





|  |   |   |   |
|--|---|---|---|
| <b>NFPA Classification</b>   | <b>DOT / TDG Pictograms</b>   | <b>WHMIS Classification</b>   | <b>PROTECTIVE CLOTHING</b>  |
| Health  Flammability<br>Reactivity<br>Specific Hazard |  |  |  |

## Section I. Chemical Product and Company Identification

|   |   |  |  |
|---|---|--|--|
| <b>PRODUCT NAME/ TRADE NAME</b> Sulfuric Acid   |   |  |  |
| <b>SYNONYM</b> Oil of vitriol, Dipping acid, Sulphuric acid   | <b>MSDS NUMBER:</b> 01886   |  |  |
| <b>CHEMICAL NAME</b> Sulfuric acid  | <b>REVISION NUMBER</b> 4.7  |  |  |
| <b>CHEMICAL FAMILY</b> Inorganic acid.  | <b>MSDS prepared by</b> February 5, 2006<br>the Environment,<br>Health and Safety<br>Department on:   |  |  |
| <b>CHEMICAL FORMULA</b> H <sub>2</sub> SO <sub>4</sub>  | <b>24 HR EMERGENCY TELEPHONE NUMBER:</b><br><br><b>Transportation: 1-800-792-8311</b><br><b>Medical: 1-888-670-8123</b>   |  |  |
| <b>MATERIAL USES</b> Agricultural use: Manufacture of chemical products.<br>Industrial applications: Manufacture of inorganic products. |   |  |  |
| <b>MANUFACTURER</b><br>Agrium<br>North American Wholesale<br>13131 Lake Fraser Drive, S.E.<br>Calgary, Alberta, Canada<br>T2J 7E8       | <b>SUPPLIER</b><br>Agrium<br>North American Wholesale<br>13131 Lake Fraser Drive, S.E.<br>Calgary, Alberta, Canada, T2J 7E8<br><br>Agrium U.S. Inc.<br>Suite 1400, 4582 South Ulster St.<br>Denver, Colorado, U.S.A., 80237 |  |  |

## Section II. Hazardous Ingredients

| NAME  | CAS #   | Exposure Limits (ACGIH)   |             |                        |                  |                        |          | % by Weight |
|---|---|---------------------------|-------------|------------------------|------------------|------------------------|----------|-------------|
|   |   | TLV-TWA mg/m <sup>3</sup> | TLV-TWA ppm | STEL mg/m <sup>3</sup> | STEL ppm         | CEIL mg/m <sup>3</sup> | CEIL ppm |             |
| Sulfuric acid   | 7664-93-9   | 1                         |             | 3                      |                  |                        |          | 94-96       |
| ACGIH TLV notations:<br>---- No assigned TLV<br>(C) - Ceiling - the concentration not to be exceeded at any time<br>(I) - measured as the Inhalable fraction of the aerosol<br>(R) - measured as the Respirable fraction of the aerosol<br>(T) - measured as the Thoracic fraction of the aerosol |   |                           |             |                        |                  |                        |          |             |
| <b>TOXICOLOGICAL DATA ON INGREDIENTS</b>  | <b>Sulfuric acid TFI Product Testing Program:</b><br>Acute oral LD <sub>50</sub> , OECD 401 protocol: 2,140 mg/kg rat<br>Acute inhalation LC <sub>50</sub> , 1 hr, guinea pig: 18-61mg/m <sup>3</sup><br>Acute dermal toxicity, NOAEL: <5%<br>Ecotoxicity:<br>Acute toxicity to fish, zebra fish, 96hr LC <sub>50</sub> , OECD 203 protocol, 500mg/L (pH 2.29)<br>Acute toxicity to invertebrates, Daphnia, 24hr ISO 6341 15 protocol EC <sub>50</sub> = 29 mg/L (pH 3.5) |                           |             |                        |                  |                        |          |             |
|   | <b>OHM/TADS - Oil and Hazardous Materials/Technical Assistance Data System</b><br>Freshwater toxicity:  |                           |             |                        |                  |                        |          |             |
|   | Conc. PPM   | Expos (Hr)                | Species     | Effect                 | Test Environment |                        |          |             |

