# Concentrated Descaling Engine Flush

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision Date: 10/23/2015 Date of issue: 06/04/2015 Version: 2.2

## SECTION 1: IDENTIFICATION

### Product Identifier

**Product Name:** Concentrated Descaling Engine Flush

**Product Code:** 926XX

### Intended Use of the Product

Stain Remover

### Name, Address, and Telephone of the Responsible Party

**Company**

Star brite Inc.
4041 SW 47th Avenue
Fort Lauderdale, FL 33314
(954)587-6280
www.starbrite.com

### Emergency Telephone Number

**Emergency number** : US: (800) 424-9300; International: (703) 527-3887 (CHEMTREC)

## SECTION 2: HAZARDS IDENTIFICATION

### Classification of the Substance or Mixture

**Classification (GHS-US)**

| | |
|---|---|
| Met. Corr. 1 | H290 |
| Acute Tox. 4 (Inhalation:gas) | H332 |
| Skin Irrit. 2 | H315 |
| Eye Dam. 1 | H318 |
| Skin Sens. 1 | H317 |

### Label Elements

**GHS-US Labeling**

**Hazard Pictograms (GHS-US)** :

GHS05 GHS07

**Signal Word (GHS-US)** : Danger

**Hazard Statements (GHS-US)** : H290 - May be corrosive to metals.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H332 - Harmful if inhaled.

**Precautionary Statements (GHS-US)** : P234 - Keep only in original container.
P261 - Avoid breathing gas.
P264 - Wash hands, forearms, and exposed areas thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P280 - Wear eye protection, protective gloves, protective clothing.
P302+P352 - If on skin: Wash with plenty of water.
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a poison center.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P390 - Absorb spillage to prevent material damage.

P406 - Store in corrosive resistant container with a resistant inner liner.
P501 - Dispose of contents/container according to local, regional, national, territorial, provincial, and international regulations.

### Other Hazards

**Other Hazards Not Contributing to the Classification**: May be corrosive to the respiratory tract.

**Unknown Acute Toxicity (GHS-US)** Not available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### Mixture

| Name | Product identifier | % (w/w) | Classification (GHS-US) |
|---|---|---|---|
| Hydrogen chloride | (CAS No) 7647-01-0 | 5 - 10 | Met. Corr. 1, H290<br>Acute Tox. 3 (Inhalation:gas), H331<br>Skin Corr. 1B, H314<br>Eye Dam. 1, H318<br>STOT SE 3, H335 |
| Oxalic acid | (CAS No) 144-62-7 | 1 - 5 | Acute Tox. 4 (Oral), H302<br>Acute Tox. 4 (Dermal), H312<br>Skin Corr. 1A, H314<br>Eye Dam. 1, H318 |
| Dibutyl thiourea | (CAS No) 109-46-6 | 0.1 - 1 | Acute Tox. 4 (Oral), H302<br>Skin Irrit. 2, H315<br>Eye Irrit. 2A, H319<br>Skin Sens. 1, H317<br>Aquatic Chronic 3, H412 |

Full text of H-phrases: see section 16

## SECTION 4: FIRST AID MEASURES

### Description of First Aid Measures

**General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).
**Inhalation:** Using proper respiratory protection, immediately move the exposed person to fresh air. Immediately call a POISON CENTER or doctor/physician.
**Skin Contact:** Remove contaminated clothing. Immediately flush skin with plenty of water for at least 15 minutes. Wash contaminated clothing before reuse. Obtain medical attention if irritation develops or persists.
**Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 60 minutes. Immediately call a POISON CENTER or doctor/physician.
**Ingestion:** Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

### Most Important Symptoms and Effects Both Acute and Delayed

**General:** Harmful if inhaled. Causes serious eye damage. Causes skin irritation. Exposure may produce an allergic reaction.
**Inhalation:** Harmful if inhaled.
**Skin Contact:** May cause an allergic skin reaction. Causes skin irritation.
**Eye Contact:** Causes serious eye damage.
**Ingestion:** May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.
**Chronic Symptoms:** Exposure may produce an allergic reaction.

### Indication of Any Immediate Medical Attention and Special Treatment Needed

If medical advice is needed, have product container or label at hand.

