# MATERIAL SAFETY DATA SHEET

*Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards*

## PART I *What is the material and what do I need to know in an emergency?*

### 1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED): **STAR BRITE EZ-ON EZ-OFF HULL & BOTTOM CLEANER**

PART NUMBER: 92832, 92800
CHEMICAL NAME/CLASS: Hydrochloric Acid Solution
PRODUCT USE: Boat Bottom Cleaner
MANUFACTURER'S NAME: **STAR BRITE**
ADDRESS: 4041 S. W. 47 Avenue
Ft. Lauderdale, FL 33314
EMERGENCY PHONE: Chemtrec
(800) 424-9300
BUSINESS PHONE: (954) 587-6280
DATE OF PREPARATION: January 27, 1998
DATE: September 15, 2009dco Replaces: August 17, 2006

### 2. COMPOSITION and INFORMATION ON INGREDIENTS

| CHEMICAL NAME | CAS # | % w/w | EXPOSURE LIMITS IN AIR | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | ACGIH | | OSHA | | NIOSH | OTHER |
| | | | TLV ppm | STEL ppm | PEL ppm | STEL ppm | IDLH ppm | ppm |
| Hydrochloric Acid | 7647-01-0 | > 10 | NE | 5 (ceiling) | NE | 5 (ceiling) | 50 | NIOSH REL: TWA = 5 (ceiling)<br>DFG MAK: TWA = 5 (ceiling) PEAK = 2•MAK 5 minutes, momentary value<br>Carcinogenicity: IARC-3 |
| Water, buffering agents, and other components. Each of the buffering agents and other components are present in less than 1% concentration (or 0.1% concentration for carcinogens, reproductive toxins, or respiratory sensitizer) | | Balance | The remaining components of this product do not contribute any significant additional hazards. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, and Canadian Workplace Hazardous Materials Identification System Standards (CPR 4). | | | | | |

NE = Not Established. See Section 16 for Definitions of Terms Used.
NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-1998 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

### 3. HAZARD IDENTIFICATION

**EMERGENCY OVERVIEW:** This is a yellow to bluish-green liquid with a sharp, acrid odor. The main hazard associated with emergency response to releases of this product is the potential for moderate to severe irritation of eyes, skin, and other contaminated tissue. This solution is not flammable or reactive. Emergency responders must wear the personal protective equipment suitable for the situation to which they are responding.

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of occupational overexposure are inhalation and contact with skin and eyes. The symptoms of overexposure to this product are as follows:

INHALATION: Inhalation of vapors, mists, or sprays of this product can be moderately irritating to the respiratory system. Depending on the concentration and duration of contact, symptoms of inhalation overexposure can include coughing, sore throat, nasal congestion, and breathing difficulty.

## 3. HAZARD IDENTIFICATION (Continued)

CONTACT WITH SKIN or EYES: This product can be moderately to severely irritating to contaminated eyes. Symptoms of eye contact can include pain, redness, and watering. Prolonged eye contact may result in tissue damage and blindness. Skin contact can result in moderate irritation. Symptoms of such overexposure may result in redness and pain.

SKIN ABSORPTION: Skin absorption is not a significant route of overexposure for any component of this product.

INGESTION: Ingestion is not anticipated to be a significant route of exposure for any component of this product. If this product is swallowed, symptoms of such exposure may include nausea, vomiting, diarrhea, and a burning sensation in the mouth, throat, and in other tissues of the digestive system. Severe ingestion exposures may be fatal.

INJECTION: Injection of this product (as may occur if skin is punctured by a contaminated object) can result in pain, redness, and local swelling.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in **Lay Terms**. In the event of overexposure, the following symptoms may be observed:

**ACUTE**: The primary acute health effect associated with this product is the potential for moderate to severe irritation of contaminated eyes, skin, or other contaminated tissue. Severe ingestion exposures can be fatal.

**CHRONIC**: Repeated skin contact can result in dermatitis (inflammation of the outer layer of the skin). See Section 11 (Toxicology Information) for additional data.