Continued on Next Page

|         |          |                |         |                     |  |
|---------|----------|----------------|---------|---------------------|--|
| 1000    | .5-.75   | Goldfish       | Lethal  | HARD                |  |
| 169     | .86-1.16 | Goldfish       | Lethal  | HARD                |  |
| 143     | 2.5-5.3  | Goldfish       | Lethal  | SOFT                |  |
| 143     | 2-2.3    | Goldfish       | Lethal  | HARD                |  |
| 138     | 5-6      | Goldfish       | Lethal  | SOFT                |  |
| 138     | >> 4     | Goldfish       | Lethal  | HARD                |  |
| 134     | 6.2-96   | Goldfish       | Lethal  | SOFT                |  |
| 59      | 1-1.25   | Goldfish       | Lethal  | VERY SOFT           |  |
| 50      | 1-3      | Daphnia magna  | Lethal  | SOFT                |  |
| 29      | 24-72    | Daphnia magna  | Harmful | SOFT, PH 5          |  |
| 33.11   |          | Bivalve larvae | Harmful |                     |  |
| 88      | 64       | Daphnia magna  | Harmful | LAKE ERIE           |  |
| 138     |          | Daphnia magna  | Harmful |                     |  |
| 1.2     |          | Sunfish        | Lethal  |                     |  |
| 6.0-8   | 6        | Minnows        | Lethal  | DISTILLED, 20 deg C |  |
| 6.25    | 24       | Trout          | Lethal  |                     |  |
| 7.36    | 60       | Bluegill       | Lethal  | DISTILLED           |  |
| 24.5    | 24       | Bluegill       | Lethal  |                     |  |
| 26.0    | 0.25     | Minnows        | Lethal  | TAP                 |  |
| 42      | 96       | Mosquito fish  | TLM     | TURBID              |  |
| 49      | 48       | Bluegill       | TLM     | TAP, 20 deg C       |  |
| 59.0    | 1-1.25   | Goldfish       | Lethal  | SOFT, PH 3.2        |  |
| 71.2    |          | Pickrel        | Lethal  |                     |  |
| 80.1    |          | Whitefish      | Lethal  |                     |  |
| 110-120 | 6        | Minnows        | Lethal  | HARD, 20 deg C      |  |
| 138.0   | 4        | Goldfish       | Lethal  | HARD, PH 4          |  |
| 29      | 24-72    | Daphnia magna  | Lethal  | SOFT WATER          |  |
| 0.1     | 168      | Daphnia magna  | Lethal  | SOFT WATER          |  |
| 50      | 1-3      | Daphnia magna  | Lethal  | STATIC-SOFT         |  |
| 30      | 24       | Daphnia magna  | Lethal  | STATIC-SOFT         |  |
| 29      | 24-72    | Daphnia magna  | Lethal  | STATIC-SOFT         |  |
| 0.1     | 168      | Daphnia magna  | Lethal  | STATIC-SOFT         |  |
| 1000    | .5-.75   | Goldfish       | Lethal  |                     |  |
| 143     | 2.5-5    | Goldfish       | Lethal  |                     |  |
| 134     | 6-96     | Goldfish       | Lethal  |                     |  |

## Saltwater toxicity:

| Conc.<br>PPM | Expos<br>(Hr) | Species  | Effect     | Test Environment |
|--------------|---------------|----------|------------|------------------|
| 100          | 120           | OYSTERS  | 18% Lethal |                  |
| 42.5         | 48            | PRAWN    | LC50       | AERATED          |
| 80-90        | 48            | SHRIMP   | LC50       | AERATED          |
| 200-500      | 48            | COCKLE   | LC50       | AERATED          |
| 80-90        | 48            | POGGE    | LC50       | AERATED          |
| 100-330      | 48            | FLOUNDER | LC50       | AERATED          |
| 90           | 48            | CRAB     | LC50       | AERATED          |