## SECTION 5: FIRE-FIGHTING MEASURES

### Extinguishing Media

**Suitable Extinguishing Media:** Use extinguishing media appropriate for surrounding fire.
**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

### Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Not flammable.
**Explosion Hazard:** Product is not explosive.
**Reactivity:** Corrosive to metals. Upon contact with metal it may evolve explosive hydrogen gas. Corrodes aluminum at a rate of 70746 mm/y; corrodes steel at a rate of 48.8 mm/y.

### Advice for Firefighters

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Do not allow run-off from fire fighting to enter drains or water courses.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products**: Carbon oxides (CO, $CO_2$). Chlorine gas. Sodium oxides.

**Reference to Other Sections** Refer to section 9 for flammability properties.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Do not allow contact with metals. Do not get in eyes, on skin, or on clothing. Do NOT breathe (vapor, mist, gas).

**For Non-Emergency Personnel**

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

**For Emergency Personnel**

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Ventilate area. Stop leak if safe to do so.

**Environmental Precautions** Prevent entry to sewers and public waters.

### Methods and Material for Containment and Cleaning Up

**For Containment:** Cautiously neutralize spilled liquid. Absorb and contain spill with inert material, then place in suitable container.

**Methods for Cleaning Up:** Clear up spills immediately and dispose of waste safely.

### Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see item 13.

## SECTION 7: HANDLING AND STORAGE

### Precautions for Safe Handling

**Additional Hazards When Processed:** Corrosive vapors are released.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

### Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Comply with applicable regulations.

**Storage Conditions:** Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Storage areas should be periodically checked for corrosion and integrity.

**Incompatible Materials:** Strong acids. Strong oxidizers. Metals.

**Special Rules on Packaging:** Store in original container or corrosive resistant and/or lined container.

**Specific End Use(s)** Cleaner.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

| **Hydrogen chloride (7647-01-0)** | | |
|---|---|---|
| Mexico | OEL Ceiling (mg/m³) | 7 mg/m³ |
| Mexico | OEL Ceiling (ppm) | 5 ppm |
| USA ACGIH | ACGIH Ceiling (ppm) | 2 ppm |
| USA OSHA | OSHA PEL (Ceiling) (mg/m³) | 7 mg/m³ |
| USA OSHA | OSHA PEL (Ceiling) (ppm) | 5 ppm |
| USA NIOSH | NIOSH REL (ceiling) (mg/m³) | 7 mg/m³ |
| USA NIOSH | NIOSH REL (ceiling) (ppm) | 5 ppm |
| USA IDLH | US IDLH (ppm) | 50 ppm |
| Alberta | OEL Ceiling (mg/m³) | 3 mg/m³ |
| Alberta | OEL Ceiling (ppm) | 2 ppm |
| British Columbia | OEL Ceiling (ppm) | 2 ppm |
| Manitoba | OEL Ceiling (ppm) | 2 ppm |
| New Brunswick | OEL Ceiling (mg/m³) | 7.5 mg/m³ |
| New Brunswick | OEL Ceiling (ppm) | 5 ppm |
| Newfoundland & Labrador | OEL Ceiling (ppm) | 2 ppm |

| | | |
|---|---|---|
| Nova Scotia | OEL Ceiling (ppm) | 2 ppm |
| Nunavut | OEL Ceiling (mg/m³) | 7.5 mg/m³ |
| Nunavut | OEL Ceiling (ppm) | 5 ppm |
| Northwest Territories | OEL Ceiling (mg/m³) | 7.5 mg/m³ |
| Northwest Territories | OEL Ceiling (ppm) | 5 ppm |
| Ontario | OEL Ceiling (ppm) | 2 ppm |
| Prince Edward Island | OEL Ceiling (ppm) | 2 ppm |
| Québec | PLAFOND (mg/m³) | 7.5 mg/m³ |
| Québec | PLAFOND (ppm) | 5 ppm |
| Saskatchewan | OEL Ceiling (ppm) | 2 ppm |
| Yukon | OEL Ceiling (mg/m³) | 7 mg/m³ |
| Yukon | OEL Ceiling (ppm) | 5 ppm |

