





Individuals with pre-existing liver diseases may have increased susceptibility to the toxicity of exposure.

**Inhalation** – May cause irritation of the upper respiratory tract, resulting in difficulty breathing.

**Skin Contact** – Irritation and possibly burns.

**Eye Contact** – Irritation and possibly burns.

#### SECTION 4 – FIRST AID MEASURES

**Eye Contact First Aid:** Immediately flush eyes for 15 minutes with large amounts of water while holding eyelids apart. Washing within one minute is essential to achieve maximum effectiveness. Obtain medical attention IMMEDIATELY after flushing.

**Skin Contact First Aid:** Flush skin with water. Remove contaminated clothing; wash before reuse. If irritation is still present, seek medical attention IMMEDIATELY.

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

**Ingestion First Aid:** DO NOT INDUCE VOMITING. Give 1 or 2 glasses of water or milk. Never give anything by mouth to an unconscious individual. Obtain medical attention IMMEDIATELY.

#### SECTION 5 – FIRE FIGHTING MEASURES

**Flash Point:** Not applicable.

**Upper/Lower Explosion Limits in Air:** Not applicable.

**Auto Ignition Temperature:** Not applicable.

**Extinguishing Media:** Will not burn; use materials appropriate for surrounding fire.

**Fire and Explosion Hazards:** Substance itself does not burn, but may decompose upon heating to produce corrosive and/or toxic fumes, such as hydrogen chloride and phosgene gas. Ferric chloride can react with metals to form flammable and potentially explosive hydrogen gas.

**Fire Fighting Instructions:** Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face-piece operated in a positive pressure mode. Move exposed containers from fire area if it can be done without risk. Use water to keep fire-exposed containers and tanks cool.

**Hazardous Product of Decomposition or Combustion:** Hydrogen chloride, hydrogen, phosgene.

	NFPA Rating	HMIS Rating	4 = Extreme / Severe
Health	2	2	3 = High / Serious
Reactivity	0	0	2 = Moderate
Flammability	0	0	1 = Slight



## SECTION 6 – ACCIDENTAL RELEASE MEASURES

Review safety precautions before proceeding with cleanup. Use appropriate personal protection equipment. Do not touch spilled material. Neutralize spill with lime (calcium hydroxide), limestone (calcium carbonate), or soda ash (sodium carbonate). Restrict access to area until completion of clean up.

**Caution:** limestone and soda ash will evolve CO<sub>2</sub>; ventilation should be provided in enclosed areas. Dike area around spill to prevent spreading, and use absorbent material to pick up spill.

**CERCLA Reportable Discharge (RQ):** 1000 lbs. (454 kg), Based on anhydrous FeCl<sub>3</sub>. Divide by solution concentration to obtain solution weight.

**Disposal:** Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine whether a substance should be classified as a hazardous waste at the time of disposal. This is due to the fact that product use, transformation, synthesis, mixtures, etc. may change the nature of the product. Dispose of waste in accordance with applicable federal, state, and local laws.

**RCRA:** Test waste material for corrosivity, D002, prior to disposal.

**Containment Methods:** Contain with inert and non-flammable absorbent (such as soil, sand, vermiculite).

## SECTION 7 – HANDLING AND STORAGE

**Handling:** Store and handle in corrosion-proof materials (and area). Use FRP or PVC pipes. Be cautious of substance residue in empty containers. Act according to precautions and warnings set forth.

**Storage:** Store in a tightly closed container. Do not store in metal containers. Fiberglass, plastic, or rubber-lined tanks may be used for storage. Protect from damage and keep separated from incompatible substances.

## SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Respiratory Protection:** Adequate general ventilation should be provided to keep vapor and mists below exposure limits. The exposure limits for some components are listed in Section 2. Wear a NIOSH/OSHA approved respirator with a dust/mist cartridge if there is potential of exposure to mists in excess of applicable limits, in any situation where product vapor or mists may be present, such as in confined spaces.

**Eye Protection:** Wear splash resistant goggles and/or safety glasses with side shields. Wear a full face shield if possibility of material splashing or spraying exists. Maintain eye wash fountain. Water should be supplied through insulated and heat-traced lines to prevent freeze-ups in cold weather.



**Skin Protection:** Where there is possibility of skin contact, use the following as appropriate, to avoid skin contact: gloves impervious to material, apron, boots, hood, pants, and jacket. Maintain a safety shower with quick opening valves. Water should be supplied through insulated and heat-traced lines to prevent freeze-ups in cold weather.

## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

<b>Boiling Point:</b>	<b>106°C (223°F)</b>	<b>pH:</b>	<b>&lt; 2.0</b>
<b>Melting Point:</b>	<b>N/A</b>	<b>Solubility in Water:</b>	<b>Complete</b>
<b>Specific Gravity:</b>	<b>1.2 – 1.6</b>	<b>Vapor Pressure:</b>	<b>40 mm Hg @ 20°C</b>
<b>% Volatile:</b>	<b>60 – 75 (Water)</b>	<b>Evaporation Rate:</b>	<b>N/A</b>
<b>Vapor Density (Air = 1):</b>	<b>N/A</b>	<b>Molecular Weight:</b>	<b>162.2</b>
<b>Appearance:</b>	<b>Red/Brown Colored Liquid</b>	<b>Odor:</b>	<b>Slightly acrid</b>

## SECTION 10 – STABILITY AND REACTIVITY

**Stability:** Stable at normal conditions

**Polymerization:** Will not occur.

**Decomposition:** Decomposes upon heating to produce corrosive and/or toxic fumes, such as hydrogen chloride. Contact with metals may evolve flammable hydrogen gas.

**Incompatibility:** Rapidly corrodes most metals (titanium is one exception); may generate flammable, potentially explosive hydrogen gas. Avoid contact with nylon, aluminum/aluminum alloys, carbon steel, stainless steel, and copper / copper alloys. Metals, bases, halocarbons, acids, and combustible materials can be considered incompatible.

## SECTION 11 – TOXOLOGICAL INFORMATION

**Chronic Effects:** Repeated dosage may cause hemosiderosis, including possible damage to liver and pancreas.

**Toxicological Data:** Anhydrous Ferric Chloride Solid Oral LD<sub>50</sub> (rat) = 450 mg/kg

**Carcinogenicity:** None of the components of this material are listed as a carcinogen by IARC, NTP, OSHA, or ACGIH.

**Reproductive Effects:** TDLo Rat 1 day (intratesticular) 12976  $\mu\text{g}/\text{kg}$ ; TDLo Rat 1 day (intravaginal) 29 mg/kg pre pregnancy continuous.

**Target Organs:** No data available.

## SECTION 12 – ECOLOGICAL INFORMATION

**Ecotoxicological Information:** TLm Daphnia 15 ppm/96 hr fresh water/ conditions of bioassay not specified.

**Persistence and Degradation:** No data available



## SECTION 13 – DISPOSAL CONSIDERATIONS

Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine whether a substance should be classified as a hazardous waste at the time of disposal. This is due to the fact that product use, transformation, synthesis, mixtures, etc. may change the nature of the product. Product containers should be thoroughly emptied before disposal. Dispose of waste in accordance with applicable federal, state, and local laws. Most waste facilities accept in under 5 gallon quantities

## SECTION 14 – TRANSPORTATION INFORMATION

**DOT Shipping Name:** Chrome Delete

**Hazard Class:** 8 – Corrosive Material

**UN Number:** UN 2582

**Packing Group:** III

**Reportable Quantity:** 1000 lbs (454 kg)

**Shipping Containers:** Rubber-lined steel tank cars/trucks; polyethylene drums, bottles

**Storage Conditions:** Keep containers closed

## SECTION 15 – REGULATORY INFORMATION

**OSHA:** Hazardous Corrosive Liquid – 29 CFR 1920.1200

OSHA Process Safety (29 CFR 1910.119): No

**CERCLA:** Hazardous Substance – Reportable Quantity (RQ) = 1000 lbs (454 kg)

**SARA Regulations:** 313 and 40 CFR 372: No

**SARA Hazard Categories, SARA Sections 311/312 (40 CFR 370.21):**

Acute: Yes; Chronic: No; Fire: No; Reactive: No; Sudden Release: No

**Clean Water Act:** Designated as a hazardous substance under Section 311(b)(2)(A) of the Federal Water Pollution Control Act; FeCl<sub>3</sub> is also regulated by the Clean Water Act Amendments of 1977 and 1978. This chemical is subject to regulations regarding its discharge.

**TSCA Inventory Status:** Yes

**California Proposition 65:** This product does not contain any listed substances in California.

**Right-To-Know Lists:** Massachusetts, California, Pennsylvania, New Jersey. This substance does not contain nor is manufactured with ozone-depleting substances.



## SECTION 16 – OTHER INFORMATION

**IMPORTANT! Read this MSDS before use or disposal of this product. Pass along the information to employees and any other persons who could be exposed to the product to be sure that they are aware of the information before use or other exposure.**

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