## Toxicity to animals:

| Dose      | Time | Species    | Param | Route |
|-----------|------|------------|-------|-------|
| 2140mg/kg |      | RAT        | LD50  | ORL   |
| 500mg/m3  |      | RAT        | LCLO  | INH   |
| 549mg/m3  |      | Mouse      | LCLO  | INH   |
| 165mg/m3  |      | Mouse      | LCLO  | INH   |
| 500mg/m3  | 8 hr | Mouse      | LC50  | INH   |
| 50mg/m3   | 8 hr | Guinea pig | LC50  | INH   |

**Section III. Hazards Identification.****POTENTIAL ACUTE HEALTH EFFECTS**

Sulfuric acid can be corrosive to the skin, eyes, nose, mucous membranes, respiratory tract and gastrointestinal tract, or any tissue with which it comes in contact. Concentrated sulfuric acid chars the tissue by removing water. Ingestion may cause hemorrhaging, necrosis and perforation in the gastrointestinal tract, typically more severe in the stomach and intestinal tract than in the esophagus. Severe and fatal skin burns can occur with necrosis and scarring. The eye is especially sensitive to the corrosive effects and can be destroyed. Respiratory effects of acute exposure include tickling in the nose and throat, coughing, sneezing, reflex bronchospasm, dyspnea, and pulmonary edema. Death may be from sudden circulatory collapse, glottic or esophageal edema, perforation of the stomach, gastric hemorrhage, or delayed stricture. Milder exposures can cause irritation of the eyes, skin, mucous membranes and respiratory and digestive tracts.

**POTENTIAL CHRONIC HEALTH EFFECTS**

The mucous membranes, the respiratory and the digestive systems are subject to irritant and corrosive effects from chronic exposures. Changes in pulmonary function may occur, along with chronic bronchitis and emphysema.

Erosion of dental enamel has been reported with chronic exposure to concentrations of 12 to 35 mg/m<sup>3</sup>. Conjunctivitis is also a common finding from chronic exposures. Sulfates, particularly bisulfate, are known to be sensitizers for man, and persons previously sensitized to bisulfate may show some reactivity to sulfuric acid. Sulfuric acid has been reported to produce immunological alterations from occupational exposures. Repeated inhalation of sulfuric acid aerosols reduced the immunocompetence of pulmonary macrophages.

Epidemiological studies of workers chronically exposed to sulfuric acid have suggested increased risk for upper respiratory cancers, especially laryngeal cancer. The International Agency for Research in Cancer and NTP has concluded that occupational exposure to strong inorganic acid mists containing sulfuric acid is carcinogenic to man, however, sulfuric acid itself is not considered a confirmed human carcinogen at this time. The epidemiological studies which provided the basis for the IARC and NTP assessments were confounded by exposure to alkyl sulfates (known animal carcinogens), other chemicals, and smoking. Based on the evidence from all human and animal studies, no definitive relationship has been shown between increased risk of respiratory tract cancer and sulfuric acid alone. Sulfuric acid can react with other substances to form mutagenic and possibly carcinogenic products such as alkyl sulfates.

**Section IV. First Aid Measures****EYE CONTACT**

Immediately flush eyes with water for 30 minutes or longer keeping eyelids open. Obtain immediate medical attention. Continue to flush eyes, if possible, while transporting to medical care.

**MINOR SKIN CONTACT**

In case of contact with the chemical, remove contaminated clothing as quickly as possible while protecting your own hands and body. Place the person under a deluge shower. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Use warm water if available. If irritation persists, seek medical attention.

**EXTENSIVE SKIN CONTACT**

Immediately flush skin with water while removing contaminated clothing and shoes. Use warm water if available and continue flushing for at least 30 minutes. **GET MEDICAL ATTENTION.** Contaminated clothing should be discarded in a manner which limits further exposure.

**MINOR INHALATION**

Using appropriate respiratory protection, remove the affected individual from the area of overexposure. Loosen tight clothing. Allow the person to rest in a well ventilated area. Give artificial respiration if breathing has stopped. Obtain immediate medical attention.

