operating Permit Application**

**Earthgrains Baking Companies, Inc.  
Huntington, WV**

**June 2010**

**Located at:  
1300 Adams Avenue  
Huntington, West Virginia 25704**

**Project No. 090165**



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**TITLE V PERMIT APPLICATION**

**GENERAL FORMS**



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0475

www.wvdep.org/daq

TITLE V PERMIT APPLICATION - GENERAL FORMS

Section 1: General Information

Form with 10 sections: 1. Name of Applicant, 2. Facility Name or Location, 3. DAQ Plant ID No., 4. Federal Employer ID No. (FEIN), 5. Permit Application Type, 6. Type of Business Entity, 7. Is the Applicant the..., 8. Number of onsite employees, 9. Governmental Code, 10. Business Confidentiality Claims.

<b>11. Mailing Address</b>		
Street or P.O. Box: 1300 Adams Avenue		
City: Huntington	State: WV	Zip: 25704-
Telephone Number: (304) 523-8411	Fax Number: (304) 525-9268	

<b>12. Facility Location</b>		
Street: 1300 Adams Avenue	City: Huntington	County: Cabell
UTM Easting: 4252 km	UTM Northing: 371 km	Zone: <input checked="" type="checkbox"/> 17 or <input type="checkbox"/> 18
<b>Directions:</b> Interstate 64 to Adams Avenue exit; between Adams and Washington Avenue and between 13 <sup>th</sup> Street West and 14 <sup>th</sup> Street West		
<b>Portable Source?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
<b>Is facility located within a nonattainment area?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>If yes, for what air pollutants?</b> PM <sub>2.5</sub>	
<b>Is facility located within 50 miles of another state?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>If yes, name the affected state(s).</b> Ohio Kentucky	
<b>Is facility located within 100 km of a Class I Area<sup>1</sup>?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  <b>If no, do emissions impact a Class I Area<sup>1</sup>?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>If yes, name the area(s).</b>	
<sup>1</sup> Class I areas include Dolly Sods and Otter Creek Wilderness Areas in West Virginia, and Shenandoah National Park and James River Face Wilderness Area in Virginia.		

<b>13. Contact Information</b>		
<b>Responsible Official:</b> Charles Heiner		<b>Title:</b> Plant Manager
<b>Street or P.O. Box:</b> 1300 Adams Avenue		
<b>City:</b> Huntington	<b>State:</b> WV	<b>Zip:</b> 25704-
<b>Telephone Number:</b> (304) 523-8411	<b>Fax Number:</b> (304) 525-9268	
<b>E-mail address:</b> charles.heiner@saralee.com		
<b>Environmental Contact:</b> Calvin Stover		<b>Title:</b> Compliance Manager
<b>Street or P.O. Box:</b> 1300 Adams Avenue		
<b>City:</b> Huntington	<b>State:</b> WV	<b>Zip:</b> 25704-
<b>Telephone Number:</b> (304) 523-8411	<b>Fax Number:</b> (304) 525-9268	
<b>E-mail address:</b> calvin.stover@saralee.com		
<b>Application Preparer:</b> Jennifer Markwardt		<b>Title:</b> Environmental Engineer
<b>Company:</b> Schreiber, Yonley & Associates		
<b>Street or P.O. Box:</b> 16252 Westwoods Business Park Drive		
<b>City:</b> Ellisville	<b>State:</b> MO	<b>Zip:</b> 63021-
<b>Telephone Number:</b> (636) 256-5652	<b>Fax Number:</b> (636) 256-7202	
<b>E-mail address:</b> jenniferm@syaeng.com		

**14. Facility Description**

List all processes, products, NAICS and SIC codes for normal operation, in order of priority. Also list any process, products, NAICS and SIC codes associated with any alternative operating scenarios if different from those listed for normal operation.

Process	Products	NAICS	SIC
Commercial Bakery	Bread, buns, rolls	311812	2051

**Provide a general description of operations.**

Earthgrains operates a commercial bread baking facility using flour, water, yeast, salt and other additive ingredients to manufacture bread, buns and rolls. The principal pollutant emitted from bread baking is VOC, emitted from the baking ovens as a result of yeast fermentation (of process sugars) and forming ethanol, carbon dioxide and other by-products. The baking ovens fire natural gas, and therefore additionally emit criteria pollutants associated with combustion. Ancillary operations include pneumatic flour transfer to bulk storage silos, natural gas fired boilers (steam heat), emergency generators, bulk edible oil storage and storage tanks (gasoline/diesel) for vehicle refueling.

- 15. Provide an **Area Map** showing plant location as **ATTACHMENT A**.
- 16. Provide a **Plot Plan(s)**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is located as **ATTACHMENT B**. For instructions, refer to "Plot Plan - Guidelines."
- 17. Provide a detailed **Process Flow Diagram(s)** showing each process or emissions unit as **ATTACHMENT C**. Process Flow Diagrams should show all emission units, control equipment, emission points, and their relationships.

**Section 2: Applicable Requirements**

<b>18. Applicable Requirements Summary</b>	
Instructions: Mark all applicable requirements.	
<input checked="" type="checkbox"/> SIP	<input type="checkbox"/> FIP
<input checked="" type="checkbox"/> Minor source NSR (45CSR13)	<input type="checkbox"/> PSD (45CSR14)
<input checked="" type="checkbox"/> NESHAP (45CSR15)	<input type="checkbox"/> Nonattainment NSR (45CSR19)
<input type="checkbox"/> Section 111 NSPS	<input checked="" type="checkbox"/> Section 112(d) MACT standards
<input type="checkbox"/> Section 112(g) Case-by-case MACT	<input type="checkbox"/> 112(r) RMP
<input type="checkbox"/> Section 112(i) Early reduction of HAP	<input type="checkbox"/> Consumer/commercial prod. reqts., section 183(e)
<input type="checkbox"/> Section 129 Standards/Reqts.	<input checked="" type="checkbox"/> Stratospheric ozone (Title VI)
<input type="checkbox"/> Tank vessel reqt., section 183(f)	<input checked="" type="checkbox"/> Emissions cap 45CSR§30-2.6.1
<input type="checkbox"/> NAAQS, increments or visibility (temp. sources)	<input type="checkbox"/> 45CSR27 State enforceable only rule
<input checked="" type="checkbox"/> 45CSR4 State enforceable only rule	<input type="checkbox"/> Acid Rain (Title IV, 45CSR33)
<input type="checkbox"/> Emissions Trading and Banking (45CSR28)	<input type="checkbox"/> Compliance Assurance Monitoring (40CFR64)
<input type="checkbox"/> NO <sub>x</sub> Budget Trading Program Non-EGUs (45CSR1)	<input type="checkbox"/> NO <sub>x</sub> Budget Trading Program EGUs (45CSR26)

<b>19. Non Applicability Determinations</b>
<p><b>List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.</b></p> <p>45-1 – No “NO<sub>x</sub> Budget Units” as defined by regulation</p> <p>45-2A – Fuel burning units have capacities less than 10 MMBTU/hr</p> <p>45-3 – Facility is not a “hot mix asphalt plant”</p> <p>45-5 – Facility not involved in coal handling or preparation</p> <p>45-6 – Facility not involved in the combustion of refuse</p> <p>45-8 – Emissions of SO<sub>x</sub>/PM<sub>10</sub> insignificant; facility not located in SO<sub>x</sub>/PM<sub>10</sub> nonattainment area</p> <p>45-10 – Ovens emit &lt;500 lb/yr SO<sub>x</sub> (4.1.e); boilers &lt;10 MMBtu/hr (10.1)</p> <p>45-11 – Facility not located in region with Priority I or II pollutant as defined</p> <p>45-14 – Facility VOC PTE less than 250 tpy (PSD)</p> <p>45-16 and 40 CFR 60 NSPS – No applicable 40 CFR 60 NSPS</p> <p>45-17 – Specifically not applicable where covered by 45-2 and 45-7</p> <p>45-18 – Facility not involved in solid waste incineration</p> <p>45-19 – Facility is not major for nonattainment pollutant (PM<sub>2.5</sub>)</p> <p>45-20 – Permit emission limits not governed by stack heights</p> <p>45-22 – Management fees governed by 45-30 for Title V facility</p>
<input checked="" type="checkbox"/> Permit Shield

**19. Non Applicability Determinations (Continued)** - Attach additional pages as necessary.

**List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.**

45-23 – Facility not MSW landfill

45-25 – Facility not a TSD facility

45-26 – Emergency generators do not produce electricity for sale

45-27 – Facility does not have any sources that meet the category descriptions in the rule

45-33 – Facility not an acid rain source

45-42 – Facility emits de minimis amounts of greenhouse gases

40 CFR 64 – Units above the major source threshold not subject to control requirements

40 CFR 68 – No storage of listed substances above threshold criteria

Permit Shield

**20. Facility-Wide Applicable Requirements**

**List all facility-wide applicable requirements. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements).**

- 45-4-3.1 – No objectionable odor to be caused by the discharge of air pollutants (state-enforceable only)
- 45-6-3.1 – Open burning prohibited
- 45-7-5.2, 45-13 (R13-2005B, Condition B.2) – Particulate matter control of plant premises and roadways
- 45-11-5.2 – Standby plan for reducing emissions
- 45-13-6.1, 45-7-8.1 – Future source testing when and where prescribed by WVDEP
- 45-21-40 – RACT emission limits and controls set in Permit R13-2005B
- 45-29-4.1 – Annual emissions statement for certain sources (VOC>25 tpy, Cabell)
- 45-30 – TV Operating Permit requirements
- 45-30-8.7 – Certified Emissions Statement accounting for emissions of regulated pollutants
- 40 CFR 61 and 45CSR15 – Asbestos demolition or renovation
- 40 CFR 82 Subpart F – Stratospheric Ozone Protection (Recycling and Emission Reduction)

Permit Shield

**For all facility-wide applicable requirements listed above, provide monitoring/testing / recordkeeping / reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)**

- 45-4-3.1 – Facility will investigate where notified by WVDEP according to 45-4-5.1
- 45-6-3.1 – Open burning not conducted
- 45-7-5.2 – Facility shall water loading areas as necessary to control fugitive dust
- 45-13-6.1, 45-7-8.1 – Facility will conduct future source testing where required by WVDEP
- 45-11-5.2 – Facility shall prepare a plan for reducing emissions if requested by WVDEP
- 45-21-40 – Facility shall comply with applicable permit requirements
- 45-29-4.1 – Emissions statements submitted as required
- 45-30 – Facility complies with requirements of the TV Operating Permit
- 45-30-8.7 – Certified Emissions Statements submitted as required
- 40 CFR 61 and 45CSR15 – If asbestos removal projects are undertaken, the requirements of Subpart M will be followed
- 40 CFR 82 Subpart F – Facility complies with Subpart F requirements for Class I and Class II substances

**Are you in compliance with all facility-wide applicable requirements?**  Yes  No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

**20. Facility-Wide Applicable Requirements (Continued) - Attach additional pages as necessary.**

**List all facility-wide applicable requirements. For each applicable requirement, include the rule citation and/or permit with the condition number.**

Permit Shield

**For all facility-wide applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)**

**Are you in compliance with all facility-wide applicable requirements?**  Yes  No

**If no, complete the Schedule of Compliance Form as ATTACHMENT F.**





**Section 3: Facility-Wide Emissions**

<b>23. Facility-Wide Emissions Summary [Tons per Year]</b>	
Criteria Pollutants	Potential Emissions
Carbon Monoxide (CO)	8.74
Nitrogen Oxides (NO <sub>x</sub> )	10.99
Lead (Pb)	0.00
Particulate Matter (PM <sub>2.5</sub> ) <sup>1</sup>	1.81
Particulate Matter (PM <sub>10</sub> ) <sup>1</sup>	8.61
Total Particulate Matter (TSP)	8.61
Sulfur Dioxide (SO <sub>2</sub> )	0.08
Volatile Organic Compounds (VOC)	213.8
Hazardous Air Pollutants <sup>2</sup>	Potential Emissions
Methanol	1.63
Regulated Pollutants other than Criteria and HAP	Potential Emissions
N/A	
<sup>1</sup> PM <sub>2.5</sub> and PM <sub>10</sub> are components of TSP. <sup>2</sup> For HAPs that are also considered PM or VOCs, emissions should be included in both the HAPs section and the Criteria Pollutants section.	

**Section 4: Insignificant Activities**

<b>24. Insignificant Activities (Check all that apply)</b>	
<input checked="" type="checkbox"/>	1. Air compressors and pneumatically operated equipment, including hand tools.
<input checked="" type="checkbox"/>	2. Air contaminant detectors or recorders, combustion controllers or shutoffs.
<input checked="" type="checkbox"/>	3. Any consumer product used in the same manner as in normal consumer use, provided the use results in a duration and frequency of exposure which are not greater than those experienced by consumer, and which may include, but not be limited to, personal use items; janitorial cleaning supplies, office supplies and supplies to maintain copying equipment.
<input checked="" type="checkbox"/>	4. Bathroom/toilet vent emissions.
<input checked="" type="checkbox"/>	5. Batteries and battery charging stations, except at battery manufacturing plants.
<input checked="" type="checkbox"/>	6. Bench-scale laboratory equipment used for physical or chemical analysis, but not lab fume hoods or vents. Many lab fume hoods or vents might qualify for treatment as insignificant (depending on the applicable SIP) or be grouped together for purposes of description.
<input type="checkbox"/>	7. Blacksmith forges.
<input checked="" type="checkbox"/>	8. Boiler water treatment operations, not including cooling towers.
<input checked="" type="checkbox"/>	9. Brazing, soldering or welding equipment used as an auxiliary to the principal equipment at the source.
<input type="checkbox"/>	10. CO <sub>2</sub> lasers, used only on metals and other materials which do not emit HAP in the process.
<input checked="" type="checkbox"/>	11. Combustion emissions from propulsion of mobile sources, except for vessel emissions from Outer Continental Shelf sources.
<input checked="" type="checkbox"/>	12. Combustion units designed and used exclusively for comfort heating that use liquid petroleum gas or natural gas as fuel.
<input checked="" type="checkbox"/>	13. Comfort air conditioning or ventilation systems not used to remove air contaminants generated by or released from specific units of equipment.
<input type="checkbox"/>	14. Demineralized water tanks and demineralizer vents.
<input type="checkbox"/>	15. Drop hammers or hydraulic presses for forging or metalworking.
<input type="checkbox"/>	16. Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.
<input type="checkbox"/>	17. Emergency (backup) electrical generators at residential locations.
<input type="checkbox"/>	18. Emergency road flares.
<input checked="" type="checkbox"/>	<p>19. Emission units which do not have any applicable requirements and which emit criteria pollutants (CO, NO<sub>x</sub>, SO<sub>2</sub>, VOC and PM) into the atmosphere at a rate of less than 1 pound per hour and less than 10,000 pounds per year aggregate total for each criteria pollutant from all emission units.</p> <p>Please specify all emission units for which this exemption applies along with the quantity of criteria pollutants emitted on an hourly and annual basis:</p> <p><u>Boilers – July 2004 TV application, calculations in Attachment I</u></p> <p><u>Storage Tanks – July 2004 TV application; calculations in Attachment I</u></p> <p><u>Solvent Parts Washer – Calculations in Attachment I</u></p> <p><u>Water heaters &lt;300 MBtu/hr – Calculations in Attachment I</u></p> <p><u>Water heater 3.0 MMBtu/hr – Calculations in Attachment I</u></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

<b>24. Insignificant Activities (Check all that apply)</b>	
<input type="checkbox"/>	<p>20. Emission units which do not have any applicable requirements and which emit hazardous air pollutants into the atmosphere at a rate of less than 0.1 pounds per hour and less than 1,000 pounds per year aggregate total for all HAPs from all emission sources. This limitation cannot be used for any source which emits dioxin/furans nor for toxic air pollutants as per 45CSR27.</p> <p>Please specify all emission units for which this exemption applies along with the quantity of hazardous air pollutants emitted on an hourly and annual basis:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
<input type="checkbox"/>	21. Environmental chambers not using hazardous air pollutant (HAP) gases.
<input checked="" type="checkbox"/>	22. Equipment on the premises of industrial and manufacturing operations used solely for the purpose of preparing food for human consumption.
<input type="checkbox"/>	23. Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
<input type="checkbox"/>	24. Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
<input type="checkbox"/>	25. Equipment used for surface coating, painting, dipping or spray operations, except those that will emit VOC or HAP.
<input checked="" type="checkbox"/>	26. Fire suppression systems.
<input type="checkbox"/>	27. Firefighting equipment and the equipment used to train firefighters.
<input type="checkbox"/>	28. Flares used solely to indicate danger to the public.
<input checked="" type="checkbox"/>	29. Fugitive emission related to movement of passenger vehicle provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.
<input type="checkbox"/>	30. Hand-held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation.
<input type="checkbox"/>	31. Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning or machining wood, metal or plastic.
<input type="checkbox"/>	32. Humidity chambers.
<input type="checkbox"/>	33. Hydraulic and hydrostatic testing equipment.
<input type="checkbox"/>	34. Indoor or outdoor kerosene heaters.
<input type="checkbox"/>	35. Internal combustion engines used for landscaping purposes.
<input type="checkbox"/>	36. Laser trimmers using dust collection to prevent fugitive emissions.
<input type="checkbox"/>	37. Laundry activities, except for dry-cleaning and steam boilers.
<input type="checkbox"/>	38. Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
<input type="checkbox"/>	39. Oxygen scavenging (de-aeration) of water.
<input type="checkbox"/>	40. Ozone generators.