| **Oxalic acid (144-62-7)** | | |
|---|---|---|
| Mexico | OEL TWA (mg/m³) | 1 mg/m³ |
| Mexico | OEL STEL (mg/m³) | 2 mg/m³ |
| USA ACGIH | ACGIH TWA (mg/m³) | 1 mg/m³ |
| USA ACGIH | ACGIH STEL (mg/m³) | 2 mg/m³ |
| USA OSHA | OSHA PEL (TWA) (mg/m³) | 1 mg/m³ |
| USA NIOSH | NIOSH REL (TWA) (mg/m³) | 1 mg/m³ |
| USA NIOSH | NIOSH REL (STEL) (mg/m³) | 2 mg/m³ |
| USA IDLH | US IDLH (mg/m³) | 500 mg/m³ |
| Alberta | OEL STEL (mg/m³) | 2 mg/m³ |
| Alberta | OEL TWA (mg/m³) | 1 mg/m³ |
| British Columbia | OEL STEL (mg/m³) | 2 mg/m³ |
| British Columbia | OEL TWA (mg/m³) | 1 mg/m³ |
| Manitoba | OEL STEL (mg/m³) | 2 mg/m³ |
| Manitoba | OEL TWA (mg/m³) | 1 mg/m³ |
| New Brunswick | OEL STEL (mg/m³) | 2 mg/m³ |
| New Brunswick | OEL TWA (mg/m³) | 1 mg/m³ |
| Newfoundland & Labrador | OEL STEL (mg/m³) | 2 mg/m³ |
| Newfoundland & Labrador | OEL TWA (mg/m³) | 1 mg/m³ |
| Nova Scotia | OEL STEL (mg/m³) | 2 mg/m³ |
| Nova Scotia | OEL TWA (mg/m³) | 1 mg/m³ |
| Nunavut | OEL STEL (mg/m³) | 2 mg/m³ |
| Nunavut | OEL TWA (mg/m³) | 1 mg/m³ |
| Northwest Territories | OEL STEL (mg/m³) | 2 mg/m³ |
| Northwest Territories | OEL TWA (mg/m³) | 1 mg/m³ |
| Ontario | OEL STEL (mg/m³) | 2 mg/m³ |
| Ontario | OEL TWA (mg/m³) | 1 mg/m³ |
| Prince Edward Island | OEL STEL (mg/m³) | 2 mg/m³ |
| Prince Edward Island | OEL TWA (mg/m³) | 1 mg/m³ |
| Québec | VECD (mg/m³) | 2 mg/m³ |
| Québec | VEMP (mg/m³) | 1 mg/m³ |
| Saskatchewan | OEL STEL (mg/m³) | 2 mg/m³ |
| Saskatchewan | OEL TWA (mg/m³) | 1 mg/m³ |
| Yukon | OEL STEL (mg/m³) | 2 mg/m³ |
| Yukon | OEL TWA (mg/m³) | 1 mg/m³ |

## Exposure Controls

**Appropriate Engineering Controls:** Alarm detectors should be used when toxic gases may be released. Provide sufficient ventilation to keep vapors below permissible exposure limit. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

**Personal Protective Equipment:** Protective clothing. Safety glasses. Face shield. Gloves. Insufficient ventilation: wear respiratory protection.

**Materials for Protective Clothing:** Corrosion proof clothing.
**Hand Protection:** Wear chemically resistant protective gloves.
**Eye Protection:** Chemical goggles or face shield.
**Skin and Body Protection:** Wear suitable protective clothing.
**Respiratory Protection:** Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.
**Other Information:** When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on Basic Physical and Chemical Properties