**TARGET ORGANS:** ACUTE: Skin, eyes, respiratory system. chronic: Skin.

**HAZARDOUS MATERIAL INFORMATION SYSTEM**

| | | |
|---|---|---|
| HEALTH | (BLUE) | 2 |
| FLAMMABILITY | (RED) | 0 |
| REACTIVITY | (YELLOW) | 0 |
| PROTECTIVE EQUIPMENT | | B, D |

| EYES | RESPIRATORY | HANDS | BODY |
|---|---|---|---|
|  | SEE SECTION 8 |  | SEE SECTION 8 |

For routine applications of solution.

**See Section 16 for Definition of Ratings**

# PART II *What should I do if a hazardous situation occurs?*

## 4. FIRST-AID MEASURES

Contaminated individuals must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take a copy of label and MSDS to health professional with the contaminated individual.

SKIN EXPOSURE: If this product contaminates the skin, immediately begin decontamination with running water. Minimum flushing is for 15 minutes. Remove exposed or contaminated clothing, taking care not to contaminate eyes. The contaminated individual must seek immediate medical attention if any adverse health effect occurs.

EYE EXPOSURE: If this product's liquid or vapors enter the eyes, open the contaminated individual's eyes while under gently running water. Use sufficient force to open eyelids. Have the contaminated individual "roll" eyes. Minimum flushing is for 15 minutes. The contaminated individual must seek immediate medical attention.

INHALATION: If vapors, mists, or sprays of this product are inhaled, remove the contaminated individual to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers.

INGESTION: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Have victim rinse mouth with water or drink several cupfuls of water, if conscious. Never induce vomiting or give a diluent (e.g., water) to someone who is unconscious, having convulsions, or unable to swallow. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Preexisting respiratory problems, dermatitis, and other skin disorders can be aggravated by exposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate overexposure.

## 5. FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): Not applicable.
Upper (UEL): Not applicable.

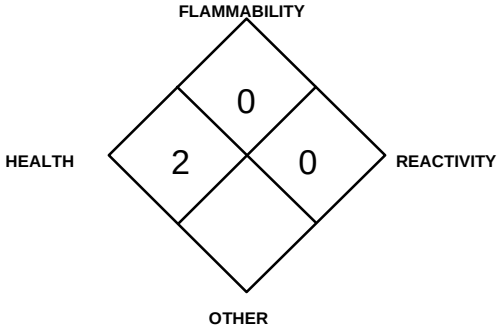
FIRE EXTINGUISHING MATERIALS:

Water Spray: YES
Foam: YES
Halon: YES
Carbon Dioxide: YES
Dry Chemical: YES
Other: Any "ABC" Class.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This solution is a primary irritant and presents a contact hazard to firefighters. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., hydrogen chloride, carbon monoxides).

Explosion Sensitivity to Mechanical Impact: Not sensitive.
Explosion Sensitivity to Static Discharge: Not sensitive.

**NFPA RATING**




**See Section 16 for Definition of Ratings**

SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. If necessary, clean contaminated fire response equipment with an acid neutralizing agent (e.g., sodium bicarbonate) and rinse thoroughly with water before returning such equipment to service.

## 6. ACCIDENTAL RELEASE MEASURES

RELEASE RESPONSE: In case of a release, clear the affected area and protect people. Uncontrolled releases should be responded to by appropriately trained personnel in proper personal protective equipment, using pre-planned procedures. The proper personal protective equipment for incidental releases (e.g., 32-ounce container) should be rubber gloves and goggles. In the event that a clean up will generate excessive splashes, a face-shield, boots, and chemically-resistant body protection should also be worn. In the event of a non-incidental release (e.g., several 1-gallon containers released in a poorly ventilated area), minimum Personal Protective Equipment should be Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard-hat, and Self-Contained Breathing Apparatus. Absorb spilled liquid with polypads or other suitable absorbent materials. Neutralize contaminate area, equipment, and all residue with sodium bicarbonate, soda ash, or other agents suitable for neutralization of acidic materials. Triple-rinse with water. Decontaminate the area thoroughly. Test area with litmus paper to confirm neutralization is complete. Place all spill residue in an appropriate container and seal. Dispose of in accordance with Federal, State, and local hazardous waste disposal regulations (see Section 13, Disposal Considerations).