**SEVERE INHALATION**

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

**SLIGHT INGESTION**

Do not induce vomiting. Quickly transport the person to an emergency care facility. Removal of the substance from the stomach must be done by medical personnel. If tolerated, give no more than 1 cup of milk or water (or 1/2 cup for children) to rinse the mouth and throat and dilute the stomach contents.

If spontaneous vomiting does occur, lower the head so that the vomit will not reenter the mouth and throat. Rinse mouth with water.

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**EXTENSIVE INGESTION** No additional information.

### Section V. Fire and Explosion Data

|   |  |
|---|--|
| <b>THE PRODUCT IS</b>   | Non-flammable.   |
| <b>AUTO-IGNITION TEMPERATURE</b>                              | Not applicable.  |
| <b>FLASH POINT</b>  | Not applicable.  |
| <b>FLAMMABILITY LIMITS</b>                                    | Not applicable.  |
| <b>PRODUCTS OF COMBUSTION</b>                                 | Sulfur oxides (SO <sub>2</sub> , SO <sub>3</sub> ...). Can decompose at high temperatures forming toxic gases.   |
| <b>FIRE HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES</b>      | Not applicable. Non-flammable. Decomposes to produce toxic and flammable gases.  |
| <b>EXPLOSION HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES</b> | Sulfuric acid will react with many metals to generate highly flammable and explosive hydrogen gas.   |
| <b>FIRE FIGHTING MEDIA AND INSTRUCTIONS</b>                   | <p>FIRES INVOLVING SMALL AMOUNT OF COMBUSTIBLES MAY BE SMOTHERED WITH SUITABLE DRY CHEM. USE WATER ON COMBUSTIBLES BURNING IN VICINITY OF THIS MATERIAL BUT USE CARE AS WATER APPLIED DIRECTLY TO THIS ACID RESULTS IN EVOLUTION OF HEAT AND CAUSES SPATTERING.</p> <p>Self-contained breathing apparatus and chemical protective clothing should be worn but they do not provide thermal protection. Structural firefighter's protective clothing does not provide effective protection with these materials.</p> |
| <b>SPECIAL REMARKS ON FIRE HAZARDS</b>                        | Do not allow water to enter container because of violent reaction. Container explosion may occur under fire conditions or when heated. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Flammable hydrogen gas may be produced on prolonged contact with metals such as aluminum, tin, lead and zinc.   |
| <b>SPECIAL REMARKS ON EXPLOSION HAZARDS</b>                   | No additional information.   |

### Section VI. Accidental Release Measures

|                    |   |
|--------------------|---|
| <b>SMALL SPILL</b> | Corrosive liquid. Warn personnel to move away. Isolate hazard area. Observe protective equipment requirements. Keep unnecessary and unprotected personnel from entering. Stop leak if possible to do so without risk. Prevented from entering sewage or drainage systems and bodies of water. Contain spill with dry earth, sand or other non-combustible material. Neutralize spill by slowly and carefully applying powdered limestone to spill. Allow time to neutralize. Use appropriate tools to put the solid material in a convenient waste disposal container. Finish cleaning the spill area with running water. Ensure disposal is in compliance with government requirements and ensure conformity to local regulations. Consult your environmental advisor regarding disposal alternatives. |
| <b>LARGE SPILL</b> | Corrosive liquid. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Clean up spills immediately, observing precautions in Protective Equipment section. Stop leak if possible to do so without risk. Dike with dry earth, sand or other non-combustible material. Neutralize spill by applying crushed limestone. Allow time for neutralization. Recover limestone and contaminated soil and place in waste disposal containers. DO NOT touch spilled material. Ensure disposal is in compliance with government requirements and local regulations. Call 24 hour transportation emergency number for assistance on spill control, recovery and disposal.  |

**Section VII. Handling and Storage**

|                    |  |
|--------------------|--|
| <b>PRECAUTIONS</b> | Keep locked up. Keep container dry. DO NOT ingest. Do not breathe fumes, or spray. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin and eyes. Keep away from incompatible materials. Wear chemical resistant gloves, a chemical suit, rubber boots, and chemical safety goggles plus a face shield. When using do not eat, drink or smoke. Ensure that an eyewash station and safety shower is near the place of use. |
| <b>STORAGE</b>     | Will corrode metallic surfaces. Store in a polyethylene or coated fibreboard drum using a strong polyethylene inner package. Corrosive materials should be stored in a separate safety storage cabinet or room. Keep container tightly closed in a cool, well-ventilated place. Keep locked up and out of reach of children.   |