<b>24. Insignificant Activities (Check all that apply)</b>	
<input checked="" type="checkbox"/>	41. Plant maintenance and upkeep activities (e.g., grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots) provided these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and not otherwise triggering a permit modification. (Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must still get a permit if otherwise requested.)
<input type="checkbox"/>	42. Portable electrical generators that can be moved by hand from one location to another. "Moved by Hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device.
<input checked="" type="checkbox"/>	43. Process water filtration systems and demineralizers.
<input checked="" type="checkbox"/>	44. Repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating or de-greasing (solvent metal cleaning) activities, and not otherwise triggering a permit modification.
<input checked="" type="checkbox"/>	45. Repairs or maintenance where no structural repairs are made and where no new air pollutant emitting facilities are installed or modified.
<input checked="" type="checkbox"/>	46. Routine calibration and maintenance of laboratory equipment or other analytical instruments.
<input type="checkbox"/>	47. Salt baths using nonvolatile salts that do not result in emissions of any regulated air pollutants. Shock chambers.
<input type="checkbox"/>	48. Shock chambers.
<input type="checkbox"/>	49. Solar simulators.
<input checked="" type="checkbox"/>	50. Space heaters operating by direct heat transfer.
<input type="checkbox"/>	51. Steam cleaning operations.
<input type="checkbox"/>	52. Steam leaks.
<input type="checkbox"/>	53. Steam sterilizers.
<input type="checkbox"/>	54. Steam vents and safety relief valves.
<input checked="" type="checkbox"/>	55. Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized.
<input checked="" type="checkbox"/>	56. Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP. Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids should be based on size limits such as storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.
<input checked="" type="checkbox"/>	57. Such other sources or activities as the Director may determine.
<input type="checkbox"/>	58. Tobacco smoking rooms and areas.
<input type="checkbox"/>	59. Vents from continuous emissions monitors and other analyzers.

*Section 5: Emission Units, Control Devices, and Emission Points*

<b>25. Equipment Table</b>
Fill out the <b>Title V Equipment Table</b> and provide it as <b>ATTACHMENT D</b> .
<b>26. Emission Units</b>
For each emission unit listed in the <b>Title V Equipment Table</b> , fill out and provide an <b>Emission Unit Form</b> as <b>ATTACHMENT E</b> .
For each emission unit not in compliance with an applicable requirement, fill out a <b>Schedule of Compliance Form</b> as <b>ATTACHMENT F</b> .
<b>27. Control Devices</b>
For each control device listed in the <b>Title V Equipment Table</b> , fill out and provide an <b>Air Pollution Control Device Form</b> as <b>ATTACHMENT G</b> .
For any control device that is required on an emission unit in order to meet a standard or limitation for which the potential pre-control device emissions of an applicable regulated air pollutant is greater than or equal to the Title V Major Source Threshold Level, refer to the <b>Compliance Assurance Monitoring (CAM) Form(s)</b> for CAM applicability. Fill out and provide these forms, if applicable, for each Pollutant Specific Emission Unit (PSEU) as <b>ATTACHMENT H</b> .

**Section 6: Certification of Information**

**28. Certification of Truth, Accuracy and Completeness and Certification of Compliance**

*Note: This Certification must be signed by a responsible official. The **original**, signed in **blue ink**, must be submitted with the application. Applications without an **original** signed certification will be considered as incomplete.*

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

I certify that I am a responsible official (as defined at 45CSR§30-2.38) and am accordingly authorized to make this submission on behalf of the owners or operators of the source described in this document and its attachments. I certify under penalty of law that I have personally examined and am familiar with the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine and/or imprisonment.

**b. 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.

**Responsible official (type or print)**

Name: Charles Heiner	Title: Plant Manager
----------------------	----------------------

**Responsible official's signature:**

Signature: \_\_\_\_\_ Signature Date: \_\_\_\_\_  
 (Must be signed and dated in blue ink)

**Note: Please check all applicable attachments included with this permit application:**

<input checked="" type="checkbox"/>	ATTACHMENT A: Area Map
<input checked="" type="checkbox"/>	ATTACHMENT B: Plot Plan(s)
<input checked="" type="checkbox"/>	ATTACHMENT C: Process Flow Diagram(s)
<input checked="" type="checkbox"/>	ATTACHMENT D: Equipment Table
<input checked="" type="checkbox"/>	ATTACHMENT E: Emission Unit Form(s)
<input type="checkbox"/>	ATTACHMENT F: Schedule of Compliance Form(s)
<input checked="" type="checkbox"/>	ATTACHMENT G: Air Pollution Control Device Form(s)
<input checked="" type="checkbox"/>	ATTACHMENT H: Compliance Assurance Monitoring (CAM) Form(s)

**All of the required forms and additional information can be found and downloaded from, the DEP website at [www.wvdep.org/dag](http://www.wvdep.org/dag), requested by phone (304) 926-0475, and/or obtained through the mail.**

**ATTACHMENT A**

**AREA MAP**

ATTACHMENT A  
AREA MAP  
EARTHGRAINS BAKING COMPANIES, INC.

USGS 3 km NE of Westmoreland, West Virginia, United States 01 Jul 1985

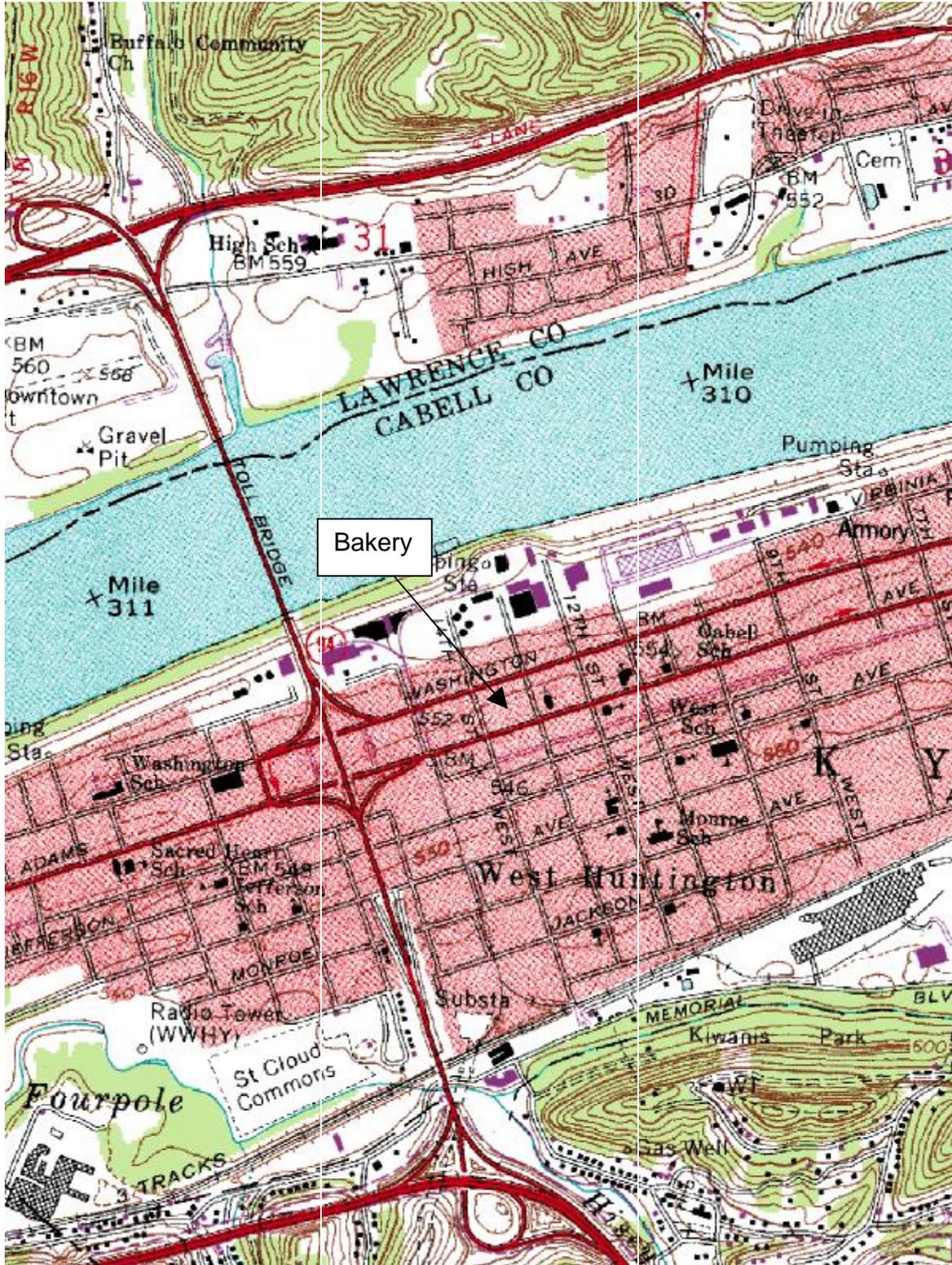
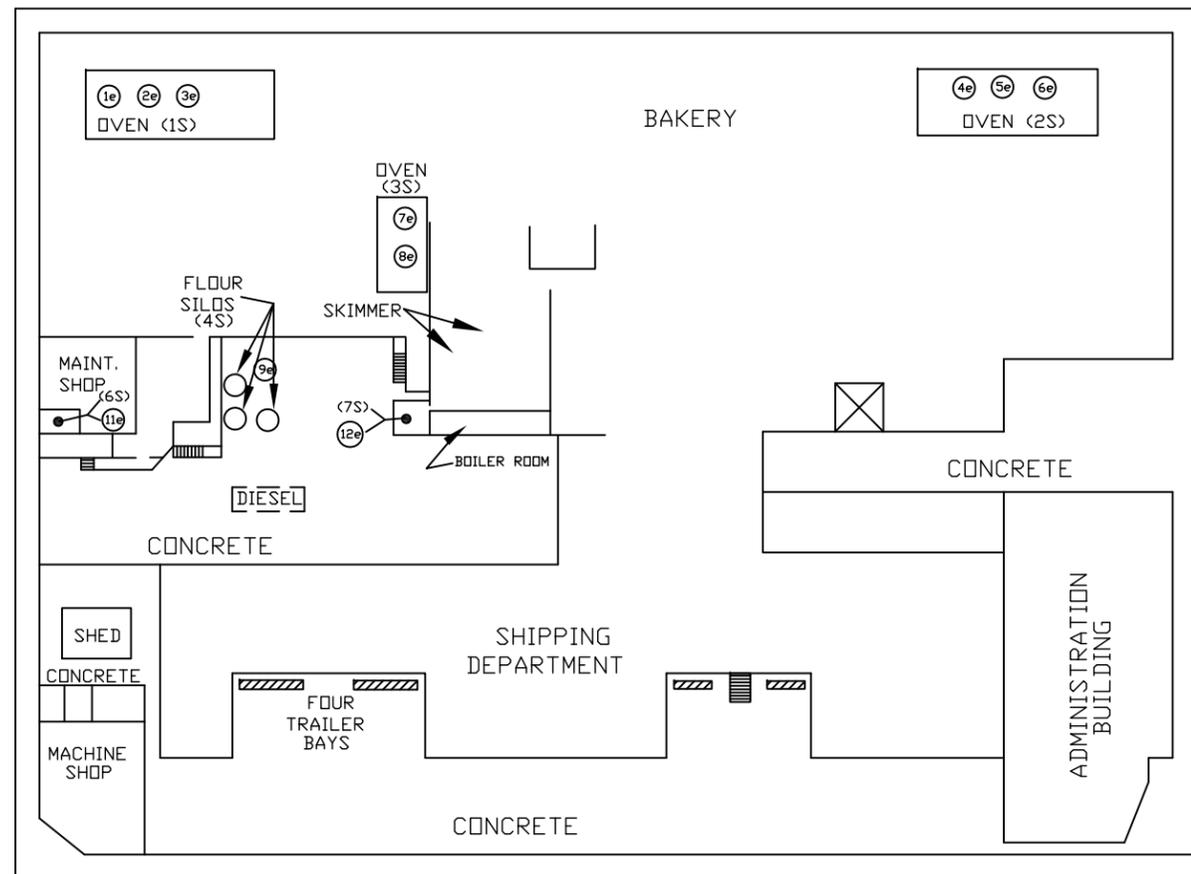


Image courtesy of the U.S. Geological Survey

**ATTACHMENT B**

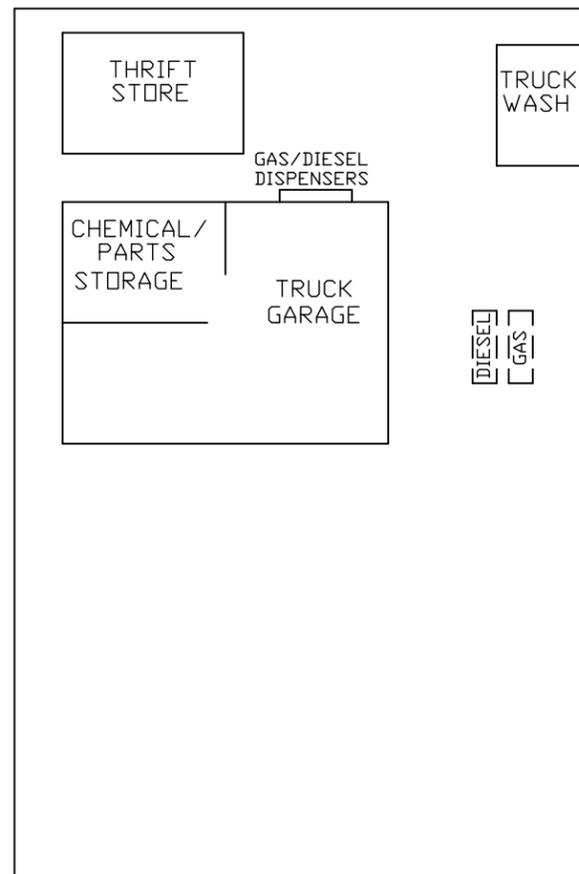
**PLOT MAP**

WASHINGTON AVENUE



14TH STREET WEST

13TH STREET WEST

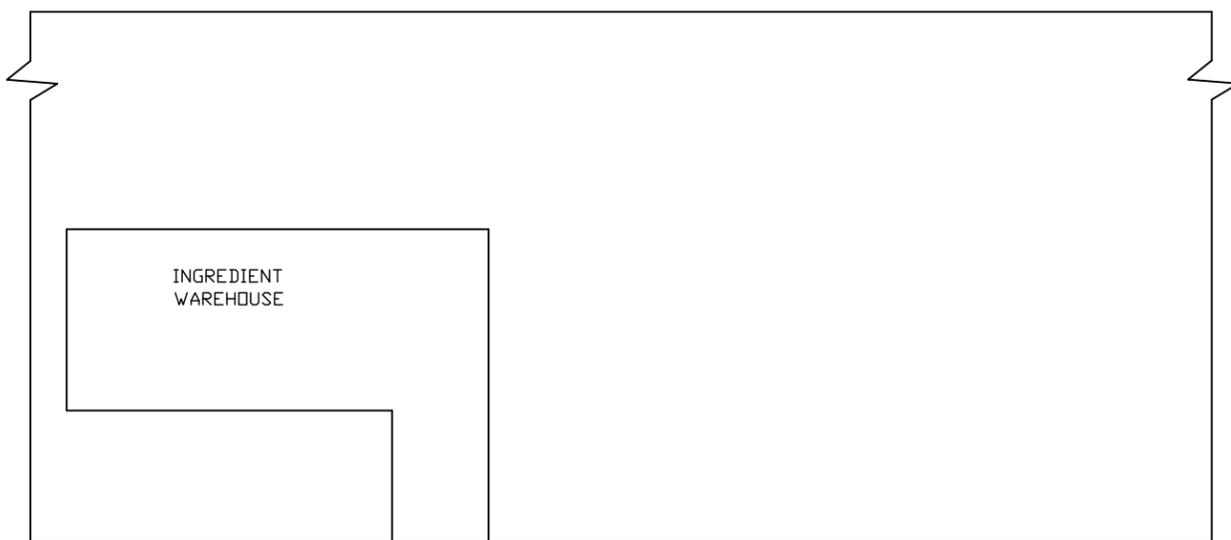


LEGEND

- ⊕ EMISSION POINT LOCATIONS
- [---] UNDERGROUND STORAGE TANK
- 5S/10e are fugitive emissions not shown on map



ADAMS AVENUE



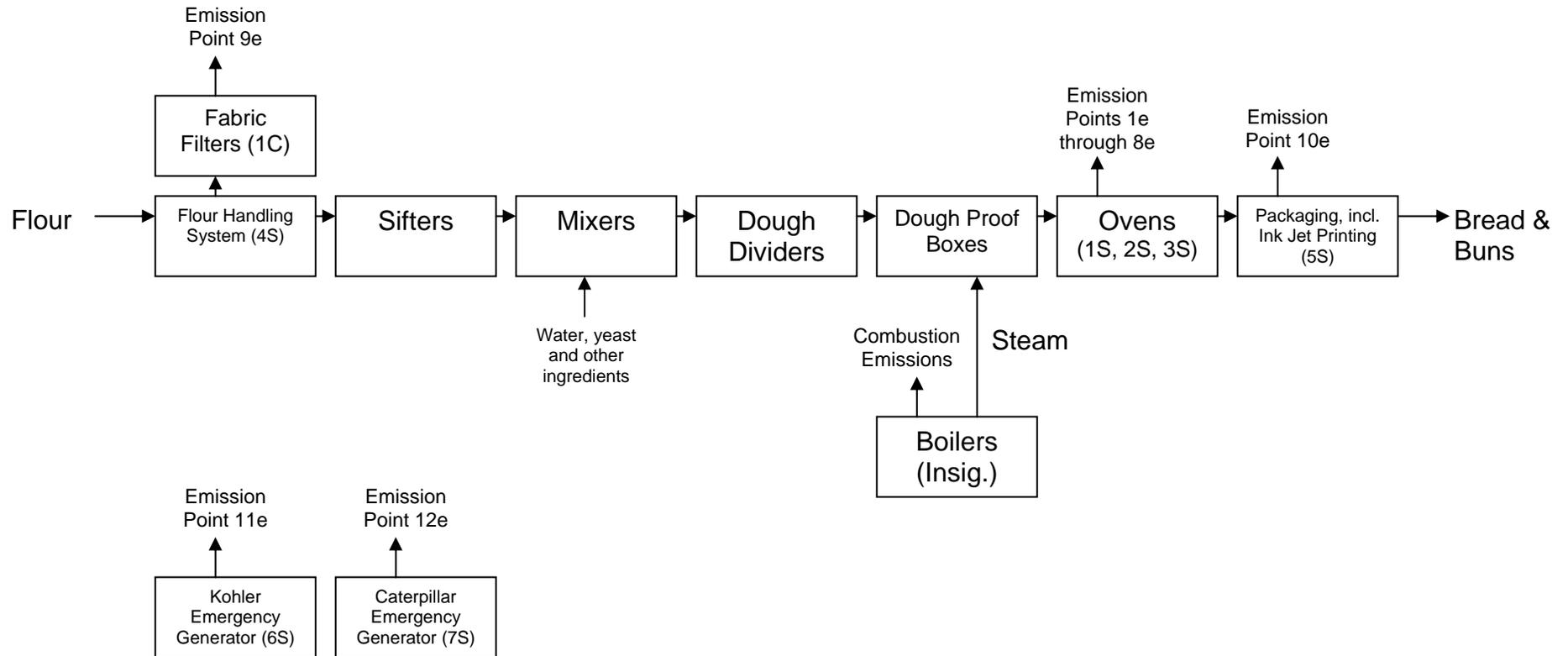
FIFTH AVENUE WEST

Coordinates - UTM 4252 Km E; 371 Km N; Zone 17  
Elevation - 550 ft

SITE PLAN MAP EARTHGRAINS BAKING COMPANIES, INC. 1300 ADAMS AVENUE HUNTINGTON, WV 25704 Based on a drawing made by Secor International Incorporated.				ATTACHMENT B PLOT PLAN APPROX. SCALE: 1" = 65'		<b>SCHREIBER &amp; YONLEY ASSOCIATES</b> ENVIRONMENTAL ENGINEERS
CHECKED BY: JM	DRAWN BY: BAH	DATE DRAWN: 05-14-10	PROJECT #: SRLHTN090165	REVISION #		