# PART III *How can I prevent hazardous situations from occurring?*

## 7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors or mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Open containers slowly on a stable surface. Empty containers may contain residual amounts of this product; therefore, empty containers should be handled with care. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials (see Section 10, Stability and Reactivity). Material should be stored in secondary containers. Keep container tightly closed when not in use. Storage areas should be made of corrosion-resistant materials. Inspect all incoming containers before storage to ensure containers are properly labeled and not damaged.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures.

## 8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in Section 2 (Composition and Information on Ingredients), if applicable. Ensure eyewash/safety shower stations are available near areas where this product is used.

RESPIRATORY PROTECTION: None needed under normal circumstances of use. Maintain airborne contaminant concentrations below exposure limits listed in Section 2 (Composition and Information on Ingredients), if applicable. If respiratory protection is needed, use only protection authorized in 29 CFR 1910.134 or applicable State regulations. Use supplied air respiration protection if oxygen levels are below 19.5% or are unknown. The following NIOSH respiratory protection recommendations for 2-Butoxyethanol and Oxalic Acid are provided for additional information.

| **CONCENTRATION** | **RESPIRATORY EQUIPMENT** |
|---|---|
| Up to 5,000 ppm: | Chemical cartridge respirator or a Supplied Air Respirator (SAR) |
| Up to 100 ppm: | SAR operated in a continuous-flow mode, or a Powered Air Purifying Respirator (PAPR) with Hydrogen Chloride cartridges, or a gas mask with a Hydrogen Chloride canister, or a SCBA. |
| Emergency or Planned Entry into Unknown Concentration or IDLH Conditions: | an SCBA or positive pressure, full-faced SAR with an auxiliary SCBA. |
| Escape: | Gas mask or mouth-piece respirator with Hydrogen Chloride cartridges or SCBA should be used. |

EYE PROTECTION: Splash goggles or safety glasses. Face-shields should be worn if operations will generate splashes or sprays. If necessary, refer to U.S. OSHA 29 CFR 1910.133 and Canadian Standards.

HAND PROTECTION: Wear butyl rubber, Viton™ or Saranex™ gloves for routine industrial use. Natural rubber, and polyvinyl chloride gloves are not recommended due to the presence of 2-Butoxyethanol. Use triple gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this MSDS. If necessary, refer to U.S. OSHA 29 CFR 1910.138 and appropriate Standards of Canada.

BODY PROTECTION: If operations will generate splashes or sprays, use body protection appropriate for task (e.g., coveralls or apron). If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, as described in U.S. OSHA 29 CFR 1910.136.

## 9. PHYSICAL and CHEMICAL PROPERTIES

RELATIVE VAPOR DENSITY (air = 1): Not determined.
EVAPORATION RATE (n-BuAc = 1): Similar to water.
SPECIFIC GRAVITY (water = 1): 1.11
MELTING/FREEZING POINT: Not determined.
SOLUBILITY IN WATER: Completely soluble.
BOILING POINT: 107°C (225°F)
VAPOR PRESSURE, mm Hg @ 20°C (68°F): Not determined.
pH: < 2
ODOR THRESHOLD: 1-5 ppm (for Hydrochloric Acid).
COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not available.
APPEARANCE AND COLOR: This is a yellow to bluish-green liquid with a sharp, acrid odor.
HOW TO DETECT THIS SUBSTANCE (warning properties): Litmus paper will turn red when in contact with this solution. The color and odor may also be distinguishing characteristics.

## 10. STABILITY and REACTIVITY

STABILITY: Stable.
DECOMPOSITION PRODUCTS: Hydrogen chloride, carbon oxides.
MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is not compatible with the following substances: bases, amines, alkali metals, most metals, aldehydes, epoxides, reducing agents, oxidizing agents, acetylides, borides, carbides, silicides, cyanides, sulfides, and phosphides. This product is also not compatible with water reactive materials.
HAZARDOUS POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: Avoid exposure or contact to extreme temperatures and incompatible chemicals.

# PART IV *Is there any other useful information about this material?*

## 11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The specific toxicology data available for components greater than 1% in concentration are as follows.