| | | |
|---|---|---|
| **Physical State** | : | Liquid |
| **Appearance** | : | Green |
| **Odor** | : | Characteristic |
| **Odor Threshold** | : | Not available |
| **pH** | : | 1 |
| **Relative Evaporation Rate (butylacetate=1)** | : | Not available |
| **Melting/Freezing Point** | : | Not available |
| **Boiling Point** | : | 100 °C (212 °F) |
| **Flash Point** | : | > 100 °C (212 °F) |
| **Auto-ignition Temperature** | : | Not available |
| **Decomposition Temperature** | : | Not available |
| **Flammability (solid, gas)** | : | Not available |
| **Upper and Lower Flammable Limits** | : | Not available |
| **Vapor Pressure** | : | Not available |
| **Relative Vapor Density at 20 °C** | : | Not available |
| **Relative Density/Specific Gravity** | : | 1.097 at 20 °C (68 °F) (water = 1) |
| **Solubility** | : | Soluble in water. |
| **Partition coefficient: n-octanol/water** | : | Not available |
| **Viscosity** | : | Not available |
| **Explosion Data – Sensitivity to Mechanical Impact** | : | Not expected to present an explosion hazard due to mechanical impact. |
| **Explosion Data – Sensitivity to Static Discharge** | : | Not expected to present an explosion hazard due to static discharge. |

## SECTION 10: STABILITY AND REACTIVITY

**Reactivity:** Corrosive to metals. Upon contact with metal it may evolve explosive hydrogen gas. Corrodes aluminum at a rate of 70746 mm/y; corrodes steel at a rate of 48.8 mm/y.
**Chemical Stability:** Stable under recommended handling and storage conditions (see section 7).
**Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
**Conditions to Avoid:** Direct sunlight. Extremely high or low temperatures. Contact with metallic substances.
**Incompatible Materials:** Strong acids. Strong oxidizers. Metals.
**Hazardous Decomposition Products:** Carbon oxides (CO, $CO_2$). Chlorine gas. Sodium oxides.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects - Product

**Acute Toxicity:** Harmful if inhaled.
**LD50 and LC50 Data:**

| **Concentrated Descaling Engine Flush** | |
|---|---|
| **ATE US (gases)** | 4,500.00 ppmV/4h |

**Skin Corrosion/Irritation:** Causes skin irritation. Product was tested in accordance with 49 CFR 173.137 and was determined to be non corrosive to skin.
**Serious Eye Damage/Irritation:** Causes serious eye damage. (**pH:** 1)
**Respiratory or Skin Sensitization:** May cause an allergic skin reaction.
**Germ Cell Mutagenicity:** Not classified
**Teratogenicity:** Not available
**Carcinogenicity:** Not classified
**Specific Target Organ Toxicity (Repeated Exposure):** Not classified
**Reproductive Toxicity:** Not classified
**Specific Target Organ Toxicity (Single Exposure):** Not classified
**Aspiration Hazard:** Not classified
**Symptoms/Injuries After Inhalation:** Harmful if inhaled. Corrosive to mucus membranes.
**Symptoms/Injuries After Skin Contact:** Causes skin irritation. May cause an allergic skin reaction.
**Symptoms/Injuries After Eye Contact:** Causes serious eye irritation.
**Symptoms/Injuries After Ingestion:** May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.
**Chronic Symptoms:** Exposure may produce an allergic reaction.

**Information on Toxicological Effects - Ingredient(s)**

**LD50 and LC50 Data:**

| **Hydrogen chloride (7647-01-0)** | |
|---|---|
| LD50 Oral Rat | 700 mg/kg |
| LD50 Dermal Rabbit | > 5010 mg/kg |
| LC50 Inhalation Rat (ppm) | 781 ppm/4h (reported as 3124 ppm/1 h) |
| **Oxalic acid (144-62-7)** | |
| LD50 Oral Rat | 375 mg/kg |
| LD50 Dermal Rat | 20000 mg/kg |
| **Hydrogen chloride (7647-01-0)** | |
| IARC Group | 3 |

## SECTION 12: ECOLOGICAL INFORMATION

**Toxicity** Not classified

| **Oxalic acid (144-62-7)** | |
|---|---|
| EC50 Daphnia 1 | 125 - 150 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static]) |

**Persistence and Degradability** Not available

**Bioaccumulative Potential**

| **Oxalic acid (144-62-7)** | |
|---|---|
| BCF fish 1 | (no bioaccumulation) |
| Log Pow | -0.81 (at 30 °C) |

**Mobility in Soil** Not available

**Other Adverse Effects** Avoid release to the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste Disposal Recommendations:** Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.
**Additional Information:** RCRA Waste Code: D002 (Corrosive Material).