**ATTACHMENT C**  
**PROCESS FLOW DIAGRAM**

**ATTACHMENT C  
PROCESS FLOW DIAGRAM  
EARTHGRAINS BAKING COMPANIES, INC.**



**ATTACHMENT D**  
**EQUIPMENT TABLE**



**ATTACHMENT E**  
**EMISSION UNIT FORMS**

## ATTACHMENT E - Emission Unit Form

***Emission Unit Description***

<b>Emission unit ID number:</b> 1S	<b>Emission unit name:</b> 58 Tray Direct Fired Baker Perkins 970 Oven	<b>List any control devices associated with this emission unit:</b> N/A
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**Provide a description of the emission unit (type, method of operation, design parameters, etc.):**  
Natural gas, direct fired, bread baking oven

<b>Manufacturer:</b> Baker Perkins	<b>Model number:</b> 970	<b>Serial number:</b> N/A
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<b>Construction date:</b> 1991	<b>Installation date:</b> 1991	<b>Modification date(s):</b> 2001
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**Design Capacity (examples: furnaces - tons/hr, tanks - gallons):**  
15,000 lb/hr (baked goods)

<b>Maximum Hourly Throughput:</b> 15,000 lb/hr (baked goods)	<b>Maximum Annual Throughput:</b> 65,700 tpy (limited to 39,000 tpy)	<b>Maximum Operating Schedule:</b> 8,760 hr/yr
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***Fuel Usage Data (fill out all applicable fields)***

<b>Does this emission unit combust fuel?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>If yes, is it?</b>  <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired
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<b>Maximum design heat input and/or maximum horsepower rating:</b> 5.940 MM Btu/hr	<b>Type and Btu/hr rating of burners:</b> Ribbon type 105 burners
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**List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.**  
Natural gas – 0.005940 MMCF/hr, 52.03 MMCF/yr (limited to 52 MMCF/yr)

**Describe each fuel expected to be used during the term of the permit.**

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural gas	<1%	Negligible	1,000 Btu/scf

<b><i>Emissions Data</i></b>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	0.50	2.18
Nitrogen Oxides (NO <sub>x</sub> )	0.594	2.60
Lead (Pb)	0.00	0.00
Particulate Matter (PM <sub>2.5</sub> )	0.045	0.20
Particulate Matter (PM <sub>10</sub> )	0.045	0.20
Total Particulate Matter (TSP)	0.045	0.20
Sulfur Dioxide (SO <sub>2</sub> )	0.004	0.02
Volatile Organic Compounds (VOC)	45.8	119.1
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

**List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).**

Source Testing of June 27, 29 and 30, 1994  
Source Testing of November 16 and 17, 1994  
Source Testing of May 17 and 18, 1995  
AP-42, Section 1.4 (July 1998)

**Applicable Requirements**

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

- 45-7-3.1, 45-13 (R13-2005B, Condition B.2) – Visible emissions from process operations
- 45-7-4.1, 45-13 (R13-2005B, Condition B.2) – Particulate matter limit from process operations
- 45-7-4.12 – Stack flow requirements
- 45-13 (R13-2005B, Condition A.2) – Maximum emissions for criteria pollutants (except PM)
- 45-13 (R13-2005B, Condition A.1) – Maximum production rates
- 45-13 (R13-2005B, Condition A.3) – Maximum natural gas combustion rates

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

- 45-7-3.1, 45-13 (R13-2005B, Condition B.2) – Quarterly visible emission checks (Method 22)\*
- 45-7-4.1, 45-13 (R13-2005B, Condition B.2) – Oven fires only natural gas
- 45-7-4.12 – Stacks conform to applicable requirements
- 45-13 (R13-2005B, Condition A.2) – Emissions less than allowable
- 45-13 (R13-2005B, Condition A.1) – Monthly production records (R13-2005B, Condition B.6)
- 45-13 (R13-2005B, Condition A.3) – Monthly natural gas combustion records (R13-2005B, Condition B.7)

\*Since the oven uses only natural gas and no visible emissions events have been observed since monitoring commenced, the bakery would like to propose to remove the requirement to perform visible emission checks from the permit.

Are you in compliance with all applicable requirements for this emission unit?  Yes  No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

## ATTACHMENT E - Emission Unit Form

***Emission Unit Description***

<b>Emission unit ID number:</b> 2S	<b>Emission unit name:</b> 38 Tray Direct Fired Teledyne Readco Oven	<b>List any control devices associated with this emission unit:</b> N/A
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**Provide a description of the emission unit (type, method of operation, design parameters, etc.):**  
Natural gas, direct fired, bread baking oven

<b>Manufacturer:</b> Teledyne Readco	<b>Model number:</b> N/A	<b>Serial number:</b> N/A
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<b>Construction date:</b> 1974	<b>Installation date:</b> 1974	<b>Modification date(s):</b> N/A
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**Design Capacity (examples: furnaces - tons/hr, tanks - gallons):**  
7,200 lb/hr (baked goods)

<b>Maximum Hourly Throughput:</b> 7,200 lb/hr (baked goods)	<b>Maximum Annual Throughput:</b> 31,536 tpy (limited to 18,720 tpy)	<b>Maximum Operating Schedule:</b> 8,760 hr/yr
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***Fuel Usage Data (fill out all applicable fields)***

<b>Does this emission unit combust fuel?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>If yes, is it?</b>  <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired
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<b>Maximum design heat input and/or maximum horsepower rating:</b> 5.390 MM Btu/hr	<b>Type and Btu/hr rating of burners:</b> Ribbon type 76 burners
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**List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.**  
Natural gas – 0.005390 MMCF/hr, 47.22 MMCF/yr (limited to 39.5 MMCF/yr)

**Describe each fuel expected to be used during the term of the permit.**

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural gas	<1%	Negligible	1,000 Btu/scf

<b><i>Emissions Data</i></b>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	0.45	1.66
Nitrogen Oxides (NO <sub>x</sub> )	0.539	1.98
Lead (Pb)	0.00	0.00
Particulate Matter (PM <sub>2.5</sub> )	0.041	0.15
Particulate Matter (PM <sub>10</sub> )	0.041	0.15
Total Particulate Matter (TSP)	0.041	0.15
Sulfur Dioxide (SO <sub>2</sub> )	0.003	0.01
Volatile Organic Compounds (VOC)	24.7	64.4
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

**List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).**

Source Testing of June 27, 29 and 30, 1994  
Source Testing of November 16 and 17, 1994  
Source Testing of May 17 and 18, 1995  
AP-42, Section 1.4 (July 1998)

**Applicable Requirements**

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

- 45-7-3.1, 45-13 (R13-2005B, Condition B.2) – Visible emissions from process operations
- 45-7-4.1, 45-13 (R13-2005B, Condition B.2) – Particulate matter limit from process operations
- 45-7-4.12 – Stack flow requirements
- 45-13 (R13-2005B, Condition A.2) – Maximum emissions for criteria pollutants (except PM)
- 45-13 (R13-2005B, Condition A.1) – Maximum production rates
- 45-13 (R13-2005B, Condition A.3) – Maximum natural gas combustion rates

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

- 45-7-3.1, 45-13 (R13-2005B, Condition B.2) – Quarterly visible emission checks (Method 22)\*
- 45-7-4.1, 45-13 (R13-2005B, Condition B.2) – Oven fires only natural gas
- 45-7-4.12 – Stacks conform to applicable requirements
- 45-13 (R13-2005B, Condition A.2) – Emissions less than allowable
- 45-13 (R13-2005B, Condition A.1) – Monthly production records (R13-2005B, Condition B.6)
- 45-13 (R13-2005B, Condition A.3) – Monthly natural gas combustion records (R13-2005B, Condition B.7)

\*Since the oven uses only natural gas and no visible emissions events have been observed since monitoring commenced, the bakery would like to propose to remove the requirement to perform visible emission checks from the permit.

Are you in compliance with all applicable requirements for this emission unit?  Yes  No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

## ATTACHMENT E - Emission Unit Form

***Emission Unit Description***

<b>Emission unit ID number:</b> 3S	<b>Emission unit name:</b> 18 Tray Single Lap Direct Fired Baker Perkins 970 Oven	<b>List any control devices associated with this emission unit:</b> N/A
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**Provide a description of the emission unit (type, method of operation, design parameters, etc.):**  
Natural gas, direct fired, bread baking oven

<b>Manufacturer:</b> Baker Perkins	<b>Model number:</b> 970	<b>Serial number:</b> N/A
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<b>Construction date:</b> 2001	<b>Installation date:</b> 2001	<b>Modification date(s):</b> N/A
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**Design Capacity (examples: furnaces - tons/hr, tanks - gallons):**  
4,255 lb/hr (baked goods)

<b>Maximum Hourly Throughput:</b> 4,255 lb/hr (baked goods)	<b>Maximum Annual Throughput:</b> 18,640 tpy (limited to 7,800 tpy)	<b>Maximum Operating Schedule:</b> 8,760 hr/yr
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***Fuel Usage Data (fill out all applicable fields)***

<b>Does this emission unit combust fuel?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>If yes, is it?</b>  <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired
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<b>Maximum design heat input and/or maximum horsepower rating:</b> 1.980 MM Btu/hr	<b>Type and Btu/hr rating of burners:</b> Ribbon type 18 burners
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**List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.**  
Natural gas – 0.001980 MMCF/hr, 17.34 MMCF/yr (limited to 9.4 MMCF/yr)

**Describe each fuel expected to be used during the term of the permit.**

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural gas	<1%	Negligible	1,000 Btu/scf

<b>Emissions Data</b>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	0.17	0.39
Nitrogen Oxides (NO <sub>x</sub> )	0.198	0.47
Lead (Pb)	0.00	0.00
Particulate Matter (PM <sub>2.5</sub> )	0.015	0.04
Particulate Matter (PM <sub>10</sub> )	0.015	0.04
Total Particulate Matter (TSP)	0.015	0.04
Sulfur Dioxide (SO <sub>2</sub> )	0.001	0.00
Volatile Organic Compounds (VOC)	14.6	26.8
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY

**List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).**

Source Testing of June 27, 29 and 30, 1994  
Source Testing of November 16 and 17, 1994  
Source Testing of May 17 and 18, 1995  
AP-42, Section 1.4 (July 1998)

**Applicable Requirements**

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

- 45-7-3.1, 45-13 (R13-2005B, Condition B.2) – Visible emissions from process operations
- 45-7-4.1, 45-13 (R13-2005B, Condition B.2) – Particulate matter limit from process operations
- 45-7-4.12 – Stack flow requirements
- 45-13 (R13-2005B, Condition A.2) – Maximum emissions for criteria pollutants (except PM)
- 45-13 (R13-2005B, Condition A.1) – Maximum production rates
- 45-13 (R13-2005B, Condition A.3) – Maximum natural gas combustion rates

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

- 45-7-3.1, 45-13 (R13-2005B, Condition B.2) – Quarterly visible emission checks (Method 22)\*
- 45-7-4.1, 45-13 (R13-2005B, Condition B.2) – Oven fires only natural gas
- 45-7-4.12 – Stacks conform to applicable requirements
- 45-13 (R13-2005B, Condition A.2) – Emissions less than allowable
- 45-13 (R13-2005B, Condition A.1) – Monthly production records (R13-2005B, Condition B.6)
- 45-13 (R13-2005B, Condition A.3) – Monthly natural gas combustion records (R13-2005B, Condition B.7)

\*Since the oven uses only natural gas and no visible emissions events have been observed since monitoring commenced, the bakery would like to propose to remove the requirement to perform visible emission checks from the permit.

Are you in compliance with all applicable requirements for this emission unit?  Yes  No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

## ATTACHMENT E - Emission Unit Form

**Emission Unit Description**

<b>Emission unit ID number:</b> 4S	<b>Emission unit name:</b> Flour Handling System	<b>List any control devices associated with this emission unit:</b> 1C
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**Provide a description of the emission unit (type, method of operation, design parameters, etc.):**  
Pneumatic transfer (rail, truck) to bulk silos (3) for storage prior to delivery to bread and bun baking processes.

<b>Manufacturer:</b> N/A	<b>Model number:</b> N/A	<b>Serial number:</b> N/A
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<b>Construction date:</b> 05/1986	<b>Installation date:</b> 05/1986	<b>Modification date(s):</b> N/A
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**Design Capacity (examples: furnaces - tons/hr, tanks - gallons):**  
Approximately 6 tons/hr (flour) to the mixers; 667 lb/minute input from delivery trucks; 294 lb/minute input from railcars

<b>Maximum Hourly Throughput:</b> 20 tons/hr input to the silos; approximately 6 tons/hr to the mixers	<b>Maximum Annual Throughput:</b> 52,650 tons (limited to 39,000 tons by production limits on ovens)	<b>Maximum Operating Schedule:</b> 8,760 hours/year
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**Fuel Usage Data (fill out all applicable fields)**

<b>Does this emission unit combust fuel?</b> ___ Yes <u> X </u> No	<b>If yes, is it?</b>  ___ Indirect Fired ___ Direct Fired
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<b>Maximum design heat input and/or maximum horsepower rating:</b> N/A	<b>Type and Btu/hr rating of burners:</b> N/A
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**List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.**  
N/A

**Describe each fuel expected to be used during the term of the permit.**

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
N/A			

<b><i>Emissions Data</i></b>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO <sub>x</sub> )		
Lead (Pb)		
Particulate Matter (PM <sub>2.5</sub> )	0.31	1.0
Particulate Matter (PM <sub>10</sub> )	2.4	7.8
Total Particulate Matter (TSP)	2.4	7.8
Sulfur Dioxide (SO <sub>2</sub> )		
Volatile Organic Compounds (VOC)		
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
N/A		
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
N/A		
<p><b>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</b></p> <p>PM<sub>2.5</sub>, PM<sub>10</sub> and TSP – from Frank Haile and Associates, a supplier of fabric filters, supplemented by AP-42, Appendix B.2, “General Particulate Size Distribution”</p>		

***Applicable Requirements***

**List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.**

45-7-3.7 – Visible emissions from storage structures (materials handling)  
45-7-4.1, 45-13 (R13-2005B, Condition B.2) – Particulate matter limit from process operations  
45-7-5.1, 45-13 (R13-2005B, Condition B.2) – System required to minimize fugitive particulate from storage/materials handling

X Permit Shield

**For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)**

45-7-3.7 – Facility maintains bulk silos dust collector according to manufacturer specifications  
45-7-4.1, 45-13 (R13-2005B, Condition B.2) – Facility maintains bulk silos dust collector according to manufacturer specifications  
45-7-5.1, 45-13 (R13-2005B, Condition B.2) – Facility maintains bulk silos dust collector according to manufacturer specifications

**Are you in compliance with all applicable requirements for this emission unit?** X Yes \_\_\_ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

## ATTACHMENT E - Emission Unit Form

***Emission Unit Description***

<b>Emission unit ID number:</b> 5S	<b>Emission unit name:</b> Ink Jet Printing	<b>List any control devices associated with this emission unit:</b> N/A
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**Provide a description of the emission unit (type, method of operation, design parameters, etc.):**  
Ink jet printing of packaged baked goods

<b>Manufacturer:</b>	<b>Model number:</b>	<b>Serial number:</b>
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<b>Construction date:</b> MM/DD/YYYY	<b>Installation date:</b> MM/DD/YYYY	<b>Modification date(s):</b> MM/DD/YYYY
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**Design Capacity (examples: furnaces - tons/hr, tanks - gallons):**  
Maximum usage is 0.01 gallons ink/hour and 0.05 gallons make-up fluid/hour.