**HYDROCHLORIC ACID:**
Eye Irritancy (rabbit) = 1% solution/ 20 seconds; corneal scarring
Eye Irritancy (rabbit) = 5 mg/ 30 seconds; mild
Eye Irritancy (rabbit) = 100 mg/ rinse; mild
Skin Irritancy (rabbit) = 0.5 mL/ 17% solution/ 4 hours; corrosive burns
DNA Repair System (Escherichia coli) = 25 :g/well
Cytogenic Analysis System (parenteral, grasshopper) = 20 mg
TCLo (inhalation, rat) = 450 mg/3/ 1 hour; teratogenic effects
LCLo (inhalation, human) = 1300 ppm/ 30 minutes
LCLo (inhalation, human) = 3000 ppm/ 5 minutes
LDLo (unreported, man) = 81 mg/kg

**HYDROCHLORIC ACID (Continued):**
$LC_{50}$ (inhalation, mouse) = 1180 ppm/ 60 min
$LC_{50}$ (inhalation, mouse) = 2142 ppm/ 30 min; 2644 ppm/ 30 min
$LC_{50}$ (inhalation, mouse) = 13,745 ppm/ 5 min; 11238 ppm/ 5 min
LD50 (intraperitoneal, mouse) = 1449 mg/kg
$LC_{50}$ (inhalation, rat) = 3124 ppm/ 60 min
$LC_{50}$ (inhalation, rat) = 4701 ppm/ 30 min; 5666 ppm/ 30 min
$LC_{50}$ (inhalation, rat) = 30,000 ppm/ 5 min; 31,008 ppm/ 30 minutes
$LD_{50}$ (oral, rabbit) = 900 mg/kg.
LCLo (inhalation, rabbit) = 4416 ppm/ 30 minutes

SUSPECTED CANCER AGENT: The Hydrochloric Acid component of this product is listed as follows:

IARC-3: Not Classifiable as to Carcinogenicity in Humans"

The other components of this product are not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, and CAL/OSHA and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.
IRRITANCY OF PRODUCT: This product can be moderately to severely irritating to eyes, skin, and other contaminated tissue.
SENSITIZATION TO THE PRODUCT: The components of this product are not known to be skin or respiratory sensitizers.
REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this product and its components on the human reproductive system.

Mutagenicity: The Hydrochloric Acid component of this product, has not caused mutagenic effects in specific human tissues during experimental studies with exposures at relatively high doses.
Embryotoxcity: No human embryotoxic effects have been described for Hydrochloric Acid.
Teratogenicity: The Hydrochloric Acid component of this product has been reported to cause teratogenic effects in research animals at very high doses, but not in humans.
Reproductive Toxicity: This product is not expected to cause adverse reproductive effects in humans.

*A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.*

BIOLOGICAL EXPOSURE INDICES: Currently, there are no Biological Exposure Indices (BEIs) determined for the components of this product.

## 12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.
ENVIRONMENTAL STABILITY: The components of this product are relatively stable under ambient, environmental conditions.
EFFECT OF MATERIAL ON PLANTS or ANIMALS: Because of its corrosivity, this solution can be harmful or fatal to exposed animals. Plants contaminated with Hydrochloric Acid Solutions of low pH may be adversely effected or destroyed.
EFFECT OF CHEMICAL ON AQUATIC LIFE: This solution is designed to be toxic to certain forms of marine life; High concentrations of this solution may be detrimental to any aquatic environment. The following ecotoxicity data are available for the components of this product.

**HYDROCHLORIC ACID:**
$LC_{100}$ (trout) = 10 mg/L, 24 hr
$LC_{50}$ (shrimp) = 100 - 330 ppm, 48 hr (salt water)
$LC_{50}$ (starfish) = 100 - 300 mg/L, 48 hr
$LC_{50}$ (cockle) = 330 - 1000 mg/L, 48 hr
TLm (*Gambusia affinis*/mosquito fish) = 282 ppm, 96 hr (fresh water)

**HYDROCHLORIC ACID (continued):**
$LC_{50}$ (*Carassium auratus*/goldfish) = 178 mg/L (1-2 hour survival time)
$LC_{50}$ (shore crab) = 240 mg/L, 48 hr
LC (*Lepomis macrochirus*/bluegill sunfish) = 3.6 mg/L, 48 hr
$LC_{50}$ (*Lepomis macrochirus*/bluegill sunfish), pH 3.0 - 3.5, 96 hours

## 13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

EPA WASTE NUMBER: Wastes of this product should be tested to see if they are wastes as defined under EPA criteria for D002 listed wastes (Waste Characteristic-Corrosivity).