## SECTION 14: TRANSPORT INFORMATION

**In Accordance With ICAO/IATA/DOT/TDG/IMDG**

**UN Number**

**UN-No.(DOT)** : 1789
**UN-No. (TDG)** : UN1789
**UN-No. (IMDG)** : 1789
**UN-No.(IATA)** : 1789

**UN Proper Shipping Name**

**Proper Shipping Name (DOT)** : HYDROCHLORIC ACID

**Proper Shipping Name (TDG)** : HYDROCHLORIC ACID
**Proper Shipping Name (IATA)** : HYDROCHLORIC ACID
**Proper Shipping Name (IMDG)** : HYDROCHLORIC ACID
**Transport Document Description (DOT)** : UN1789 HYDROCHLORIC ACID, 8, III
**Transport Document Description (TDG)** : UN1789 HYDROCHLORIC ACID, 8, III
**Transport Document Description (Adr) (IMDG/IATA)** : UN 1789 HYDROCHLORIC ACID, 8, III, (E)

**Transport Hazard Class(es)**

**Department Of Transportation (DOT) Hazard Classes** : 8 - Class 8 - Corrosive material 49 CFR 173.136
**Hazard Labels (DOT)** : 8 - Corrosive


**Packing Group (DOT)** : III - Minor Danger
**DOT Special Provisions (49 CFR 172.102)** : A3 - For combination packaging, if glass inner packaging (including ampoules) are used, they must be packed with absorbent material in tightly closed metal receptacles before packing in outer packaging.
IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).
T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / (1 + a (tr - tf)) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
TP12 - This material is considered highly corrosive to steel.
**DOT Packaging Exceptions (49 Cfr 173.xxx)** : 154
**DOT Packaging Non Bulk (49 Cfr 173.xxx)** : 203
**DOT Packaging Bulk (49 Cfr 173.xxx)** : 241
**TDG Primary Hazard Classes** : 8 - Class 8 - Corrosives
**Hazard Labels (TDG)** : 8 - Corrosive substances


**Packing Group (TDG)** : III - Minor Danger
**Explosive Limit And Limited Quantity Index** : 5
**Passenger Carrying Road Vehicle Or Passenger Carrying Railway Vehicle Index** : 5
**Class (IMDG)** : 8
**Danger Labels (IMDG)** : 8


**Packing Group (IMDG)** : III
**Class (IATA)** : 8

**Hazard Labels (IATA)** : 8


**Packing Group (IATA)** : III - Minor Danger
**Marine Pollutant** : No

### Additional Information

**Emergency Response Guide (ERG) Number** : 157
**Other Information** : This product meets the limtied quantities exception as follows: DOT: Not regulated as dangerous goods except when transported by air or shipped in quantities greater than or equal to 5L. Otherwise, the above descriptions apply.

### Transport by sea

**Dot Vessel Stowage Location** : C - The material must be stowed ''on deck only'' on a cargo vessel and on a passenger vessel.
**Dot Vessel Stowage Other** : 8 - Glass carboys not permitted on passenger vessels
**Limited Quantities (IMDG)** : 1L
**Special Provisions (IMDG)** : 223
**Excepted Quantities (IMDG)** : E1
**IBC Packing Instructions (IMDG)** : IBC03
**Packing Instructions (IMDG)** : P001,LP01
**Tank Instructions (IMDG)** : T4
**Tank Special Provisions (IMDG)** : TP1
**Stowage Category (IMDG)** : C
**EMS-NO. (1)** : F-A
**MFAG-NO** : 157
**EMS-NO. (2)** : S-B

### Air transport

**DOT Quantity Limitations Passenger Aircraft/Rail (49 CFR 173.27)** : 5 L
**DOT Quantity Limitations Cargo Aircraft Only (49 CFR 175.75)** : 60 L
**CAO Packing Instructions (IATA)** : 856
**CAO Max Net Quantity (IATA)** : 60L
**PCA Packing Instructions (IATA)** : 852
**PCA Limited Quantities (IATA)** : Y841
**PCA Limited Quantity Max Net Quantity (IATA)** : 1L
**PCA Max Net Quantity (IATA)** : 5L
**PCA Excepted Quantities (IATA)** : E1
**CAO Max Net Quantity (IATA)** : 60L
**CAO Packing Instructions (IATA)** : 856
**Special Provision (IATA)** : A3
**Erg Code (IATA)** : 8L
**Instruction "cargo" (ICAO)** : 855
**Instruction "cargo" - Limited Quantities (ICAO)** : 30L
**Instruction "passenger" (ICAO)** : 851
**Instruction "passenger" - Limited Quantities (ICAO)** : 1L