<b>Maximum Hourly Throughput:</b> 0.06 gallons	<b>Maximum Annual Throughput:</b> 526 gallons	<b>Maximum Operating Schedule:</b> 8,760 hours/year
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***Fuel Usage Data (fill out all applicable fields)***

<b>Does this emission unit combust fuel?</b> ___ Yes <u> X </u> No	<b>If yes, is it?</b> ___ Indirect Fired ___ Direct Fired
--------------------------------------------------------------------	--------------------------------------------------------------

<b>Maximum design heat input and/or maximum horsepower rating:</b> N/A	<b>Type and Btu/hr rating of burners:</b> N/A
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**List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.**  
N/A

**Describe each fuel expected to be used during the term of the permit.**

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
N/A			

<b>Emissions Data</b>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)		
Nitrogen Oxides (NO <sub>x</sub> )		
Lead (Pb)		
Particulate Matter (PM <sub>2.5</sub> )		
Particulate Matter (PM <sub>10</sub> )		
Total Particulate Matter (TSP)		
Sulfur Dioxide (SO <sub>2</sub> )		
Volatile Organic Compounds (VOC)	0.41	1.79
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Methanol	0.37	1.63
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
N/A		
<p><b>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</b></p> <p>Material/mass balance</p>		

***Applicable Requirements***

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

N/A

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

N/A

Are you in compliance with all applicable requirements for this emission unit?  Yes  No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

## ATTACHMENT E - Emission Unit Form

***Emission Unit Description***

<b>Emission unit ID number:</b> 6S	<b>Emission unit name:</b> Kohler Emergency Generator	<b>List any control devices associated with this emission unit:</b> N/A
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**Provide a description of the emission unit (type, method of operation, design parameters, etc.):**  
Diesel-fired emergency generator

<b>Manufacturer:</b> Kohler	<b>Model number:</b> 571RSL7024BF-W	<b>Serial number:</b> WM 3747740
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<b>Construction date:</b> 1991	<b>Installation date:</b> 1991	<b>Modification date(s):</b> N/A
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**Design Capacity (examples: furnaces - tons/hr, tanks - gallons):**  
350 kW

<b>Maximum Hourly Throughput:</b> 1.19 MMBtu/hr	<b>Maximum Annual Throughput:</b> 595 MMBtu (based on maximum operating schedule)	<b>Maximum Operating Schedule:</b> 500 hours/year (9/6/1995 EPA Memo)
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***Fuel Usage Data (fill out all applicable fields)***

<b>Does this emission unit combust fuel?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>If yes, is it?</b> <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired
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<b>Maximum design heat input and/or maximum horsepower rating:</b> 350 kW	<b>Type and Btu/hr rating of burners:</b> N/A
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**List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.**  
Diesel – 8.56 gallons/hour; 4,280 gallons/year

**Describe each fuel expected to be used during the term of the permit.**

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Diesel	0.05%	0.01%	139,000 Btu/gal

<b><i>Emissions Data</i></b>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	0.0039	0.00098
Nitrogen Oxides (NO <sub>x</sub> )	1.1	0.26
Lead (Pb)	0.000017	0.0000042
Particulate Matter (PM <sub>2.5</sub> )	0.014	0.0036
Particulate Matter (PM <sub>10</sub> )	0.014	0.0036
Total Particulate Matter (TSP)	0.014	0.0036
Sulfur Dioxide (SO <sub>2</sub> )	0.039	0.0098
Volatile Organic Compounds (VOC)	0.00049	0.00012
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
All HAPs	0.00154	0.000384
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
<p><b>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</b></p> <p>AP-42, Section 3.1 (April 2000)</p>		

***Applicable Requirements***

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines) – Operational standards including:

- Install a non-resettable hour meter [§63.6625(f)]
- Operate and maintain per manufacturer’s recommendation or develop a maintenance plan [§63.6625(e)]
- Limitations on hours of operation for non-emergency use [§63.6640(f)]
- Minimize engine start-up time to 30 minutes [§63.6625(h)]
- Change oil and filter every 500 hours of operation or annually [Table 2d, Item 4]
- Inspect air cleaner every 1,000 hours of operation or annually [Table 2d, Item 4]
- Inspect all hoses and belts every 500 hours of operation or annually and replace as necessary [Table 2d, Item 4]

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

40 CFR 63, Subpart ZZZZ – The compliance date for this regulation is May 3, 2013. At that time, the bakery will ensure that the appropriate equipment (hour meter) is installed; appropriate plans and schedules are in place; and appropriate records are maintained.

Are you in compliance with all applicable requirements for this emission unit?  Yes  No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

## ATTACHMENT E - Emission Unit Form

***Emission Unit Description***

<b>Emission unit ID number:</b> 7S	<b>Emission unit name:</b> Caterpillar Emergency Generator	<b>List any control devices associated with this emission unit:</b> N/A
---------------------------------------	---------------------------------------------------------------	-------------------------------------------------------------------------

**Provide a description of the emission unit (type, method of operation, design parameters, etc.):**  
Diesel-fired emergency generator

<b>Manufacturer:</b> Caterpillar	<b>Model number:</b> SR-4	<b>Serial number:</b> 48BH3203
-------------------------------------	------------------------------	-----------------------------------

<b>Construction date:</b> Mid 1970s	<b>Installation date:</b> Mid 1970s	<b>Modification date(s):</b> N/A
----------------------------------------	----------------------------------------	-------------------------------------

**Design Capacity (examples: furnaces - tons/hr, tanks - gallons):**  
260 kW

<b>Maximum Hourly Throughput:</b> 0.887 MMBtu/hr	<b>Maximum Annual Throughput:</b> 444 MMBtu (based on maximum operating schedule)	<b>Maximum Operating Schedule:</b> 500 hours/year (9/6/1995 EPA Memo)
-----------------------------------------------------	--------------------------------------------------------------------------------------	--------------------------------------------------------------------------

***Fuel Usage Data (fill out all applicable fields)***

<b>Does this emission unit combust fuel?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>If yes, is it?</b> <input type="checkbox"/> Indirect Fired <input checked="" type="checkbox"/> Direct Fired
------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------

<b>Maximum design heat input and/or maximum horsepower rating:</b> 260 kW	<b>Type and Btu/hr rating of burners:</b> N/A
------------------------------------------------------------------------------	--------------------------------------------------

**List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.**  
Diesel – 6.38 gallons/hour; 3,190 gallons/year

**Describe each fuel expected to be used during the term of the permit.**

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Diesel	0.05%	0.01%	139,000 Btu/gal

<b><i>Emissions Data</i></b>		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	0.0029	0.00073
Nitrogen Oxides (NO <sub>x</sub> )	0.78	0.20
Lead (Pb)	0.000012	0.0000031
Particulate Matter (PM <sub>2.5</sub> )	0.011	0.0027
Particulate Matter (PM <sub>10</sub> )	0.011	0.0027
Total Particulate Matter (TSP)	0.011	0.0027
Sulfur Dioxide (SO <sub>2</sub> )	0.029	0.0073
Volatile Organic Compounds (VOC)	0.00036	0.000091
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
All HAPs	0.00114	0.000286
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
<p><b>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</b></p> <p>AP-42, Section 3.1 (April 2000)</p>		

**Applicable Requirements**

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines) – Operational standards including:

- Install a non-resettable hour meter [§63.6625(f)]
- Operate and maintain per manufacturer’s recommendation or develop a maintenance plan [§63.6625(e)]
- Limitations on hours of operation for non-emergency use [§63.6640(f)]
- Minimize engine start-up time to 30 minutes [§63.6625(h)]
- Change oil and filter every 500 hours of operation or annually [Table 2d, Item 4]
- Inspect air cleaner every 1,000 hours of operation or annually [Table 2d, Item 4]
- Inspect all hoses and belts every 500 hours of operation or annually and replace as necessary [Table 2d, Item 4]

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

40 CFR 63, Subpart ZZZZ – The compliance date for this regulation is May 3, 2013. At that time, the bakery will ensure that the appropriate equipment (hour meter) is installed; appropriate plans and schedules are in place; and appropriate records are maintained to demonstrate compliance.

Are you in compliance with all applicable requirements for this emission unit?  Yes  No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

**ATTACHMENT F**  
**SCHEDULE OF COMPLIANCE FORMS**  
**(NOT APPLICABLE)**

**ATTACHMENT G**  
**AIR POLLUTION CONTROL DEVICE FORM**

## ATTACHMENT G - Air Pollution Control Device Form

<b>Control device ID number:</b> 1C	<b>List all emission units associated with this control device.</b> 4S – Flour Handling System
----------------------------------------	---------------------------------------------------------------------------------------------------

<b>Manufacturer:</b> Premier Pneumatics, Inc.	<b>Model number:</b> BVCSE2558183	<b>Installation date:</b> 05/1986
--------------------------------------------------	--------------------------------------	--------------------------------------

**Type of Air Pollution Control Device:**

<input checked="" type="checkbox"/> Baghouse/Fabric Filter	<input type="checkbox"/> Venturi Scrubber	<input type="checkbox"/> Multiclone
<input type="checkbox"/> Carbon Bed Adsorber	<input type="checkbox"/> Packed Tower Scrubber	<input type="checkbox"/> Single Cyclone
<input type="checkbox"/> Carbon Drum(s)	<input type="checkbox"/> Other Wet Scrubber	<input type="checkbox"/> Cyclone Bank
<input type="checkbox"/> Catalytic Incinerator	<input type="checkbox"/> Condenser	<input type="checkbox"/> Settling Chamber
<input type="checkbox"/> Thermal Incinerator	<input type="checkbox"/> Flare	<input type="checkbox"/> Other (describe) _____
<input type="checkbox"/> Wet Plate Electrostatic Precipitator	<input type="checkbox"/> Dry Plate Electrostatic Precipitator	

**List the pollutants for which this device is intended to control and the capture and control efficiencies.**

Pollutant	Capture Efficiency	Control Efficiency
PM <sub>2.5</sub>	99.9% (estimated)	Not available
PM <sub>10</sub>	99.9% (estimated)	99.9% (manufacturer)
TSP	99.9% (estimated)	99.9% (manufacturer)

**Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).**

Pneumatic transfer to bulk storage silos (3); dust collector general operating parameters:

1,000 acfm; approximately 5" water; polyester bags (25); pulse jet cleaning; exhaust temperature approximately 10 degrees F above ambient

**Is this device subject to the CAM requirements of 40 C.F.R. 64?**  Yes  No

If Yes, **Complete ATTACHMENT H**

If No, **Provide justification.**

The flour handling system utilizes a control device, but is not a major source of emissions, nor is it subject to a pollutant-specific emission limitation.

**Describe the parameters monitored and/or methods used to indicate performance of this control device.**

Pressure drop observation and routine inspection (valve operation, pulsing operation) conducted periodically (monthly at a minimum); bags replaced as necessary; ongoing general site surveillance to proactively note any indication of visible emissions; equipment maintained according to manufacturer specifications

**ATTACHMENT H**  
**COMPLIANCE ASSURANCE MONITORING (CAM) FORM**

## ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

For definitions and information about the CAM rule, please refer to 40 CFR Part 64. Additional information (including guidance documents) may also be found at <http://www.epa.gov/ttn/emc/cam.html>

### CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to **EACH** regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet **all** of the following criteria (*If No, then the remainder of this form need not be completed*):  YES  NO

- a. The PSEU is located at a major source that is required to obtain a Title V permit;
- b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is **NOT** exempt;

#### LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
  - Stratospheric Ozone Protection Requirements.
  - Acid Rain Program Requirements.
  - Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
  - An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).
- c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;
  - d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND
  - e. The PSEU is **NOT** an exempt backup utility power emissions unit that is municipally-owned.

### BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit:

**RENEWAL APPLICATION.** **ALL** PSEUs for which a CAM plan has **NOT** yet been approved need to be addressed in this CAM plan submittal.

**INITIAL APPLICATION** (submitted after 4/20/98). **ONLY** large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.

**SIGNIFICANT MODIFICATION TO LARGE PSEUs.** **ONLY** large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, **Only** address the appropriate monitoring requirements affected by the significant modification.

**3) <sup>a</sup> BACKGROUND DATA AND INFORMATION**

Complete the following table for **all** PSEUs that need to be addressed in this CAM plan submittal. This section is to be used to provide background data and information for each PSEU in order to supplement the submittal requirements specified in 40 CFR §64.4. If additional space is needed, attach and label accordingly.

PSEU DESIGNATION	DESCRIPTION	POLLUTANT	CONTROL DEVICE	<sup>b</sup> EMISSION LIMITATION or STANDARD	<sup>c</sup> MONITORING REQUIREMENT
<u>EXAMPLE</u> Boiler No. 1	Wood-Fired Boiler	PM	Multiclone	45CSR§2-4.1.c.; 9.0 lb/hr	Monitor pressure drop across multiclone: Weekly inspection of multiclone

<sup>a</sup> If a control device is common to more than one PSEU, one monitoring plan may be submitted for the control device with the affected PSEUs identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a). If a single PSEU is controlled by more than one control device similar in design and operation, one monitoring plan for the applicable control devices may be submitted with the applicable control devices identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a).

<sup>b</sup> Indicate the emission limitation or standard for any applicable requirement that constitutes an emission limitation, emission standard, or standard of performance (as defined in 40 CFR §64.1).

<sup>c</sup> Indicate the monitoring requirements for the PSEU that are required by an applicable regulation or permit condition.

**CAM MONITORING APPROACH CRITERIA**

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for **EACH** indicator selected for **EACH** PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. If more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.

4a) PSEU Designation:	4b) Pollutant:	4c) <sup>a</sup> Indicator No. 1:	4d) <sup>a</sup> Indicator No. 2:
<b>5a) GENERAL CRITERIA</b> Describe the <u>MONITORING APPROACH</u> used to measure the indicators:			
<sup>b</sup> Establish the appropriate <u>INDICATOR RANGE</u> or the procedures for establishing the indicator range which provides a reasonable assurance of compliance:			
<b>5b) PERFORMANCE CRITERIA</b> Provide the <u>SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA</u> , such as detector location, installation specifications, and minimum acceptable accuracy:			
<sup>c</sup> For new or modified monitoring equipment, provide <u>VERIFICATION PROCEDURES</u> , including manufacturer's recommendations, <u>TO CONFIRM THE OPERATIONAL STATUS</u> of the monitoring:			
Provide <u>QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES</u> that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.):			
<sup>d</sup> Provide the <u>MONITORING FREQUENCY</u> :			
Provide the <u>DATA COLLECTION PROCEDURES</u> that will be used:			
Provide the <u>DATA AVERAGING PERIOD</u> for the purpose of determining whether an excursion or exceedance has occurred:			

<sup>a</sup> Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

<sup>b</sup> Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

<sup>c</sup> The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

<sup>d</sup> Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

**RATIONALE AND JUSTIFICATION**

Complete this section for EACH PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide rationale and justification for the selection of EACH indicator and monitoring approach and EACH indicator range in order to meet the submittal requirements specified in 40 CFR §64.4.

6a) PSEU Designation:

6b) Regulated Air Pollutant:

7) **INDICATORS AND THE MONITORING APPROACH:** Provide the rationale and justification for the selection of the indicators and the monitoring approach used to measure the indicators. Also provide any data supporting the rationale and justification. Explain the reasons for any differences between the verification of operational status or the quality assurance and control practices proposed, and the manufacturer's recommendations. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

8) **INDICATOR RANGES:** Provide the rationale and justification for the selection of the indicator ranges. The rationale and justification shall indicate how EACH indicator range was selected by either a COMPLIANCE OR PERFORMANCE TEST, a TEST PLAN AND SCHEDULE, or by ENGINEERING ASSESSMENTS. Depending on which method is being used for each indicator range, include the specific information required below for that specific indicator range. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

- COMPLIANCE OR PERFORMANCE TEST (Indicator ranges determined from control device operating parameter data obtained during a compliance or performance test conducted under regulatory specified conditions or under conditions representative of maximum potential emissions under anticipated operating conditions. Such data may be supplemented by engineering assessments and manufacturer's recommendations). The rationale and justification shall INCLUDE a summary of the compliance or performance test results that were used to determine the indicator range, and documentation indicating that no changes have taken place that could result in a significant change in the control system performance or the selected indicator ranges since the compliance or performance test was conducted.
- TEST PLAN AND SCHEDULE (Indicator ranges will be determined from a proposed implementation plan and schedule for installing, testing, and performing any other appropriate activities prior to use of the monitoring). The rationale and justification shall INCLUDE the proposed implementation plan and schedule that will provide for use of the monitoring as expeditiously as practicable after approval of this CAM plan, except that in no case shall the schedule for completing installation and beginning operation of the monitoring exceed 180 days after approval.
- ENGINEERING ASSESSMENTS (Indicator Ranges or the procedures for establishing indicator ranges are determined from engineering assessments and other data, such as manufacturers' design criteria and historical monitoring data, because factors specific to the type of monitoring, control device, or PSEU make compliance or performance testing unnecessary). The rationale and justification shall INCLUDE documentation demonstrating that compliance testing is not required to establish the indicator range.

RATIONALE AND JUSTIFICATION:

**ATTACHMENT I**  
**BACKUP INFORMATION AND CALCULATIONS**

## ATTACHMENT I

### BACKUP INFORMATION AND CALCULATIONS

- I.1 Facility Background
- I.2 VOC Emissions from Yeast Fermentation
- I.3 Emissions Calculations for Combustion of Natural Gas
- I.4 Emissions Calculations for Emergency Generators
- I.5 Particulate Emissions from Flour Handling System
- I.6 VOC Emissions from Ink Jet Printing
- I.7 VOC Emissions from Solvent Parts Washer
- I.8 VOC Emissions from Storage Tanks
- I.9 Summary of Air Emissions Calculations

#### **I.1 Facility Background**

This submittal represents Earthgrains Baking Companies, Inc.'s intent to file for a renewal of Title V Operating Permit R30-01100062-2005 for the processes at the bakery located at:

1300 Adams Avenue  
Huntington, West Virginia 25704

The emission units are separated into two categories - significant emission units and insignificant emission units. The insignificant units are identified as such in accordance with the Insignificant Activities list provided by the West Virginia Department of Environmental Protection. Each emission unit and associated maximum design rates are presented in Table I-1 below.

**Table I-1. List of Emission Units.**

Emission Unit ID	Emission Point ID	Description of Unit	Maximum Design Rate
1e, 2e, 3e	1S	58 Tray Baker Perkins 970 Oven	5.940 million BTU/hr 15,000 lb bread/hr
4e, 5e, 6e	2S	38 Tray Teledyne Readco Oven	5.390 million BTU/hr 7,200 lb buns/hr
7e, 8e	3S	18 Tray Baker Perkins 970 Oven	1.980 million BTU/hr 4,255 lb buns/hr
9e	4S	Flour Handling System	39,000 tons/year (limited)
10e	5S	Ink Jet Printing	
11e	6S	Kohler Emergency Generator	350 kW
12e	7S	Caterpillar Emergency Generator	260 kW
Insignificant		Boiler No. 1 (Hurst)	5.02 million BTU/hr
Insignificant		Boiler No. 2 (Kewanee)	4.2 million BTU/hr

Emission Unit ID	Emission Point ID	Description of Unit	Maximum Design Rate
Insignificant		Storage Tanks	10,000 gallon gasoline UST 10,000 gallon diesel UST 4,000 gallon diesel UST
Insignificant		Solvent Parts Washer	
Insignificant		Water Heaters	< 300,000 BTU/hr
Insignificant		Water Heater	3.0 million BTU/hr

Additional insignificant activities are identified in Section 4 of the General Forms.