**Section VIII. Exposure Controls/Personal Protection**

|   |  |
|---|--|
| <b>ENGINEERING CONTROLS</b>                         | Provide exhaust ventilation or other engineering controls to keep the vapour concentrations below their respective threshold limit values. Ensure that an eyewash station and safety shower is near the work location.   |
| <b>PERSONAL PROTECTION</b>                          | The selection of personal protective equipment varies, depending upon conditions of use. Appropriate protective clothing should be chosen that will prevent any possibility of body contact. Use impervious protective butyl rubber gloves, boots, and coveralls or an acid suit. Eye and face protection (safety goggles and face shield) should be worn. Emergency showers and eyewashes should be provided. Wash off all contaminated chemical protective clothing with water before removing them. |
| <b>PERSONAL PROTECTION IN CASE OF LARGE RELEASE</b> | In the event of possible exposure to high concentrations of mists, or work which may require contact with liquid acid or acid residues, use a fully impervious EPA Level C chemical protective suit or better. The use of a full facepiece respirator with P-100 filter cartridges is recommended to prevent overexposure by inhalation. For U.S. work sites where respiratory protection is required, ensure that a respiratory protection program meeting 29 CFR 1910.134 is in place.               |
| <b>EXPOSURE LIMITS</b>                              | ACGIH TLV-TWA Sulfuric Acid: 0.2 mg/m <sup>3</sup> as the Thoracic fraction of the aerosol<br>OSHA PEL Sulfuric Acid: 8Hr TWA 1 mg/m <sup>3</sup><br>Alberta OEL TWA Sulfuric Acid: 1 mg/m <sup>3</sup> , STEL 3 mg/m <sup>3</sup><br><br>Federal, State, and Provincial exposure limits may vary. Consult local officials for acceptable exposure limits in your jurisdiction.  |

**Section IX. Physical and Chemical Properties**

|   |  |                               |  |
|---|--|-------------------------------|--|
| <b>PHYSICAL STATE AND APPEARANCE</b>                      | Liquid. (Thick oily liquid. (Hygroscopic))   |                               |  |
| <b>MOLECULAR WEIGHT</b>                                   | 98.08  | <b>COLOR</b>                  | Colorless.                                 |
| <b>pH (10% SOLN/WATER)</b>                                | 0.3 (1N sol'n)   | <b>ODOR</b>                   | Sulfurous. (Odourless when cold) (Slight.) |
| <b>BOILING POINT</b>                                      | 281°C (537.8°F)(93.2% H <sub>2</sub> SO <sub>4</sub> )                                     | <b>ODOR THRESHOLD</b>         | >1 ppm                                     |
| <b>MELTING POINT</b>                                      | -29°C (-20.2°F) (93.2% H <sub>2</sub> SO <sub>4</sub> )                                    | <b>TASTE</b>                  | Toxic by ingestion. (Strong.)              |
| <b>CRITICAL TEMPERATURE</b>                               | Not available.   | <b>VOLATILITY</b>             | 0% (v/v). 0% (w/w).                        |
| <b>SPECIFIC GRAVITY g/cc</b>                              | 1.854 (Water = 1)(93.2% H <sub>2</sub> SO <sub>4</sub> )                                   | <b>SOLUBILITY</b>             | Easily soluble in cold water, hot water.   |
| <b>BULK DENSITY kg/m<sup>3</sup> ; lbs/ft<sup>3</sup></b> | 1854 kg/m <sup>3</sup> ; 115.7 lbs/ft <sup>3</sup> ; 15.5 lbs/gal (US); 18.6 lbs/gal (UK). | <b>DISPERSION PROPERTIES</b>  | See solubility in water.                   |
| <b>VAPOR PRESSURE</b>                                     | 0.001 mm of Hg (@ 20°C)  | <b>WATER/OIL DIST. COEFF.</b> | Soluble or dispersable in water.           |
| <b>VAPOR DENSITY</b>                                      | 3.4 (Air = 1)  |                               |  |