## SECTION 15: REGULATORY INFORMATION

### US Federal Regulations

| **Concentrated Descaling Engine Flush** | |
|---|---|
| **SARA Section 311/312 Hazard Classes** | Immediate (acute) health hazard |

| **Hydrogen chloride (7647-01-0)** |
|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |

| | |
|---|---|
| Listed on SARA Section 302 (Specific toxic chemical listings)<br>Listed on SARA Section 313 (Specific toxic chemical listings) | |
| **SARA Section 302 Threshold Planning Quantity (TPQ)** | 500 (gas only) |
| **SARA Section 313 - Emission Reporting** | 1.0 % (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size) |

| **Oxalic acid (144-62-7)** | |
|---|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| **EPA TSCA Regulatory Flag** | T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA. |

| **Dibutyl thiourea (109-46-6)** |
|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |

## US State Regulations

| **Hydrogen chloride (7647-01-0)** |
|---|
| U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Acute and Chronic |
| U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728) |
| U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min and 8 hr) |
| U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities, Threshold Quantities, and Toxic Endpoints |
| U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities |
| U.S. - Florida - Essential Chemicals List |
| U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations and Emission Levels (ELs) |
| U.S. - Idaho - Occupational Exposure Limits - Ceilings |
| U.S. - Illinois - Toxic Air Contaminants |
| U.S. - Louisiana - Reportable Quantity List for Pollutants |
| U.S. - Maine - Air Pollutants - Hazardous Air Pollutants |
| U.S. - Massachusetts - Allowable Ambient Limits (AALs) |
| U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs) |
| U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1 and 2 |
| U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity |
| U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1 and 2 |
| RTK - U.S. - Massachusetts - Right To Know List |
| U.S. - Massachusetts - Threshold Effects Exposure Limits (TELs) |
| U.S. - Massachusetts - Toxics Use Reduction Act |
| U.S. - Michigan - Occupational Exposure Limits - Ceilings |
| U.S. - Michigan - Polluting Materials List |
| U.S. - Michigan - Process Safety Management Highly Hazardous Chemicals |
| U.S. - Minnesota - Chemicals of High Concern |
| U.S. - Minnesota - Hazardous Substance List |
| U.S. - Minnesota - Permissible Exposure Limits - Ceilings |
| U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour and Annual |
| U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances |
| U.S. - New Jersey - Environmental Hazardous Substances List |
| RTK - U.S. - New Jersey - Right to Know Hazardous Substance List |
| U.S. - New Jersey - Special Health Hazards Substances List |
| U.S. - New Jersey - TCPA - Extraordinarily Hazardous Substances (EHS) |
| U.S. - New York - Occupational Exposure Limits - Ceilings |
| U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances |
| U.S. - North Carolina - Control of Toxic Air Pollutants |
| U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 1-Hour |
| U.S. - Ohio - Accidental Release Prevention - Threshold Quantities |
| U.S. - Ohio - Extremely Hazardous Substances - Threshold Quantities |
| U.S. - Oregon - Permissible Exposure Limits - Ceilings |
| RTK - U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List |
| RTK - U.S. - Pennsylvania - RTK (Right to Know) List |
| U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 1-Hour and Annual |

U.S. - South Carolina - Toxic Air Pollutants - Maximum Allowable Concentrations
U.S. - South Carolina - Toxic Air Pollutants - Pollutant Categories
U.S. - Tennessee - Occupational Exposure Limits - Ceilings
U.S. - Texas - Effects Screening Levels - Long Term and Short Term
U.S. - Vermont - Permissible Exposure Limits - Ceilings
U.S. - Washington - Permissible Exposure Limits - Ceilings
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet
U.S. - Wyoming - Process Safety Management - Highly Hazardous Chemicals