## I.2 VOC Emissions from Yeast Fermentation

Stack testing performed on the bakery ovens during 1994 and 1995 yielded an emission factor for the bread oven of 3.053 lb VOC/1,000 lb bread baked. Similarly, the emission factor for bun baking in the Earthgrains ovens was 3.437 lb VOC/1,000 lb buns baked. The maximum potential emissions from each oven are calculated below based on the maximum hourly throughput of the ovens and the limits imposed in the construction permit for the site (to comply with the State RACT requirements):

**Table I-2. Potential VOC Emissions from Fermentation for Each Emission Unit**

Emission Unit	VOC Emission Factor (lb VOC/ton product)	Maximum Throughput (tons/hr)	Limited Throughput (tons/yr)	Potential VOC Emissions (lb/hr)	Potential VOC Emissions (tons/yr)
1S BP Bread Oven	6.106	7.50	39,000	45.8	119.1
2S TR Bun Oven	6.874	3.60	18,720	24.7	64.4
3S BP Bun Oven	6.874	2.13	7,800	14.6	26.8

The potential to emit for the Bread Oven (1S) can be calculated:

$$(39,000 \text{ tons bread/yr}) \times (6.106 \text{ lbs VOC/ton bread}) \times (1 \text{ ton VOC} / 2000 \text{ lb VOC}) \\ = 119.1 \text{ ton VOC / yr}$$

Since the bakery exceeded the hourly limits on the Baker Perkins Bun Oven (3S) during 2009, the maximum throughput of each oven was reevaluated and updated in this application. The hourly emissions limits for the ovens had been based on the maximum throughput and the stack testing factors, which should not have been exceeded. Earthgrains requests that the hourly limits for each oven be updated in the new permit to match the updated maximum throughput values. The annual limits for each oven should remain unchanged.

## I.3 Emissions Calculations for Combustion of Natural Gas

The maximum amount of fuel used in each of the combustion units was calculated by using the maximum design heat input rating for each unit and by assuming that the total amount of natural

gas used at the facility was used in the listed units. The calculated fuel usage numbers are listed in Table I-3. The Maximum Hourly Design Rate (MHDR) is calculated based on the maximum design heat input rating for each oven and boiler, and AP-42 default heating values of natural gas (1,000 BTU / ft<sup>3</sup>). Potential emissions from combustion of the emission units are based on the MHDR calculated in Table I-3 multiplied by the emission factors for the fuel, from AP-42 (Section 1.4).

**Table I-3. Maximum Design Rate for Each Bakery Oven and Boiler**

Emission Unit	Maximum Design Heat Input Rating (million BTU/hr)	Maximum Natural Gas Design Rate (MMCF/hr)	Limited Gas Usage Rate (MMCF/yr)
1S BP Bread Oven	5.940	0.005940	52
2S TR Bun Oven	5.390	0.005390	39.5
3S BP Bun Oven	1.980	0.001980	9.4
Boiler No. 1	5.02	0.00502	N/A
Boiler No. 2	4.2	0.0042	N/A
Water Heaters	0.300	0.000300	N/A
Water Heater	3.0	0.0030	N/A

As an example, the maximum natural gas design rate for the Bread Oven is:

$$(5.940 \text{ MMBtu / hr}) \times (1 \text{ MMCF / } 1000 \text{ MMBtu}) = 0.005940 \text{ MMCF/hr}$$

**Table I-4. Summary of Combustion Emissions from Natural Gas**

Pollutant	Emission Factor (lb/MMCF)	Potential Emissions (ton/yr)						
		BP Bread Oven	TR Bun Oven	BP Bun Oven	Boiler No.1	Boiler No. 2	Water Heaters	Water Heater
PM	7.6	0.20	0.15	0.036	0.17	0.14	0.010	0.10
NO <sub>x</sub>	100	2.60	1.98	0.47	2.20	1.84	0.131	1.31
SO <sub>2</sub>	0.6	0.02	0.01	0.003	0.01	0.01	0.0008	0.008
CO	84	2.18	1.66	0.39	1.8	1.5	0.11	1.1
VOC	5.5	*	*	*	0.12	0.10	0.0072	0.072

\*Included in stack test results.

As an example, the maximum potential NO<sub>x</sub> emissions for natural gas combustion in the bread oven are equal to:

$$(52 \text{ MMCF/yr}) \times (100 \text{ lbs NO}_x\text{/MMCF}) \times (0.0005 \text{ tons NO}_x\text{/lb NO}_x) = 2.60 \text{ tons NO}_x\text{/year}$$

All other pollutant actual and potential emissions are calculated in a similar manner. Negligible or trace amounts of HAPs may result from the combustion of natural gas. Based on emission rates published AP-42, Section 1.4, the approximate emission rate for formaldehyde is

0.0000735 lb/MMBTU. Per AP-42, formaldehyde is the most prevalent HAP generated from the combustion of natural gas.

#### **I.4 Emissions Calculations for Emergency Generators**

The two emergency generators on-site were originally designated as insignificant sources. However, the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reciprocating Internal Combustion Engines (RICE) was modified on March 3, 2010 to include stationary emergency engines at area sources of HAPs. Since the bakery is an area source, the generators will be subject to the standard (40 CFR 63 Subpart ZZZZ) starting on May 3, 2013.

The maximum amount of fuel used in each of the generators was calculated by using the maximum design heat input rating for each unit and a maximum hours of operation per year of 500 (September 6, 1995 memo from John S. Seitz regarding “Calculating Potential to Emit (PTE) for Emergency Generators”). The calculated fuel usage numbers are listed in Table I-5. The Maximum Hourly Design Rate (MHDR) is calculated based on the maximum kW input rating for each generator and the AP-42 default heating value of diesel (139,000 BTU / gallon). Potential emissions from combustion of the emission units in Table I-6 are based on the MHDR calculated in table I-5 multiplied by the emission factors for the fuel, from AP-42 (Section 3.1).

**Table I-5. Maximum Design Rate for Each Emergency Generator**

Emission Unit	Maximum Design Heat Input Rating (million BTU/hr)	Maximum Diesel Design Rate (gallons/hr)
Kohler (350 kW)	1.19	8.56
Caterpillar (260 kW)	0.887	6.38

As an example, the maximum diesel design rate for the Kohler generator is:

$$(350 \text{ kW-hr}) \times (3,413 \text{ Btu/kW-hr}) \times (1 \text{ gallon} / 139,000 \text{ Btu}) = 8.56 \text{ gallons/hr}$$

**Table I-6. Summary of Combustion Emissions from Diesel**

Pollutant	Emission Factor (lb/MMBtu)	Potential Emissions (lb/hr)		Potential Emissions (ton/yr)	
		Kohler	Caterpillar	Kohler	Caterpillar
PM	0.012	0.014	0.011	0.0036	0.0027
NO <sub>x</sub>	0.88	1.1	0.78	0.26	0.20
SO <sub>2</sub>	0.033 <sup>1</sup>	0.039	0.029	0.0098	0.0073
CO	0.0033	0.0039	0.0029	0.00098	0.00073
VOC	0.00041	0.00049	0.00036	0.00012	0.000091
Lead	0.000014	0.000017	0.000012	0.0000042	0.0000031
All HAPs <sup>2</sup>	0.00129	0.00154	0.00114	0.000384	0.000286

<sup>1</sup>1.015 or 0.033 for diesel-fired units.

<sup>2</sup>Sum of all HAPs listed in Tables 3.1-4 and 3.1-5 of AP-42.

As an example, the maximum potential PM emissions for diesel combustion in the Kohler generator are equal to:

$$\begin{aligned} (1.19 \text{ MMBtu/hr}) \times (0.012 \text{ lbs PM/MMBtu}) &= 0.014 \text{ pounds PM per hour} \\ (1.19 \text{ MMBtu/hr}) \times (0.012 \text{ lbs PM/MMBtu}) \times (500 \text{ hr/yr}) \times (1 \text{ ton}/2000 \text{ lb}) \\ &= 0.0036 \text{ tons PM per year} \end{aligned}$$

All other pollutant actual and potential emissions are calculated in a similar manner. Negligible or trace amounts of HAPs may result from the combustion of natural gas. Based on emission rates published AP-42, Section 1.4, the approximate emission rate for formaldehyde is 0.0000735 lb/MMBTU. Per AP-42, formaldehyde is the most prevalent HAP generated from the combustion of natural gas.

### **I.5 Particulate Emissions from Flour Handling System**

Emissions from this emission unit are in the form particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>). Particulate matter is emitted at each transfer point in the flour handling system where air is vented through filter bags. It should be noted that, with the exception of the outside silos, these transfer points do not vent directly to the atmosphere, but vent through the filter bags and into the building.

The filter bags are fabricated of a tightly woven fabric that allows air to pass, while typically retaining most or all of the particulate matter. Information provided by Frank Haile and Associates, a supplier of fabric-filter bags, indicated that 0.25 to 0.5 pounds of fine flour dust (i.e. PM<sub>10</sub>) may escape through the filter media to the outside atmosphere for every 50,000 pounds of flour loaded or transferred. The facility has twenty different transfer points with air relief vents and the fabric filters: at the flour storage silos, at the sifters and at the mixers. Since the facility has twenty transfer points, the emission factor for the entire flour storage and transfer system is 0.40 lbs/ton of flour handled.

During 2009, the ratio of flour to product was approximately 60%. Using the limited production capacity of the facility (65,520 tons/year), the maximum flour usage would be 39,000 tons/year. The corresponding maximum potential PM<sub>10</sub> emissions are calculated to be 7.8 tons/year. For PM<sub>2.5</sub>, the maximum potential emissions are 1.0 tons/year using AP-42, Appendix B.2 to determine the particle size distribution.

The maximum hourly emissions were calculated using the bakery input capacity and 20 transfer points:

$$(6 \text{ tph}) \times (0.40 \text{ lb PM/ton flour}) = 2.4 \text{ lb PM/hr}$$

## **I.6 VOC Emissions from Ink Jet Printing**

The facility currently operates ink jet coders to date stamp packaged products. Some units use Video Jet ink and make-up fluid, while others use Imaje ink and make-up fluid to imprint the date codes on the plastic packages.

Emissions from this process are minimal, but may exceed the 1,000 pound/year HAP level to be considered an insignificant source. Even though 2009 emissions of HAPs from this source are less than the insignificant level, they have been included as a source in this application since the potential emissions are over.

For the Video Jet ink and make-up fluid during 2009, approximately 20.25 gallons of ink and 112.5 gallons of make-up fluid were used for the printers. The specific gravity of the ink is 0.88 (5.7 lb/gallon) and 77 percent volatile, while the specific gravity of the solvent is 0.79 (6.5 lb/gallon) and 99 percent volatile.

For the Imaje ink and make-up fluid during 2009, approximately 14.3 gallons of ink and 135.5 gallons of make-up fluid were used for the printers. The specific gravity of the ink is 0.865 (7.21 lb/gallon), while the specific gravity of the solvent is 0.805 (6.71 lb/gallon).

Actual 2009 Emissions:

$$20.25 \text{ gal} \times 5.7 \text{ lb/gal} + 112.5 \text{ gal} \times 6.5 \text{ lb/gal} + 14.3 \text{ gal} \times 7.21 \text{ lb/gal} + 135.5 \text{ gal} \times 6.71 \text{ lb/gal} \\ = 1,860 \text{ lb}$$

Since 200 lb waste was collected and shipped off-site during 2009, the actual emissions are:  
 $1,860 \text{ lb} - 200 \text{ lb} = 1,660 \text{ lb} = 0.83 \text{ tons}$

The Video Jet ink and make-up fluid both contain methanol, a listed HAP. The ink has 65-80% methanol and the make-up fluid has 95-100% methanol. Actual methanol emissions for 2009 are calculated using the maximum concentrations in the range:

$$20.25 \text{ gal} \times 5.7 \text{ lb/gal} \times 0.80 + 112.5 \text{ gal} \times 6.5 \text{ lb/gal} = 820 \text{ lb methanol}$$

Since 200 lb waste was collected and shipped off-site during 2009, the actual can be reduced based on the ratio of Video Jet to the total ink used:

$$820 \text{ lb} - 200 \text{ lb} \times (20.25 \times 0.8 + 112.5) / 282.55 \text{ gal} = 730 \text{ lb} = 0.36 \text{ tons}$$

Similarly, 1.79 tons/year (0.41 pounds/hour) VOC and 1.63 tons/year (0.37 pounds/hour) methanol were calculated as the maximum potential emissions based on a usage of 0.01 gallons/hour ink and 0.05 gallons/hour make-up solvent and no collection and removal of material from the facility. Potential VOC emissions were calculated using only Imaje ink (greater density) and potential methanol emissions were calculated using only Video Jet ink.

MSDS for the inks and make-up fluids are provided in Attachment J.

## **I.7 VOC Emissions from Solvent Parts Washer**

The facility maintains one (1) solvent parts washer for the cleaning of miscellaneous metal parts in the maintenance shop. During 2009, 252 gallons were added to the cleaner. The contractor who added and removed solvent didn't determine the amount of solvent removed from the parts washer

during servicing, so the actual amount of solvent emitted to the atmosphere during 2009 cannot be determined by mass balance. The maximum potential emissions were calculated based on the total amount of solvent added to the cleaner being emitted to the atmosphere in a given year. The total emissions would be 252 gallons or 1,900 pounds VOC per year (0.95 tons VOC per year at a density of 7.4 lb/gallon).

The MSDS for the solvent parts washer solvent is included in Attachment J.

### **I.8 VOC Emissions from Storage Tanks**

The facility has three underground storage tanks (USTs) for diesel and gasoline fuel used by trucks and the emergency generators on-site. Emissions from the tanks were estimated using factors from FIRE 6.22, SCC 4-04-004-04 and 4-04-004-14. Table I-7 summarizes the potential emissions from the USTs.

**Table I-7. Summary of Storage Tank Emissions**

Underground Storage Tank	2009 Throughput (gallons)	Estimated Maximum Throughput (gallons)	VOC Emission Factor (lb/1000 gal)	Potential VOC Emissions (ton/yr)
10,000-gallon gasoline	17,356	75,000	11.9	0.45
10,000-gallon diesel fuel	186,344	285,000	0.03	0.004
4,000-gallon diesel fuel	481	1,300	0.03	0.000

### **I.9 Summary of Air Emissions Calculations**

Table I-8 summarizes the potential emissions for all emission points at Earthgrains Baking Companies, Inc. The majority of emissions from the bread and bun baking processes are VOCs. Table I-8 represents the emissions from the facility based on limits imposed in the air construction permit and the current Title V Operating Permit for the facility.

**Table I-8. Summary of Maximum Potential Emissions (Limited)**

Emission Unit	Description of Emission Unit	Maximum Potential Annual Emissions (tons/yr)				
		PM <sub>10</sub>	NO <sub>x</sub>	SO <sub>2</sub>	CO	VOC
1S	BP Bread Oven	0.20	2.60	0.02	2.18	119.1
2S	TR Bun Oven	0.15	1.98	0.01	1.66	64.4
3S	BP Bun Oven	0.036	0.47	0.003	0.39	26.8
4S	Flour Handling System	7.8	0.00	0.00	0.00	0.00
5S	Ink Jet Printing	0.00	0.00	0.00	0.00	1.79
6S	Kohler Emergency Generator	0.004	0.26	0.010	0.001	0.00
7S	Caterpillar Emergency Generator	0.003	0.20	0.007	0.001	0.00

Emission Unit	Description of Emission Unit	Maximum Potential Annual Emissions (tons/yr)				
		PM <sub>10</sub>	NO <sub>x</sub>	SO <sub>2</sub>	CO	VOC
Insig.	Boiler No. 1	0.17	2.20	0.01	1.8	0.12
Insig.	Boiler No. 2	0.14	1.84	0.01	1.5	0.10
Insig.	Water Heaters	0.010	0.131	0.001	0.11	0.007
Insig.	Water Heater	0.10	1.31	0.008	1.1	0.072
Insig.	Solvent Parts Washer	0.00	0.00	0.00	0.00	0.95
Insig.	Storage Tanks	0.00	0.00	0.00	0.00	0.45
<b>Total</b>		<b>8.61</b>	<b>10.99</b>	<b>0.08</b>	<b>8.74</b>	<b>213.8</b>

**ATTACHMENT J**

**MSDS**



## Material Safety Data Sheet

1  
C

### Crystal Clean Premium 142<sup>+</sup> Mineral Spirits

Revision Date: 02-14-2008

#### 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Crystal Clean 142<sup>+</sup> Mineral Spirits

Supplier: Heritage-Crystal Clean  
2175 Point Boulevard - Suite 375  
Elgin, IL 60123-9211

Technical Contact: Heritage-Crystal Clean - EHS Department  
Telephone: 877-938-7948 or 847-836-5670  
Fax: 847-836-5677  
Email: ehs@crystal-clean.com  
Website: www.crystal-clean.com

Synonyms: Mineral Spirits, Petroleum Naphtha, Parts Cleaner Solvent, Stoddard Solvent, Petroleum Distillates

#### EMERGENCY TELEPHONE NUMBERS

**Medical:** Local Poison Control Center or Hospital

**Technical Questions:** Heritage-Crystal Clean  
EHS Department  
877-938-7948

#### 2. COMPOSITION / INFORMATION OF INGREDIENTS

Component Name	CAS No.	Wt %
Distillates (petroleum), aliphatic	64742-47-8	100

This solvent may be produced from several sources utilizing different refining processes that generate different CAS registry numbers based on the refining process used. Petroleum solvent naphtha, medium aliphatic is a complex stream of predominantly C9 to C12 hydrocarbons.

#### 3. HAZARDS IDENTIFICATION

**Major Routes of Entry:** Skin contact. Inhalation

**OSHA Physical Hazard Classification:** Combustible

#### Potential Health Effects:

**Inhalation:** High Concentrations of vapor may be harmful if inhaled and may irritate the respiratory tract (nose, throat, and lungs). High concentrations may cause nausea, vomiting, headaches, dizziness, loss of coordination, numbness, and other central nervous system effects.