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**Section X. Stability and Reactivity Data**

|   |  |
|---|--|
| STABILITY                               | The product is stable.   |
| INSTABILITY TEMPERATURE                 | Not available.   |
| CONDITIONS OF INSTABILITY               | No additional information.   |
| INCOMPATIBILITY WITH VARIOUS SUBSTANCES | Sulfuric acid reacts violently with water or alcohol, liberating large amounts of heat; ALWAYS ADD ACID TO WATER OR OTHER DILUENT. Extremely reactive or incompatible with reducing agents, organic materials, metals, alkalis, moisture. Highly reactive with combustible materials. Slightly reactive with oxidizing agents. |
| CORROSIVITY                             | Extremely corrosive to copper, aluminum, zinc. Corrosive to mild steel, especially when diluted to below 90 % concentration. Slightly corrosive to 304 stainless steel. Non-corrosive to glass or 316 stainless steel. Consult a metallurgical specialist to ensure compatibility of sulfuric acid with handling equipment.    |
| SPECIAL REMARKS ON REACTIVITY           | Reacts violently with water especially when water is added to the product. Avoid contact with heat. If heated above 340 °C sulfuric acid will decompose to sulfur dioxide, sulfur trioxide and sulfuric acid fumes.  |
| SPECIAL REMARKS ON CORROSIVITY          | Contact your sales representative or metallurgical specialist to ensure compatability with system equipment.   |

**Section XI. Toxicological Information**

|  |   |
|--|---|
| SIGNIFICANT ROUTES OF EXPOSURE               | Ingestion. Skin contact. Inhalation.  |
| TOXICITY TO ANIMALS                          | See Section II.   |
| SPECIAL REMARKS ON TOXICITY TO ANIMALS       | Toxic for humans or animal life. Toxic to fish and other water organisms. Toxic to wildlife and domestic animals. |
| OTHER EFFECTS ON HUMANS                      | No additional information.  |
| SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS | No additional remark.   |
| SPECIAL REMARKS ON OTHER EFFECTS ON HUMANS   | No additional information.  |

**Section XII. Ecological Information**

|  |   |
|--|---|
| ECOTOXICITY                                    | No additional information.                                      |
| BOD and COD                                    | Not available.  |
| PRODUCTS OF DEGRADATION                        | Sulfur oxides (SO <sub>2</sub> , SO <sub>3</sub> ...). sulfates |
| TOXICITY OF THE PRODUCTS OF DEGRADATION        | The products of degradation are as toxic as the product itself. |
| SPECIAL REMARKS ON THE PRODUCTS OF DEGRADATION | No additional information.                                      |

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**Section XIII. Disposal Considerations****WASTE DISPOSAL OR RECYCLING**

Recover and place material in a suitable container for intended use or disposal. Ensure disposal complies with government requirements and local regulations.

**Section XIV. Transport Information****DOT / TDG CLASSIFICATION**

TDG/DOT CLASS 8: Corrosive liquid.

**PIN and Shipping Name**

Proper shipping name: Sulfuric acid  
PIN #: UN1830 PGII

**SPECIAL PROVISIONS FOR TRANSPORT**

A3, A7, B3, B83, B84, IB2, N34, T8, TP2, TP12

**DOT (U.S.A) (Pictograms)****Section XV. Other Regulatory Information and Pictograms****OTHER REGULATIONS**

SARA TITLE III:

1. Designation, Reportable Quantities, Notification - 40 CFR 302 EXTREMELY HAZARDOUS SUBSTANCES LIST: Listed  
Reportable Quantity: 1000 pounds
2. Emergency Planning and Notification - 40 CFR Part 355 (Appendices A and B): Threshold Planning Quantity: 1000 pounds
3. SECTION 313 Specific Toxic Chemical Listings - 40 CFR Part 372: Listed

CERCLA HAZARDOUS SUBSTANCES LIST: Listed (EPA, 1992)

1. Designation, Reportable Quantities, Notification - 40 CFR 302  
Reportable Quantity (Statutory): 1000 pounds  
Reportable Quantity (Final): 1000 pounds (454 kg)

TSCA INVENTORY: Listed

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): This product or its components are on the Domestic Substances List (DSL), and are acceptable for use in Canada under the provisions of CEPA.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.