## 14. TRANSPORTATION INFORMATION

THIS PRODUCT IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Hydrochloric acid
HAZARD CLASS NUMBER and DESCRIPTION: 8 (Corrosive)
UN IDENTIFICATION NUMBER: UN 1789
PACKING GROUP: III
DOT LABEL(S) REQUIRED: Limited quantity up to 1.3 gallon. Consumer Commodity ORM-D
Above 1.3 gallon, Hydrochloric Acid
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER, 2000: Not applicable.

**Small Quantity Exception (49 CFR 173.4)**: Small quantities of Class 8 material are not subjected to other requirements of the Hazardous Materials Regulations (Subchapter C) when the maximum quantity per inner receptacle is limited to 30 ml (liquids). Refer to 49 CFR 173.4 for specific information in packaging small quantity materials.

**Limited Quantity Exceptions [49 CFR 173.154(b)(2)]**: Limited quantities for Class 8, Packing Group III materials have inner packaging not over 4.0 L [1 gal] (liquids) net capacity each, packed in strong outer packaging.

MARINE POLLUTANT: No component of this product is listed as a Marine Pollutant, per Appendix B to 49 CFR 172.101

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This material is considered as Dangerous Goods, per regulations of Transport Canada.

UPS SHIPPING: This material is considered as Hazardous Materials by the United Parcel Service (UPS).

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This material is considered as dangerous goods under rules of IATA.

IMDG: Limited quantities, up to 5 Liters, of class 8.

| PROPER SHIPPING NAME | PASSENGER AND CARGO AIRCRAFT | | | | CARGO AIRCRAFT ONLY | |
|---|---|---|---|---|---|---|
| | Limited Quantity | | | | | |
| | Packing Instruction | Max. Qty per Pkg | Packing Instruction | Max. Qty per Pkg | Packing Instruction | Max. Qty per Pkg |
| Hydrochloric Acid | Y819 | 1 L | 819 | 5 L | 821 | 60 L |

# 15. REGULATORY INFORMATION

**ADDITIONAL U.S. REGULATIONS:**

U.S. SARA REPORTING REQUIREMENTS: The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act, and are listed as follows:

| CHEMICAL NAME | SARA 302 (40 CFR 355, Appendix A) | SARA 304 (40 CFR Table 302.4) | SARA 313 (40 CFR 372.65) |
|---|---|---|---|
| HYDROCHLORIC ACID SOLUTION | NO | YES | NO |

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for any component of this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lbs. (4,540 kg) therefore applies, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Hydrochloric Acid = 5000 lb.

U.S. TSCA INVENTORY STATUS: The components of this product are listed on the TSCA Inventory.

OTHER U.S. FEDERAL REGULATIONS: Not applicable.

U.S. STATE REGULATORY INFORMATION: Components of this product are covered under specific State regulations, as denoted below:

**Alaska - Designated Toxic and Hazardous Substances:** Hydrochloric Acid.

**California - Permissible Exposure Limits for Chemical Contaminants:** Hydrochloric Acid.

**Florida - Substance List:** Hydrochloric Acid.

**Illinois - Toxic Substance List:** Hydrochloric Acid.

**Kansas - Section 302/313 List:** Hydrochloric Acid.

**Massachusetts - Substance List:** Hydrochloric Acid.

**Michigan - Critical Materials Register:** No.

**Minnesota - List of Hazardous Substances:** Hydrochloric Acid.

**Missouri - Employer Information/Toxic Substance List:** Hydrochloric Acid.

**New Jersey - Right to Know Hazardous Substance List:** Hydrochloric Acid.

**North Dakota - List of Hazardous Chemicals, Reportable Quantities:** Hydrochloric Acid.

**Pennsylvania - Hazardous Substance List:** Hydrochloric Acid.

**Rhode Island - Hazardous Substance List:** Hydrochloric Acid.

**Texas - Hazardous Substance List:** Hydrochloric Acid.

**West Virginia - Hazardous Substance List:** Hydrochloric Acid.

**Wisconsin - Toxic and Hazardous Substances:** Hydrochloric Acid.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): No component of this product is on the California Proposition 65 lists.