**Oxalic acid (144-62-7)**

U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min and 8 hr)
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations and Emission Levels (ELs)
U.S. - Idaho - Occupational Exposure Limits - TWAs
RTK - U.S. - Massachusetts - Right To Know List
U.S. - Michigan - Occupational Exposure Limits - STELs and TWAs
U.S. - Minnesota - Hazardous Substance List
U.S. - Minnesota - Permissible Exposure Limits - STELs and TWAs
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour and Annual
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New Jersey - Special Health Hazards Substances List
U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 1-Hour and 8-Hour
U.S. - Oregon - Permissible Exposure Limits - TWAs
RTK - U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - South Carolina - Toxic Air Pollutants - Maximum Allowable Concentrations
U.S. - South Carolina - Toxic Air Pollutants - Pollutant Categories
U.S. - Tennessee - Occupational Exposure Limits - STELs and TWAs
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Vermont - Permissible Exposure Limits - STELs and TWAs
U.S. - Washington - Permissible Exposure Limits - STELs and TWAs
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet

**Dibutyl thiourea (109-46-6)**

U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term

## Canadian Regulations

| **Concentrated Descaling Engine Flush** | |
|---|---|
| WHMIS Classification | Class E - Corrosive Material<br>Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects<br>Class D Division 2 Subdivision B - Toxic material causing other toxic effects |

**Hydrogen chloride (7647-01-0)**

Listed on the Canadian DSL (Domestic Substances List) inventory.
Listed on the Canadian Ingredient Disclosure List

| | |
|---|---|
| WHMIS Classification | Class A - Compressed Gas<br>Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects<br>Class E - Corrosive Material |

| **Oxalic acid (144-62-7)** | |
|---|---|
| Listed on the Canadian DSL (Domestic Substances List) inventory.<br>Listed on the Canadian Ingredient Disclosure List | |
| WHMIS Classification | Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects<br>Class E - Corrosive Material |

| **Dibutyl thiourea (109-46-6)** |
|---|
| Listed on the Canadian DSL (Domestic Substances List) inventory. |

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

**Revision date** : 10/23/2015

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

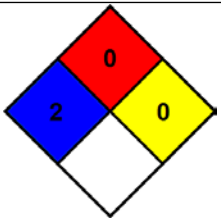
**GHS Full Text Phrases**:

| | |
|---|---|
| Acute Tox. 3 (Inhalation:gas) | Acute toxicity (inhalation:gas) Category 3 |
| Acute Tox. 4 (Dermal) | Acute toxicity (dermal) Category 4 |
| Acute Tox. 4 (Inhalation:gas) | Acute toxicity (inhalation:gas) Category 4 |
| Acute Tox. 4 (Oral) | Acute toxicity (oral) Category 4 |
| Aquatic Chronic 3 | Hazardous to the aquatic environment - Chronic Hazard Category 3 |
| Eye Dam. 1 | Serious eye damage/eye irritation Category 1 |
| Eye Irrit. 2A | Serious eye damage/eye irritation Category 2A |
| Met. Corr. 1 | Corrosive to metals Category 1 |
| Skin Corr. 1A | Skin corrosion/irritation Category 1A |
| Skin Irrit. 2 | Skin corrosion/irritation Category 2 |
| Skin Sens. 1 | Skin sensitization Category 1 |
| STOT SE 3 | Specific target organ toxicity (single exposure) Category 3 |
| H290 | May be corrosive to metals |
| H302 | Harmful if swallowed |
| H312 | Harmful in contact with skin |
| H314 | Causes severe skin burns and eye damage |
| H315 | Causes skin irritation |
| H317 | May cause an allergic skin reaction |
| H318 | Causes serious eye damage |
| H319 | Causes serious eye irritation |
| H331 | Toxic if inhaled |
| H332 | Harmful if inhaled |
| H335 | May cause respiratory irritation |
| H412 | Harmful to aquatic life with long lasting effects |

**NFPA Health Hazard** : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

**NFPA Fire Hazard** : 0 - Materials that will not burn.

**NFPA Reactivity** : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.




**Party Responsible for the Preparation of This Document**

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*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*