**OTHER CLASSIFICATIONS****HCS (U.S.A.)**

HCS CLASS: Highly toxic.  
HCS CLASS: DANGEROUS MAY CAUSE CANCER.  
HCS CLASS: Irritating substance.  
HCS CLASS: Target organ effects.  
HCS CLASS: Corrosive liquid.

**DSCL (EEC)**

R35- Causes severe burns. Corrosive.

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

Hazards presented under acute emergency conditions only:

Health

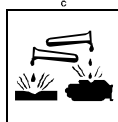


Fire Hazard  
Reactivity

Specific Hazard

**TDG (Pictograms - Canada)**

DSCL (Europe)  
(Pictograms)



ADR (Europe)  
(Pictograms)



### Section XVI. Other Information

#### REFERENCES

- Transportation of Dangerous Goods Act and Clear Language Regulations, current revision.
- Canada Gazette Part II, Vol. 122, No. 2 Registration SOR/88-64 31 December, 1987 Hazardous Products Act "Ingredient Disclosure List".
- Domestic Substances List, Canadian Environmental Protection Act.
- 29 CFR Part 1910
- 33 CFR Parts 151, 153, 154, 156
- 40 CFR Parts 1-799
- 46 CFR Part 153
- 49 CFR Parts 1-199
- American Conference of Governmental Industrial Hygienists, Threshold Limit Values for Chemical Substances, 2005.
- NFPA 704, National Fire Codes Online, National Fire Protection Association, current edition at time of MSDS preparation.
- Corrosion Data Survey, Sixth Edition, 1985, National Association of Corrosion Engineers
- TOMES® System: Heitland G & Hurlbut KM (Eds) (electronic version): MICROMEDEX, Greenwood Village, Colorado, USA. Available at: <http://csi.micromedex.com> (2005). The TOMES® System includes MEDITEXT® Medical Management; HAZARDTEXT® Hazard Management; INFOTEXT® Documents; ERG2000 Emergency Response Guidebook Documents; REPROTEXT®: Heitland G & Hurlbut KM (Eds); CHRIS Hazardous Chemical Data: U.S. Department of Transportation, U.S. Coast Guard, Washington, D.C. (2005); HSDB: Hazardous Substances Data Bank. National Library of Medicine, Bethesda, Maryland (2005); IRIS: Integrated Risk Information System. U.S. Environmental Protection Agency, Washington, D.C. (2005); NIOSH: Pocket Guide to Chemical Hazards. National Institute for Occupational Safety and Health, Cincinnati, Ohio (2005); OHM/TADS: Oil and Hazardous Materials Technical Assistance Data System. U.S. Environmental Protection Agency, Washington, D.C. (2005); REPROTOX®: Scialli A.R. Georgetown University Medical Center and Reproductive Toxicology Center, Columbia Hospital for Women Medical Center, Washington, D.C. (2005); RTECS®: Registry of Toxic Effects of Chemical Substances. National Institute for Occupational Safety and Health, Cincinnati, Ohio (2005); and SHEPARDS: Shepard T.H.: Shepard's Catalog of Teratogenic Agents (2005).
- The Fertilizer Institute Product Testing Program Results, March 2003
- Alberta Workplace Health and Safety, Occupational Health and Safety Code

#### OTHER SPECIAL CONSIDERATIONS

No additional information.

FOR FURTHER SAFETY, HEALTH, OR ENVIRONMENTAL INFORMATION ON THIS PRODUCT, CONTACT

AGRIUM  
Wholesale Environment, Health and Safety  
Telephone (780) 998-6906 or Fax (780) 998-6677

#### NOTICE TO READER

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