**Eye Contact:** This material may cause transient eye irritation. Symptoms may include stinging, tearing, redness, and swelling of the eyes.

**Skin:** This material can cause mild, transient skin irritation with short-term exposure. Repeated or prolonged skin contact can produce irritation (dermatitis)

**Ingestion:** May be harmful if swallowed. Aspiration can result in lung damage or possible death.

**Symptoms of Exposure:** Signs of central nervous system depression begin with headaches, dizziness, and apparent intoxication, through loss of consciousness.

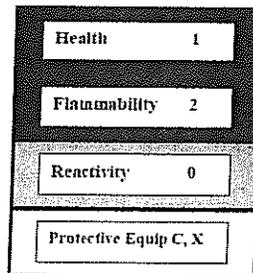
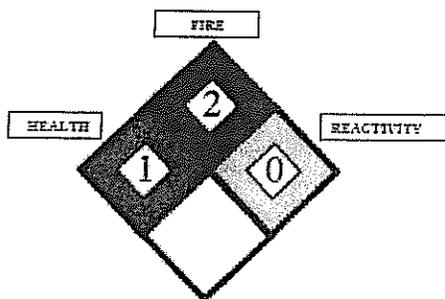
**Aggravated Conditions:** Skin contact can aggravate existing dermatitis. Preexisting eye and respiratory disorders may also be aggravated by exposure to this product.

#### NFPA Hazard Rating

- Health: 1 = Slight
- Fire 2 = Moderate
- Reactivity 0 = Negligible

#### NPCA/HMIS Rating:

- Health 1 = Slight
  - Fire 2 = Moderate
  - Reactivity 0 = Negligible
  - Protective Equipment C,X
- C = Safety glasses or goggles, gloves, synthetic apron  
X = Consult supervisor for handling info.



#### 4. FIRST AID MEASURES

**Inhalation:** Remove to fresh air. If victim has difficulty in breathing, tightness of the chest, is dizzy, is vomiting, or is unresponsive, administer oxygen, artificial respiration, or CPR if required until medical assistance can be rendered.

**Eyes:** Check for and remove contacts. If symptoms develop, flush eyes gently with water for at least 15 minutes while holding eyelids apart. Seek immediate medical attention. Seek medical attention.

**Skin:** Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse.

**Ingestion:** Do NOT induce vomiting. If victim is coughing, choking, has shortness of breath, or difficulty in breathing, transport to nearest medical facility for additional treatment. If any of the delayed signs and symptoms appears within the next 6 hours, transport to the nearest medial facility: fever greater that 101°F, shortness of

breathe, chest congestion, or continued coughing or wheezing. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

**Note to Physician:** Inhalation overexposure can produce toxic effects. Monitor for respiratory distress. If coughing or difficult breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis. Vigorous anti-inflammatory/steroid treatment may be required with upper airway or pulmonary edema. Administer 100% humidified oxygen with assisted ventilation, as required.

## 5. FIRE FIGHTING MEASURES

Flash Point:	>142°F ; > 61°C TCC
Auto-ignition Point:	>440°F ; >226°C
Explosive Limits:	1% (lower) - 6% (upper)
NFPA 30 Classification:	Combustible Liquid Class IIIA

Fire and Explosion Hazards: Vapors are heavier than air and may travel along the ground or may be moved by ventilation and ignited by pilot lights, other flames, or other ignition sources. Never use welding or cutting torch on or near drum (even empty) because product, or even residue, can ignite explosively.

Extinguishing Media: Use carbon dioxide, dry chemical, regular foam, or water fog. Do not use a direct stream of water. Material will float and can be reignited on the surface of the water.

Fire Fighting Instructions: Use self-contained breathing apparatus (SCBA). Containers exposed to fire should be kept cool with water spray.

## 6. ACCIDENTAL RELEASE MEASURES

Small Spill: appropriate inert absorbents, such as vermiculite, floor absorbent, or absorbent booms or pads, can absorb small spills. Avoid breathing vapors and ventilate the area.

Large Spill: Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until clean up has been completed. Stop spill at source if safe to do so. Prevent material from entering confined areas, drains, sewers, streams or other bodies of water. Prevent from spreading. If runoff occurs, notify authorities as required. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required that a spill has occurred. Pump or Vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil, and other material to proper non-leaking containers for disposal.

### Precautions to be taken in Handling and Storing:

Keep containers closed when not in use. When opening covers and outlet caps on storage tanks, use face shield and gloves to avoid possible injury from pressurized hydrocarbon vapors. Do not overheat. Surfaces that are sufficiently hot may ignite liquid material.

All five-gallon pails and larger containers, including tank cars and truck cargo tanks should be grounded and/or bonded when material is transferred to prevent ignition of vapors by static electricity. Hydrocarbon solvents are basically non-conductors of electricity but can become electrostatically charged during mixing, filtering, or

pumping at high flow rates. If the charge reaches a sufficiently high level, sparks can form that may ignite the vapors of flammable liquids.

Store in a cool, dry, well-ventilated safety storage cabinet or room with appropriate labels. Do not store in closed vehicles. Keep away from ignition sources and ground all equipment containing this material. Containers must be able to withstand expansion and/or pressures expected from warming and cooling in storage.

## 7. HANDLING AND STORAGE

Empty containers can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flames, sparks, or other sources of ignition. They may explode and cause injury or death.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Eye Protection: Safety glasses or chemical splash goggles are advised to safeguard against potential eye contact, irritation, or injury. Ensure that an emergency eyewash station and safety shower are located nearby.

Skin Protection: Wear resistant gloves (consult your safety equipment supplier) To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

Respiratory Protections: If engineering controls do not maintain airborne concentrations at a level that is adequate to protect worker health, a NIOSH/MISHA approved air supplied respirator must be worn in accordance with the OSHA respiratory standard. Appropriate respirators may include air-purifying cartridge respirators for organic vapors, supplied air respirators, or self-contained breathing apparatus (in environments with unknown concentrations or emergency situations).

Engineering Controls: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below the permissible exposure limits and threshold limits values.

Other/General Protection: Wear body-covering clothing to avoid prolonged or repeated exposure. Launder before reuse. Varying application methods can dictate the use of additional protective safety equipment such as impermeable aprons, etc.

### Occupational Exposure Guidelines:

Substance: Petroleum Hydrocarbon Distillates

OSHA PEL 2900 mg/m<sup>3</sup> or 500 ppm (8-hour)

ACGIH TLV 100 ppm (8-hour TWA)

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Clear or slight light blue color
Odor:	Hydrocarbon solvent odor
Boiling Point:	>186 °C, >367 °F
Vapor Pressure:	<1.0 mm Hg @ 20 °C, 68 °F
Reid Vapor Pressure:	< 0.1 psia (VP @ 38 °C , 100 °F)
Vapor Density (Air=1):	> 1.0
Specific Gravity:	0.78 - 0.98

Percent Volatiles:	100%
Percent VOC:	100%
Lbs/Gal VOC:	6.5 - 8.2
Solubility:	Negligible

Physical properties given are typical for this product.

## 10. STABILITY AND REACTIVITY

Stability:	Stable
Incompatible Materials:	Strong oxidizers.
Hazardous Polymerization:	Will not occur.

Hazardous Decomposition Products: Thermal decomposition may result in an airborne mixture of solids (smoke and soot), liquids (mist), and gases including a complex mixture of fumes, carbon monoxide, carbon dioxide, and other organic hydrocarbons.

Conditions to Avoid: Avoid heat, open flames, strong acids and strong oxidizers.

## 11. TOXICOLOGICAL INFORMATION

<u>Acute Studies:</u>	Petroleum Distillate:
	Oral (LD <sub>50</sub> ): > 5,000 mg/kg (rat)
	Inhalation (LC <sub>50</sub> ): > 5,500 (rat, 4 hours)
	Dermal (LD <sub>50</sub> ): > 3,000 mg/kg mg/kg (rabbit)

### Miscellaneous Toxicological Information:

Studies on laboratory animals have associated similar materials with eye and respiratory tract irritation. Studies on laboratory animals have shown similar materials to cause skin irritation after repeated or prolonged contact. Repeated direct application of Stoddard Solvent to the skin can produce defatting dermatitis and kidney damage in laboratory animals. Rats developed kidney damage and elevated blood urea nitrogen levels when exposed to a concentration of 1.9 mg/L for 65 days. The kidney damage occurred only in male rats and appeared to involve both the tubules and glomeruli. The significance of these animal study results to human health is unclear.

## 12. ECOLOGICAL INFORMATION

### Acute Toxicity

Fish:	Low toxicity: LC/EC/IC50 > 1000mg/l
Aquatic Invertebrates:	Low toxicity: LC/EC/IC50 > 1000mg/l
Algae:	Low toxicity: LC/EC/IC50 > 1000mg/l

Mobility: Floats on Water;  
Adsorbs to soil and has low mobility

Persistence / Degradability: Expected to be readily biodegradable  
Oxidizes rapidly by photo-chemical reactions in air

Bioaccumulation: Has the potential to bioaccumulate

### 13. DISPOSAL CONSIDERATIONS

**Material:** Maximize material recovery for reuse or recycling. The characteristics of this product do not in itself cause the resulting waste to be considered a hazardous waste under RCRA criteria of 40 CFR 261.

**Container:** Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Do not puncture, cut, or weld unclean drums. Send drum to metal or drum reclaimer.

### 14. TRANSPORT INFORMATION

#### DOT Non-Bulk Package (< 119G container)

Shipping Name: Mineral Spirits (Petroleum Naphtha) (Not DOT regulated)

#### DOT Bulk Package (> 119G container)

Shipping Name: Combustible liquid, n.o.s. (petroleum naphtha)

UN/NA #: NA 1268

Hazard Class: Combustible Liquid

Packing Group: III

Placards: Class 3, NA 1268

Packaging Exceptions: 49 CFR 173.150

Packaging Requirements: 49 CFR 173.203, 173.242

North America Emergency Response Guidebook Guide No: 128

This material is not classified as hazardous under IATA and IMDG regulations.

### 15. REGULATORY INFORMATION

#### US Federal Regulations:

TSCA: This material is listed in the U.S. Toxic Substance Control Act Chemical Substance Inventory

CWA: This material is classified as an oil under Section 311 of the Clean Water Act and the Oil Pollution Control Act of 1990. Spills and discharges that cause a sheen on surface waters or in waterways and seaways that lead to surface waters must be reported to the national Response Center at 800-424-8802

CERCLA: This material does not contain any hazardous substances listed pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and 40 CFR 302, Table 302.4.

SARA 302 and 304: This product does not contain any components listed in 40 CFR 302.4 and 40 CFR 355.

SARA 313: This product does not contain "toxic" chemicals subject to the requirements of Section 313 of Title II of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR 372.

SARA 311 and 312: This product poses the following health hazards as defined in 40 CFR 370 and are subject to the requirements of Sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):

- Immediate (Acute) Health Hazard
- Delayed (Chronic health Hazard
- Fire Hazard

## **16. OTHER INFORMATION**

### Reference Documents:

Some of the Information provided in this Material Safety Data Sheet is supplied by manufacturers of products supplied to Heritage-Crystal Clean.

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 regardless of the suitability of this information for the user's intended purposes or the consequences of its use. Each individual should make a determination as to the suitability of the information of his or her particular purpose(s).

**Heritage-Crystal Clean**

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of Imaje S.A. company's knowledge and believed accurate and reliable as of the date indicated. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. Finally, it remains the responsibility of the customer to provide a safe workplace and to comply with all applicable laws and regulations.

This safety data sheet is in accordance with amended Directive 91/155/EEC\* and with International Standard ISO\* 11014-1.

The changed headings in comparison with a previous version, if appropriate, are indicated with the symbol # in the left margin.

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## 1. PRODUCT AND COMPANY IDENTIFICATION

### 1.1. IDENTIFICATION OF THE PRODUCT

Product name: **5135E**  
Chemical family: ketone-based ink  
Former name: not applicable

### 1.2. COMPANY IDENTIFICATION

#### Head office:

Imaje S.A.  
9, rue Gaspard Monge - BP 110  
26501 Bourg-lès-Valence cedex  
France  
Tel.: (33) 4 75 75 55 00 - Fax: (33) 4 75 82 98 10  
<http://www.imaje.com>

#### Supplier:

(if different from Imaje S.A.)

#### IMAJE USA

1650 Airport Road, Suite 101  
Kennesaw, GA 30144  
United States  
Phone : 770 421 7700  
Fax : 770 421 7702

### 1.3. EMERGENCY TELEPHONE NUMBERS

Imaje S.A.: (33) 4 75 75 55 00  
INRS\* (Orfila): (33) 1 45 42 59 59

## # 2. COMPOSITION / INFORMATION ON INGREDIENTS

Product: preparation

Hazardous component	CAS* No.	EINECS* No.	Index No.	% (weight)	Symbol(s)	Nature of special risks
Butanone	78-93-3	201-159-0	606-002-00-3	75 - 85	F - Xi	Highly flammable Irritating to eyes Repeated exposure may cause skin dryness or cracking
Cellulose nitrate	9004-70-0		603-037-01-3	< 10	F	Vapours may cause drowsiness and dizziness Highly flammable



**Reference:**

**5135E**

**Designation:**

**INK - BLACK**

<p>A mixture of: tert-alkyl(C12-C14)ammonium bis[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphthalenolato(2-)]-chromate(1-); tert-alkyl(C12-C14)ammonium bis[1-[(2-hydroxy-4-nitrophenyl)azo]-2-naphthalenolato(2-)]-chromate(1-); tert-alkyl(C12-C14)ammonium bis[1-[[5-(1,1-dimethylpropyl)-2-hydroxy-3-nitrophenyl]azo]-2-naphthalenolato(2-)]-chromate(1-); tert-alkyl(C12-C14)ammonium [[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphthalenolato(2-)]-[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphthalenolato(2-)]]-chromate(1-); tert-alkyl(C12-C14)ammonium [[1-[[5-(1,1-dimethylpropyl)-2-hydroxy-3-nitrophenyl]azo]-2-naphthalenolato(2-)]-[1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphthalenolato(2-)]]-chromate(1-); tert-alkyl(C12-C14)ammonium ((1-(4(or 5)-nitro-2-oxidophenylazo)-2-naphtholato)(1-(3-nitro-2-oxido-5-pentylphenylazo)-2-naphtholato))chromate(1-)</p>	117527-94-3	403-720-7	611-044-00-0	< 10	N	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
Propan-2-ol	67-63-0	200-661-7	603-117-00-0	< 5	F - Xi	Highly flammable Irritating to eyes Vapours may cause drowsiness and dizziness

The unlisted components are not considered to be hazardous according to amended Directive 67/548/EEC\*.

### 3. HAZARDS IDENTIFICATION

#### 3.1. ADVERSE HUMAN HEALTH AND ENVIRONMENTAL EFFECTS

Irritating to eyes.  
Repeated exposure may cause skin dryness or cracking.  
Vapours may cause drowsiness and dizziness.  
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### 3.2. PHYSICAL AND CHEMICAL HAZARDS

Highly flammable.  
Leaks of gas or spills of liquid can readily form flammable mixtures at temperatures at or above the flash point.

See also heading 11 "TOXICOLOGICAL INFORMATION".

#### 4. FIRST-AID MEASURES

##### 4.1. INHALATION

Using proper respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention.

##### 4.2. SKIN CONTACT

Flush with large amounts of water; use soap if available. Remove grossly contaminated clothing, including shoes, and launder before reuse. Consult a doctor, if irritation persists.

##### 4.3. EYE CONTACT

Immediately flush eyes with large amounts of water for at least 15 minutes. Get prompt medical attention.

##### 4.4. INGESTION

If swallowed, do not induce vomiting. Keep at rest. Get prompt medical attention.

See also heading 8 "EXPOSURE CONTROLS / PERSONAL PROTECTION".

#### 5. FIRE-FIGHTING MEASURES

Use water spray to cool fire exposed surfaces and to protect personnel. Shut off "fuel" to fire. If a leak or spill has not ignited, use water spray to disperse the vapours and to protect men attempting to stop a leak. Either allow fire to burn under controlled conditions or extinguish with alcohol type foam or dry chemical extinguishers. Try to cover liquid spills with foam. Do not use water extinguisher in case of printer fire.

See also heading 10 "STABILITY AND REACTIVITY".

#### 6. ACCIDENTAL RELEASE MEASURES

Eliminate sources of ignition. Warn occupants of downwind areas of fire and explosion hazard. Prevent liquid from entering sewers, watercourses or low areas. Keep public away. Shut off source if possible to do so without hazard. Advise authorities if product has entered a watercourse or sewer or has contaminated soil or vegetation. Take measures to minimize the effect on the ground water. Contain spilled liquid with sand or earth. Dilute contained spill with water. Recover by pumping (use an explosion-proof or hand pump) or with a suitable absorbent. If liquid is too viscous for pumping, scrape up with shovels or pails and place in suitable containers for recycle or disposal. Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

See also heading 13 "DISPOSAL CONSIDERATIONS".

#### 7. HANDLING AND STORAGE

##### 7.1. HANDLING

Handle containers with care. Open slowly in order to control possible pressure release. Do not handle or open near an open flame, sources of heat or sources of ignition. Do not pressurize, cut, heat or weld containers. Empty product containers may contain product residue. Do not reuse empty containers without commercial cleaning or reconditioning. Container remains hazardous when empty. Continue to observe all precautions.

##### 7.2. STORAGE

Keep container closed. Store in a cool, well-ventilated place away from incompatible materials. Do not store near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. The floor of the premises must be incombustible, impermeable and act like a reservoir so that in case of breaking, liquid will not spill outside.

Keep product in its original packaging.

Storage temperature: < 35 °C (95 °F).

See also heading 8 "EXPOSURE CONTROLS / PERSONAL PROTECTION".

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

8.1. ENGINEERING MEASURES

The use of mechanical dilution ventilation is recommended whenever this product is used in a confined space, is heated above ambient temperature or otherwise to maintain ambient concentration below the recommended threshold exposure limits. Use explosion-proof ventilation equipment.