LABELING (Precautionary Statements): **WARNING!** CAUSES IRRITATION OF THE SKIN, EYES, AND RESPIRATORY TRACT. MAY BE HARMFUL OR FATAL IF SWALLOWED. Avoid contact with skin or eyes. Avoid breathing vapors or mists. Do not taste or swallow. Wash thoroughly after handling. Wear gloves and goggles. Wear appropriate body protection and face-shield if operations will involve splashes or sprays. **FIRST-AID:** In case of contact with skin or eyes, flush immediately with plenty of water for at least 15 minutes. If inhaled, remove to fresh air. If ingested, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, dry chemical, $CO_2$, or "alcohol" foam. **IN CASE OF SPILL:** Absorb spill with sodium bicarbonate or other acid-neutralizing material and place in suitable container. Consult Material Safety Data Sheet for additional information.

**ADDITIONAL CANADIAN REGULATIONS:**

CANADIAN DSL/NDSL INVENTORY STATUS: The components of this product are listed on the DSL Inventory.

OTHER CANADIAN REGULATIONS: Not applicable.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: The components of this product are not on the CEPA Priority Substances Lists.

CANADIAN WHMIS SYMBOLS:

**Class D2B:** Chronic Toxic Effects-skin and respiratory irritation.

**Class E:** Corrosive

## 16. OTHER INFORMATION

**PREPARED BY:** CHEMICAL SAFETY ASSOCIATES, Inc.
9163 Chesapeake Drive, San Diego, CA 92123-1002
(858) 565 - 0302

**DATE OF PRINTING:** April 16, 2010

**REVISION HISTORY:** November, 2000: Up-date of MSDS for current exposure limits, revision to non-corrosive shipping classification after testing of product.

# DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

**CAS #**: This is the Chemical Abstract Service Number which uniquely identifies each constituent.

**EXPOSURE LIMITS IN AIR:**

**ACGIH** - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits. **TLV -** Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average **(TWA)**, the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level **(C)**. Skin absorption effects must also be considered.

**OSHA** - U.S. Occupational Safety and Health Administration.

**PEL -** Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order. **IDLH -** Immediately Dangerous to Life and Health **-** This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. **The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. **O**ccupational **S**afety and **H**ealth **A**dministration (**OSHA**). NIOSH issues exposure guidelines called **R**ecommended **E**xposure **L**evels (**REL**s). When no exposure guidelines are established, an entry of **NE** is made for reference.

**HAZARD RATINGS:**

**HAZARDOUS MATERIALS IDENTIFICATION SYSTEM:** Health Hazard: **0** (minimal acute or chronic exposure hazard); **1** (slight acute or chronic exposure hazard); **2** (moderate acute or significant chronic exposure hazard); **3** (severe acute exposure hazard; onetime overexposure can result in permanent injury and may be fatal); **4** (extreme acute exposure hazard; onetime overexposure can be fatal). Flammability Hazard: **0** (minimal hazard); **1** (materials that require substantial pre-heating before burning); **2** (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]); **3** (Class IB and IC flammable liquids with flash points below 38°C [100°F]); **4** (Class IA flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C [100°F]. Reactivity Hazard: **0** (normally stable); 1 (material that can become unstable at elevated temperatures or which can react slightly with water); **2** (materials that are unstable but do not detonate or which can react violently with water); **3** (materials that can detonate when initiated or which can react explosively with water); **4** (materials that can detonate at normal temperatures or pressures).

**NATIONAL FIRE PROTECTION ASSOCIATION:** Health Hazard: **0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure causes death or major residual injury). Flammability Hazard and Reactivity Hazard: Refer to definitions for "Hazardous Materials Identification System".

**FLAMMABILITY LIMITS IN AIR**:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

**TOXICOLOGICAL INFORMATION:**

Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **$LD_{50}$** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **$LC_{50}$** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **$mg/m^3$** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. Ecological Information: EC is the effect concentration in water.

**REGULATORY INFORMATION:**

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act **(SARA)**; the Canadian Domestic/Non-Domestic Substances List **(DSL/NDSL)**; the U.S. Toxic Substance Control Act **(TSCA)**; Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act **(CERCLA or Superfund)**; and various state regulations.