8.2. CONTROL PARAMETERS

**European Community:**

	Limit value (8 hours)	Limit value (short-term)
Butanone	200 ppm (600 mg/m <sup>3</sup> )	300 ppm (900 mg/m <sup>3</sup> )
Propan-2-ol		400 ppm (980 mg/m <sup>3</sup> )

**USA:**

	TLV*/TWA*	TLV*/STEL*
Butanone	200 ppm (590 mg/m <sup>3</sup> )	300 ppm (885 mg/m <sup>3</sup> )
Propan-2-ol	200 ppm	400 ppm

8.3. PERSONAL PROTECTIVE EQUIPMENT

**Respiratory protection:**

Where concentrations in air may exceed the limits given in this section, it is recommended to use a half face filter mask to protect from overexposure by inhalation.

**Hand protection:**

When handling this product, it is recommended to wear chemical resistant gloves (butyl rubber). Gloves should be replaced immediately if sign of degradation is observed.

**Eye protection:**

When handling this product, it is recommended to wear splash resistant goggles.  
Allow a washing solution for the eyes.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state and colour:	black liquid
Odour:	ketone
pH (at 20 °C (68 °F)):	not applicable
Melting point:	< - 85 °C (- 121 °F)
Boiling point:	> 75 °C (167 °F)
Flash point (in a closed cup):	about - 9 °C (16 °F)
Autoignition temperature:	> 400 °C (752 °F)
Explosion properties (volume % in air):	1.8 < < 12.0
Vapour pressure:	13.3 kPa at 25 °C (77 °F) (butanone)
Vapour density ( / air):	> 1
Density (at 20 °C (68 °F)):	0.86 < < 0.87
Water solubility:	partial
n-octanol / water partition coefficient (log P(o/w)):	0.26 (butanone)

Nota: the flash point of the preparation has not been determined. The flash point indicated is the one of the solvent with the lowest value.

**10. STABILITY AND REACTIVITY**

Stability: stable  
 Hazardous polymerization: no  
 Hazardous reactions with (incompatibility): strong oxidizing agents  
 Hazardous decomposition products: none

## 11. TOXICOLOGICAL INFORMATION

### 11.1. ACUTE TOXICITY

#### Inhalation:

Vapour concentrations above recommended exposure levels may be irritating to the eyes and the respiratory tract, may cause headaches and dizziness, could be anaesthetic and may have other central nervous system effects.

LC<sub>50</sub>\* (rat, 4 hours) > 9000 ppm (butanone)

#### Skin contact:

Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

LD<sub>50</sub>\* (rabbit) = 13 g/kg (butanone)

#### Eye contact:

Irritating and will injure eye tissue if not removed promptly.

#### Ingestion:

Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary oedema.

LD<sub>50</sub>\* (rat) = 3000 mg/kg (butanone)

### 11.2. CHRONIC TOXICITY

There is no evidence that exposure to butanone alone causes progressive or irreversible neurotoxic effects. However, simultaneous over-exposure to butanone and n-hexane can potentiate the known irreversible effects of n-hexane.

### 11.3. OTHER INFORMATION

Avoid exposure for pregnant women.

#

## 12. ECOLOGICAL INFORMATION

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### 12.1. BUTANONE

WGK\* 1

#### Mobility:

This substance is relatively volatile.

#### Degradability:

Readily biodegradable.

#### Ecotoxicity:

LC<sub>50</sub>\* (fishes, 96 hours) = 4600 mg/l

EC<sub>50</sub>\* (daphnia, 48 hours) = 7060 mg/l

EC<sub>50</sub>\* (bacteria, 16 hours) = 1150 mg/l

**16. OTHER INFORMATION**

**Abbreviations:**

EEC: European Economic Community  
ISO: International Organization for Standardization  
INRS: Institut national de recherche et de sécurité  
CAS: Chemical Abstracts Service  
EINECS: European inventory of existing commercial chemical substances  
TLV: Threshold limit value  
TWA: Time weighted average  
STEL: Short-term exposure limit  
LC<sub>50</sub>\*: Lethal concentration 50%  
LD<sub>50</sub>\*: Lethal dose 50%  
WGK: Wassergefährdungsklasse  
EC<sub>50</sub>\*: Effect concentration 50%  
ADR: European Agreement concerning the international carriage of dangerous goods by road  
UN: United Nations  
IMDG: International Maritime Dangerous Goods  
IBC: Intermediate bulk container  
IATA: International Air Transport Association  
ERG: Emergency Response Drill  
EC: European Community  
NFPA: National Fire Protection Association

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of Imaje S.A. company's knowledge and believed accurate and reliable as of the date indicated. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. Finally, it remains the responsibility of the customer to provide a safe workplace and to comply with all applicable laws and regulations.

This safety data sheet is in accordance with amended Directive 91/155/EEC\* and with International Standard ISO\* 11014-1.

The changed headings in comparison with a previous version, if appropriate, are indicated with the symbol # in the left margin.

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## 1. PRODUCT AND COMPANY IDENTIFICATION

### 1.1. IDENTIFICATION OF THE PRODUCT

Product name: **5191**  
Chemical family: ketone-based additive  
Former name: not applicable

### 1.2. COMPANY IDENTIFICATION

#### Head office:

Imaje S.A.  
9, rue Gaspard Monge - BP 110  
26501 Bourg-lès-Valence cedex  
France  
Tel.: (33) 4 75 75 55 00 - Fax: (33) 4 75 82 98 10  
<http://www.imaje.com>

#### Supplier:

(if different from Imaje S.A.)

#### IMAJE USA

1650 Airport Road, Suite 101  
Kennesaw, GA 30144  
United States  
Phone : 770 421 7700  
Fax : 770 421 7702

### 1.3. EMERGENCY TELEPHONE NUMBERS

Imaje S.A.: (33) 4 75 75 55 00  
INRS\* (Orfila): (33) 1 45 42 59 59

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

Product: preparation

Hazardous component	CAS* No.	EINECS* No.	Index No.	% (weight)	Symbol(s)	Nature of special risks
Butanone	78-93-3	201-159-0	606-002-00-3	> 90	F - Xi	Highly flammable Irritating to eyes Repeated exposure may cause skin dryness or cracking Vapours may cause drowsiness and dizziness

The unlisted components are not considered to be hazardous according to amended Directive 67/548/EEC\*.

## 3. HAZARDS IDENTIFICATION

### 3.1. ADVERSE HUMAN HEALTH AND ENVIRONMENTAL EFFECTS

Irritating to eyes.  
Repeated exposure may cause skin dryness or cracking.  
Vapours may cause drowsiness and dizziness.

### 3.2. PHYSICAL AND CHEMICAL HAZARDS

Highly flammable.  
Leaks of gas or spills of liquid can readily form flammable mixtures at temperatures at or above the flash point.

See also heading 11 "TOXICOLOGICAL INFORMATION".

	<b>Reference:</b>	<b>5191</b>
	<b>Designation:</b>	<b>ADDITIVE</b>

#### 4. FIRST-AID MEASURES

##### 4.1. INHALATION

Using proper respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention.

##### 4.2. SKIN CONTACT

Flush with large amounts of water; use soap if available. Remove grossly contaminated clothing, including shoes, and launder before reuse. Consult a doctor, if irritation persists.

##### 4.3. EYE CONTACT

Immediately flush eyes with large amounts of water for at least 15 minutes. Get prompt medical attention.

##### 4.4. INGESTION

If swallowed, do not induce vomiting. Keep at rest. Get prompt medical attention.

See also heading 8 "EXPOSURE CONTROLS / PERSONAL PROTECTION".

#### 5. FIRE-FIGHTING MEASURES

Use water spray to cool fire exposed surfaces and to protect personnel. Shut off "fuel" to fire. If a leak or spill has not ignited, use water spray to disperse the vapours and to protect men attempting to stop a leak. Either allow fire to burn under controlled conditions or extinguish with alcohol type foam or dry chemical extinguishers. Try to cover liquid spills with foam. Do not use water extinguisher in case of printer fire.

See also heading 10 "STABILITY AND REACTIVITY".

#### 6. ACCIDENTAL RELEASE MEASURES

Eliminate sources of ignition. Warn occupants of downwind areas of fire and explosion hazard. Prevent liquid from entering sewers, watercourses or low areas. Keep public away. Shut off source if possible to do so without hazard. Advise authorities if product has entered a watercourse or sewer or has contaminated soil or vegetation. Take measures to minimize the effect on the ground water. Contain spilled liquid with sand or earth. Dilute contained spill with water. Recover by pumping (use an explosion-proof or hand pump) or with a suitable absorbent. If liquid is too viscous for pumping, scrape up with shovels or pails and place in suitable containers for recycle or disposal. Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

See also heading 13 "DISPOSAL CONSIDERATIONS".

#### 7. HANDLING AND STORAGE

##### 7.1. HANDLING

Handle containers with care. Open slowly in order to control possible pressure release. Do not handle or open near an open flame, sources of heat or sources of ignition. Do not pressurize, cut, heat or weld containers. Empty product containers may contain product residue. Do not reuse empty containers without commercial cleaning or reconditioning. Container remains hazardous when empty. Continue to observe all precautions.

##### 7.2. STORAGE

Keep container closed. Store in a cool, well-ventilated place away from incompatible materials. Do not store near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. The floor of the premises must be incombustible, impermeable and act like a reservoir so that in case of breaking, liquid will not spill outside.

Keep product in its original packaging.

Storage temperature: < 35 °C (95 °F).

See also heading 8 "EXPOSURE CONTROLS / PERSONAL PROTECTION".

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1. ENGINEERING MEASURES

The use of mechanical dilution ventilation is recommended whenever this product is used in a confined space, is heated above ambient temperature or otherwise to maintain ambient concentration below the recommended threshold exposure limits. Use explosion-proof ventilation equipment.

### 8.2. CONTROL PARAMETERS

#### European Community:

	Limit value (8 hours)	Limit value (short-term)
Butanone	200 ppm (600 mg/m <sup>3</sup> )	300 ppm (900 mg/m <sup>3</sup> )

#### USA:

	TLV*/TWA*	TLV*/STEL*
Butanone	200 ppm (590 mg/m <sup>3</sup> )	300 ppm (885 mg/m <sup>3</sup> )

### 8.3. PERSONAL PROTECTIVE EQUIPMENT

#### Respiratory protection:

Where concentrations in air may exceed the limits given in this section, it is recommended to use a half face filter mask to protect from overexposure by inhalation.

#### Hand protection:

When handling this product, it is recommended to wear chemical resistant gloves (butyl rubber). Gloves should be replaced immediately if sign of degradation is observed.

#### Eye protection:

When handling this product, it is recommended to wear splash resistant goggles.  
Allow a washing solution for the eyes.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state and colour:	pink liquid
Odour:	ketone
pH (at 20 °C (68 °F)):	not applicable
Melting point:	< - 85 °C (- 121 °F)
Boiling point:	> 75 °C (167 °F)
Flash point (in a closed cup):	about - 9 °C (16 °F)
Autoignition temperature:	> 500 °C (932 °F)
Explosion properties (volume % in air):	1.8 < < 11.5
Vapour pressure:	13.3 kPa at 25 °C (77 °F) (butanone)
Vapour density (/ air):	> 1
Density (at 20 °C (68 °F)):	0.80 < < 0.81
Water solubility:	partial
n-octanol / water partition coefficient (log P(o/w)):	0.26 (butanone)

Nota: the flash point of the preparation has not been determined. The flash point indicated is the one of the solvent with the lowest value.

## 10. STABILITY AND REACTIVITY

Stability: stable  
 Hazardous polymerization: no  
 Hazardous reactions with (incompatibility): strong oxidizing agents  
 Hazardous decomposition products: none

## 11. TOXICOLOGICAL INFORMATION

### 11.1. ACUTE TOXICITY

#### Inhalation:

Vapour concentrations above recommended exposure levels may be irritating to the eyes and the respiratory tract, may cause headaches and dizziness, could be anaesthetic and may have other central nervous system effects.

LC<sub>50</sub>\* (rat, 4 hours) > 9000 ppm (butanone)

#### Skin contact:

Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

LD<sub>50</sub>\* (rabbit) = 13 g/kg (butanone)

#### Eye contact:

Irritating and will injure eye tissue if not removed promptly.

#### Ingestion:

Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary oedema.

LD<sub>50</sub>\* (rat) = 3000 mg/kg (butanone)

### 11.2. CHRONIC TOXICITY

There is no evidence that exposure to butanone alone causes progressive or irreversible neurotoxic effects. However, simultaneous over-exposure to butanone and n-hexane can potentiate the known irreversible effects of n-hexane.

### 11.3. OTHER INFORMATION

Avoid exposure for pregnant women.

## 12. ECOLOGICAL INFORMATION

### 12.1. BUTANONE

WGK\* 1

#### Mobility:

This substance is relatively volatile.

#### Degradability:

Readily biodegradable.

#### Ecotoxicity:

LC<sub>50</sub>\* (fishes, 96 hours) = 4600 mg/l

EC<sub>50</sub>\* (daphnia, 48 hours) = 7060 mg/l

EC<sub>50</sub>\* (bacteria, 16 hours) = 1150 mg/l

## 13. DISPOSAL CONSIDERATIONS

Empty containers should be taken for recycling, recovery or disposal through a suitably qualified or licensed contractor. This product is not suitable for disposal by either landfill or via municipal sewers, drains, natural streams or rivers. This product can be burned directly in appropriate equipment.

Care should in any case be taken to ensure compliance with national and local regulations.

# **14. TRANSPORT INFORMATION**

14.1. LAND (ADR\*)

Name of substance: methyl ethyl ketone

UN* No.	Class	Classification code	Packing group	Label(s)	Special provisions	Limited quantities	Packaging		
							Instructions	Special provisions	Mixed packing provisions
1193	3	F1	II	3		LQ4	P001 / IBC02 / R001		MP19

Transport category	Special provisions for carriage			Hazard identification No.
	Packages	Loading, unloading and handling	Operation	
2			S2 / S20	33

Total exemption: 3 L per inner packaging and 30 kg gross per package  
 Partial exemption: 333 L

14.2. SEA (IMDG\* CODE)

Proper shipping name: methyl ethyl ketone

UN* No.	Class	Subsidiary risk(s)	Packing group	Special provisions	Limited quantities	Packing / IBC*		Emergency schedule No.	Stowage and segregation
						Instructions	Provisions		
1193	3	-	II	-	1 L	P001 / IBC02	- / -	F-E, S-D	Category B

Marine pollutant: no

14.3. AIR (IATA\* REGULATIONS)

Proper shipping name: methyl ethyl ketone

UN* No.	Class	Subsidiary risk(s)	Hazard label(s)	Packing group	Passenger and cargo aircraft		Cargo aircraft only		Special provisions	ERG* code
					Packing instructions	Maxi net quantity / package	Packing instructions	Maxi net quantity / package		
1193	3	-	3	II	Y305 / 305	1 L / 5 L	307	60 L	-	3L

**15. REGULATORY INFORMATION**

15.1. EUROPEAN COMMUNITY

Governing Directives: amended Directive 67/548/EEC\* (dangerous substances) and amended Directive 1999/45/EC\* (dangerous preparations)

Label name: 5191

Symbols and indications of danger:



F: Highly flammable



Xi: Irritant

Nature of special risks:

- R11: Highly flammable
- R36: Irritating to eyes
- R66: Repeated exposure may cause skin dryness or cracking
- R67: Vapours may cause drowsiness and dizziness

**Safety advice:**

S9: Keep container in a well-ventilated place  
S16: Keep away from sources of ignition – No smoking

15.2. USA

NFPA*	Butanone
Health	1
Flammability	3
Reactivity	0

In the USA, the hazardous components of this product are mentioned in the following lists:

- 1F: Toxic Substance Control Act (TSCA) Section 8(d) Health and Safety Data Reporting Rule Substances
- 5B: Clean Air Act Section 111 Volatile Organic Compounds
- 5D: Clean Air Act Section 112 Statutory Air Pollutants (1990 Amendments)
- 6: National Institute for Occupational Safety and Health (NIOSH) Recommendation Substances
- 7A: Resource Conservation and Recovery Act (RCRA) Hazardous Substances
- 7B: RCRA Hazardous Constituents for Groundwater Monitoring
- 8A: Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances
- 8C: Superfund Amendments and Reauthorization Act (SARA) Title III Section 313 Toxic Chemicals
- 8D: SARA Title III Section 110 Priority List of CERCLA Hazardous Substances
- 9A: Occupational Safety and Health Administration (OSHA) Air Contaminants (Tables Z1, Z2 and Z3)
- 9D: American Council of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) Chemicals
- 9H: OSHA Table Z-1-A [revoked]
- 11B: Drug Enforcement Administration (DEA) Precursor and Essential Chemicals - Essential chemical
- 13A: Department of Transportation (DOT) Hazardous Materials
- 13B: DOT Hazardous Substances Other Than Radionuclides; and Radionuclides
- MA1: Massachusetts Substance List
- NJ1: New Jersey Right To Know Hazardous Substance List
- PA1E: Pennsylvania Hazardous Substance List - Environmental hazard

In Canada, the hazardous components of this product are mentioned in the following lists:

- CN1: Canadian Workplace Hazardous Materials Information System (WHMIS) Ingredient Disclosure List - Ingredient must be disclosed at concentration of 1 %

The user of the product must refer to official regulations concerning his obligations.

<b>16. OTHER INFORMATION</b>
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**Abbreviations:**

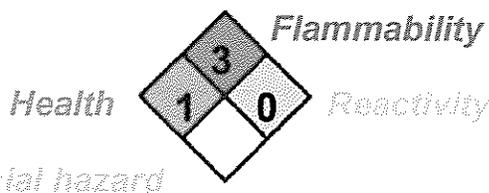
- EEC: European Economic Community
- ISO: International Organization for Standardization
- INRS: Institut national de recherche et de sécurité
- CAS: Chemical Abstracts Service
- EINECS: European inventory of existing commercial chemical substances
- TLV: Threshold limit value
- TWA: Time weighted average
- STEL: Short-term exposure limit
- LC<sub>50</sub>\*: Lethal concentration 50%
- LD<sub>50</sub>\*: Lethal dose 50%
- WGK: Wassergefährdungsklasse
- EC<sub>50</sub>\*: Effect concentration 50%
- ADR: European Agreement concerning the international carriage of dangerous goods by road
- UN: United Nations
- IMDG: International Maritime Dangerous Goods
- IBC: Intermediate bulk container
- IATA: International Air Transport Association
- ERG: Emergency Response Drill
- EC: European Community
- NFPA: National Fire Protection Association

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

**Product name** : 16-8700  
**Synonyms** : Product code: 16-8700Q  
**Material uses** : Industrial applications: Ink for use in a continuous ink jet process.  
**Emergency telephone number** : Medical: CALL RMPDC, USA (303) 623-5716  
 Transporters: CALL CHEMTREC, USA (800)-424-9300  
**Manufacturer** : Videojet Technologies Inc., 1500 Mittel Boulevard, Wood Dale, IL, 60191-1073 U.S.A  
 Phone: 1-800-843-3610 Fax: 1-800-582-1343  
 Videojet Technologies Europe BV., Strijkviertel 39, 3454 PJ De Meern, The Netherlands.  
 Phone: 31-030-6693000 Fax: 31-030-6693060

## 2. HAZARDS IDENTIFICATION

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



**Emergency overview** : **WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL.** Keep liquid and vapors away from flame, heat, and static discharge sources. Irritant and central nervous system depressant: Avoid inhalation of vapors and contact with eyes and skin. May be fatal or cause blindness if swallowed. If inhaled remove to fresh air. If splashed in eyes flush with water. If contacts skin flush with water and wash with mild soap. In medical emergency call Poison Control Center (USA 1-303-623-5716) and a physician. Read MSDS before using.

**Effects and symptoms**

<u>Chemical name</u>	<u>Effects and symptoms</u>
1) Methanol	May be irritating to eyes, skin and respiratory system. Absorbed through skin. May be fatal or cause blindness if swallowed. Can cause central nervous system (CNS) depression. Vapors may cause drowsiness and dizziness. Toxic by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Danger of very serious irreversible effects. May cause damage to the following organs: optic nerve.
2) Propylene glycol monomethyl ether	May be irritating to eyes, skin and respiratory system. Can cause central nervous system (CNS) depression. Vapors may cause drowsiness and dizziness. Can cause gastrointestinal disturbances.
3) Benzyl alcohol	Harmful by inhalation and if swallowed. Slightly irritating to the eyes and skin. Absorbed through skin. Can cause central nervous system (CNS) depression. Vapors may cause drowsiness and dizziness. Repeated exposure may cause skin dryness or cracking. Repeated or prolonged contact with irritants may cause dermatitis. May cause skin sensitization.
4) 2-PYRROLIDINONE, 1-METHYL-	Severely irritating to eyes. Irritating to skin. Absorbed through skin. Repeated exposure may cause skin dryness or cracking. Repeated or prolonged contact with irritants may cause dermatitis. Can cause gastrointestinal disturbances.

*Continued on next page*

- 5) Ethanol, 2-(2-ethoxyethoxy)- Slightly irritating to the eyes. Absorbed through skin. Harmful if swallowed. Can cause central nervous system (CNS) depression. Adverse health effects could include the following: acidosis, methemoglobinemia, cyanosis.
- 6) C.I. Basic violet # 3 Severely irritating to eyes. Risk of serious damage to eyes. Slightly irritating to the skin. Harmful if swallowed. Can cause gastrointestinal disturbances. Limited evidence of a carcinogenic effect.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Hazardous ingredients

<u>CAS number</u>	<u>Percent (%)</u>	<u>Chemical name</u>
1) 67-56-1	65 - 80	Methanol
2) 107-98-2	3 - 7	Propylene glycol monomethyl ether
3) 100-51-6	1 - 3	Benzyl alcohol
4) 872-50-4	1 - 3	2-PYRROLIDINONE, 1-METHYL-
5) 111-90-0	1 - 3	Ethanol, 2-(2-ethoxyethoxy)-
6) 548-62-9	1 - 3	C.I. Basic violet # 3

Occupational exposure limits, if available, are listed in section 8.

### 4. FIRST AID MEASURES

- Inhalation** : If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
- Ingestion** : Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.
- Skin contact** : In case of contact, immediately flush skin with plenty of water while removing contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if symptoms appear.
- Eye contact** : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

### 5. FIRE-FIGHTING MEASURES

- Extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Special fire-fighting procedures** : Highly flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
- Unusual fire/explosion hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. This material is harmful to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon oxides  
nitrogen oxides
- Protection of fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

*Continued on next page*

## 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material.
- Methods for cleaning up** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

## 7. HANDLING AND STORAGE

- Handling** : Store and use away from heat, sparks, open flame or any other ignition source. Use only with adequate ventilation. Use non-sparking tools. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Do not get in eyes or on skin or clothing. Do not reuse container. Use suitable protective equipment (section 8). Obtain special instructions before use. Refer to and follow equipment manual for operation and maintenance procedures.
- Storage** : Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Keep away from sources of ignition.
- Packaging materials** : Use original container.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Occupational exposure limits

<u>Chemical name</u>	<u>Occupational exposure limits</u>
1) Methanol	1) United States ACGIH TLV STEL 15 minutes 250 ppm (Skin) (2004) 2) United States ACGIH TLV TWA 8 hours 200 ppm (Skin) (2004) 3) United States OSHA PEL TWA 8 hours 200 ppm
2) Propylene glycol monomethyl ether	1) United States ACGIH TWA 8 hours 100 ppm (1999) 2) United States ACGIH STEL 15 minutes 150 ppm (1999) 3) United States MSHA TWA 8 hours 100 ppm (1973)
3) Benzyl alcohol	No exposure limit value known.
4) 2-PYRROLIDINONE, 1-METHYL-	1) United States AIHA WEEL TWA 8 hours 10 ppm (Skin) (2004)
5) Ethanol, 2-(2-ethoxyethoxy)-	1) United States AIHA WEEL 8 hours 25 ppm
6) C.I. Basic violet # 3	No exposure limit value known.

- Engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

### Personal protective equipment

*Continued on next page*

- Respiratory system** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Skin and body** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state** : Liquid.
- Color** : Black.
- Odor threshold** : Highest known value: 100 ppm. Weighted average: 100 ppm.
- Boiling point** : Lowest known value: 63 °C. Weighted average: 82 °C. (Decomposes on heating.)
- Melting point** : May start to solidify at the following temperature: 0 °C. Weighted average: -89 °C.
- Specific gravity** : 0.88 (Water = 1)
- Vapor density** : Lowest known value: <0.6. Highest known value: >1.1. (Air = 1)
- Vapor pressure** : Highest known value: 97 mm Hg at 20°C. Weighted average: 82 mm Hg at 20°C.
- Evaporation rate (butyl acetate = 1)** : Highest known value: 2.1. Weighted average: 1.8.
- Solubility** : Easily soluble in the following materials: cold water, hot water, methanol, diethyl ether, n-octanol and acetone.
- Flash point** : 11 °C.
- Auto-ignition temperature** : Lowest known value: 204 °C. Weighted average: 373 °C.
- Flammable limits** : Lowest known value: 1.2%. Highest known value: 36.0%.
- Volatility (w/w)** : 79 %.
- VOC Volatility (w/w) - less exempt volatile.** : 77 %.

## 10. STABILITY AND REACTIVITY

- Stability** : The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
- Conditions to avoid** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11. TOXICOLOGICAL INFORMATION

Chemical name                      Toxicological information

*Continued on next page*

- |                                      |                                                                                                                                                                                                                                                                               |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1) Methanol                          | 1) LD50 Oral Rat: 5628 mg/kg<br>2) LD50 Oral Rabbit: 14200 mg/kg<br>3) LD50 Oral Mouse: 7300 mg/kg<br>4) LD50 Dermal Rabbit: 15800 mg/kg<br>5) LDLo Oral Human: 143 mg/kg<br>6) LDLo Oral Man: 6422 mg/kg<br>7) LDLo Oral Dog: 7500 mg/kg<br>8) LDLo Dermal Monkey: 393 mg/kg |
| 2) Propylene glycol monomethyl ether | 1) LD50 Oral Rabbit: 5700 mg/kg<br>2) LD50 Oral Mouse: 11700 mg/kg<br>3) LD50 Oral Dog: 5000 mg/kg<br>4) LD50 Dermal Rabbit: 13000 mg/kg<br>5) LDLo Oral Rat: 3739 mg/kg<br>6) LD50 Oral Rabbit: 5700 mg/kg<br>7) LD50 Oral Mouse: 11700 mg/kg                                |
| 3) Benzyl alcohol                    | 1) LD50 Oral Rat: 1230 mg/kg<br>2) LD50 Oral Rabbit: 1040 mg/kg<br>3) LD50 Oral Guinea pig: 2500 mg/kg<br>4) LD50 Dermal Rabbit: 2000 mg/kg<br>5) LDLo Dermal Cat: 10000 mg/kg<br>6) LD50 Oral Rat: 1230 mg/kg                                                                |
| 4) 2-PYRROLIDINONE, 1-METHYL-        | 1) LD50 Oral Rat: 3914 mg/kg<br>2) LD50 Oral Mouse: 5130 mg/kg<br>3) LD50 Dermal Rabbit: 8000 mg/kg                                                                                                                                                                           |
| 5) Ethanol, 2-(2-ethoxyethoxy)-      | 1) LD50 Oral Rat: 5445 mg/kg<br>2) LD50 Oral Rabbit: 3620 mg/kg<br>3) LD50 Oral Mouse: 6534 mg/kg<br>4) LD50 Dermal Rabbit: 4158 mg/kg<br>5) LD50 Oral Rat: 5445 mg/kg                                                                                                        |
| 6) C.I. Basic violet # 3             | 1) LD50 Oral Rat: 420 mg/kg<br>2) LD50 Oral Mouse: 96 mg/kg<br>3) LD50 Oral Rabbit: 150 mg/kg<br>4) LDLo Oral Guinea pig: 10 mg/kg                                                                                                                                            |

## 12. ECOLOGICAL INFORMATION

Ecotoxicity : Harmful to aquatic life with long lasting effects  
 Heavy Metals : Total concentration: Pb, Hg, Cd, Cr(VI) < 100 ppm  
 California, VOC Content : 695 grams volatile organic / liter less water or exempt volatile.

## 13. DISPOSAL CONSIDERATIONS

Waste disposal : Waste must be disposed of according to applicable regulations. Small quantities of waste may best be handled using a 'lab pack' service offered by a licensed waste disposal firm.

## 14. TRANSPORT INFORMATION

UN number : UN1210  
 Proper shipping name : Printing Ink  
 TDG Class : 3  
 Packing group : II

*Continued on next page*

## 15. REGULATORY INFORMATION

CERCLA: Hazardous substances.	: The following components are listed: Methanol (65 - 80%); Ethanol, 2-(2-ethoxyethoxy)- (1 - 3%)
SARA 313	: The following components are listed: Methanol (65 - 80%); 2-PYRROLIDINONE, 1-METHYL- (1 - 3%); Ethanol, 2-(2-ethoxyethoxy)- (1 - 3%)
California Prop. 65	: This product contains a chemical or chemicals known to the state of California to cause birth defects or other reproductive harm. The following components are listed: 2-PYRROLIDINONE, 1-METHYL- (1 - 3%); Toluene (< 0.00003%).
Tariff Code - harmonized system	: 3215.11 Printing ink: Black. USA ...00.60 EU ...00.00

## 16. OTHER INFORMATION

Date of issue	: January 18, 2008
Prepared by	: Garth Studebaker, CSP
Version	: 7.02

### Notice to reader

*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.*

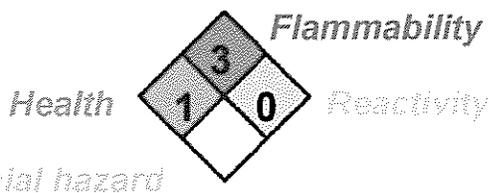
English (US)

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

Product name : 16-8705  
 Synonyms : Product code: 16-8705B, 16-8705F, 16-8705Q, 16-8705Q4  
 Material uses : Industrial applications: Make-Up fluid for use in a continuous ink jet process. Replaces solvents lost through evaporation during normal ink drop recycling process.  
 Emergency telephone number : Medical: CALL RMPDC, USA (303) 623-5716  
 Transporters: CALL CHEMTREC, USA (800)-424-9300  
 Manufacturer : Videojet Technologies Inc., 1500 Mittel Boulevard, Wood Dale, IL, 60191-1073 U.S.A  
 Phone: 1-800-843-3610 Fax: 1-800-582-1343  
 Videojet Technologies Europe BV., Strijkviertel 39, 3454 PJ De Meern, The Netherlands.  
 Phone: 31-030-6693000 Fax: 31-030-6693060

## 2. HAZARDS IDENTIFICATION

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



Emergency overview : **WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL.** Keep liquid and vapors away from flame, heat, and static discharge sources. Irritant and central nervous system depressant: Avoid inhalation of vapors and contact with eyes and skin. May be fatal or cause blindness if swallowed. If inhaled remove to fresh air. If splashed in eyes flush with water. If contacts skin flush with water and wash with mild soap. In medical emergency call Poison Control Center (USA 1-303-623-5716) and a physician. Read MSDS before using.

Effects and symptoms

<u>Chemical name</u>	<u>Effects and symptoms</u>
1) Methanol	May be irritating to eyes, skin and respiratory system. Absorbed through skin. May be fatal or cause blindness if swallowed. Can cause central nervous system (CNS) depression. Vapors may cause drowsiness and dizziness. Toxic by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Danger of very serious irreversible effects. May cause damage to the following organs: optic nerve.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous ingredients

<u>CAS number</u>	<u>Percent (%)</u>	<u>Chemical name</u>
1) 67-56-1	95 - <100	Methanol

Occupational exposure limits, if available, are listed in section 8.

*Continued on next page*

## 4. FIRST AID MEASURES

- Inhalation** : If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
- Ingestion** : Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.
- Skin contact** : In case of contact, immediately flush skin with plenty of water while removing contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if symptoms appear.
- Eye contact** : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

## 5. FIRE-FIGHTING MEASURES

- Extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Special fire-fighting procedures** : Highly flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
- Unusual fire/explosion hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon oxides
- Protection of fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

*Continued on next page*

## 7. HANDLING AND STORAGE

- Handling** : Store and use away from heat, sparks, open flame or any other ignition source. Use only with adequate ventilation. Use non-sparking tools. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Do not get in eyes or on skin or clothing. Do not reuse container. Use suitable protective equipment (section 8). Refer to and follow equipment manual for operation and maintenance procedures.
- Storage** : Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Keep away from sources of ignition.
- Packaging materials** : Use original container.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Occupational exposure limits

<u>Chemical name</u>	<u>Occupational exposure limits</u>
1) Methanol	1) United States ACGIH TLV STEL 15 minutes 250 ppm (Skin) (2004) 2) United States ACGIH TLV TWA 8 hours 200 ppm (Skin) (2004) 3) United States OSHA PEL TWA 8 hours 200 ppm

- Engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

### Personal protective equipment

- Respiratory system** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Skin and body** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state</b>	: Liquid.
<b>Color</b>	: Clear.
<b>Odor threshold</b>	: Highest known value: 100 ppm. Weighted average: 100 ppm.
<b>Boiling point</b>	: Lowest known value: 63 °C. Weighted average: 63 °C.
<b>Melting point</b>	: May start to solidify at the following temperature: -97 °C. Weighted average: -97 °C.
<b>Specific gravity</b>	: 0.79 (Water = 1)
<b>Vapor density</b>	: >1.1 (Air = 1)
<b>Vapor pressure</b>	: Highest known value: 97 mm Hg at 20°C. Weighted average: 97 mm Hg at 20°C.
<b>Evaporation rate (butyl acetate = 1)</b>	: 2.1

*Continued on next page*

**Solubility** : Easily soluble in the following materials: cold water, hot water, methanol, diethyl ether, n-octanol and acetone.

**Flash point** : 11 °C.

**Auto-ignition temperature** : Lowest known value: 385 °C. Weighted average: 385 °C.

**Flammable limits** : Lowest known value: 6.0%. Highest known value: 36.0%.

**Volatility (w/w)** : 99 %.

**VOC Volatility (w/w) - less exempt volatile.** : 99 %.

## 10. STABILITY AND REACTIVITY

**Stability** : The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.

**Conditions to avoid** : No specific data.

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11. TOXICOLOGICAL INFORMATION

### Chemical name

1) Methanol

### Toxicological information

- 1) LD50 Oral Rat: 5628 mg/kg
- 2) LD50 Oral Rabbit: 14200 mg/kg
- 3) LD50 Oral Mouse: 7300 mg/kg
- 4) LD50 Dermal Rabbit: 15800 mg/kg
- 5) LDLo Oral Human: 143 mg/kg
- 6) LDLo Oral Man: 6422 mg/kg
- 7) LDLo Oral Dog: 7500 mg/kg
- 8) LDLo Dermal Monkey: 393 mg/kg

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity** : No known significant effects or critical hazards.

**Heavy Metals** : Total concentration: Pb, Hg, Cd, Cr(VI) < 100 ppm

**California, VOC Content** : 789 grams volatile organic / liter less water or exempt volatile.

## 13. DISPOSAL CONSIDERATIONS

**Waste disposal** : Waste must be disposed of according to applicable regulations. Small quantities of waste may best be handled using a 'lab pack' service offered by a licensed waste disposal firm.

## 14. TRANSPORT INFORMATION

**UN number** : UN1230

**Proper shipping name** : Methanol solution

**TDG Class** : 3 (6.1)

**Packing group** : II

## 15. REGULATORY INFORMATION

**CERCLA: Hazardous substances.** : The following components are listed: Methanol (95 - <100%)

**SARA 313** : The following components are listed: Methanol (95 - <100%)

**California Prop. 65** : This product contains a chemical or chemicals known to the state of California to cause birth defects or other reproductive harm. The following components are listed: 2-PYRROLIDINONE, 1-METHYL- (0.01 - 0.1%).

*Continued on next page*

Tariff Code - harmonized : 3814.00 Organic composite solvents and thinners, not elsewhere specified or system included.  
USA ...50.90  
EU ...90.90

## 16. OTHER INFORMATION

Date of issue : January 11, 2008  
Prepared by : Garth Studebaker, CSP  
Version : 7.01

### Notice to reader

*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.*

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English (US)