



## MATERIAL SAFETY DATA SHEET

**FERRIC CHLORIDE, 42° BAUMÉ**

**MSDS# 6034**

**SECTION 1. PRODUCT IDENTIFICATION**

PRODUCT NAME: FERRIC CHLORIDE, 42° BAUMÉ  
SYNONYMS: N/A

CHEMICAL FORMULA: N/A

**SECTION 2. COMPOSITION INFORMATION ON INGREDIENTS**

CHEMICAL NAMES	%	OSHA PEL	ACGIH TLV	CAS #
FERRIC CHLORIDE	<10	N/A	1 mg/m3*	7705-08-0
Hydrogen Chloride	10	5 PPM	5 PPM	7647-01-0
WATER	BALANCE	N/A	N/A	7732-18-5

\* soluble iron salt as Fe

**SECTION 3. HAZARDS IDENTIFICATION**

**PRECAUTIONARY RATINGS**

- 0 = LEAST
- 1 = SLIGHT
- 2 = MODERATE
- 3 = HIGH
- 4 = EXTREME

HEALTH: 3  
 FIRE: 0  
 REACTIVITY: 1  
 SPECIFIC HAZARD: N/A

**EMERGENCY CONTACT: CHEMTREC (800) 424-9300**

**Emergency Overview**

**DANGER! CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR INHALED. VAPOR IRRITATING TO EYES AND RESPIRATORY TRACT. INHALATION MAY CAUSE LUNG DAMAGE. AFFECTS THE LIVER.**

**Potential Health Effects**

**Inhalation:** Corrosive! Inhalation of vapors can cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract, and in severe cases, pulmonary edema, circulatory failure, and death.

**Ingestion:**

Ingestion can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract. May cause nausea, vomiting, and diarrhea, and in severe cases, death.

Pink urine discoloration is a strong indicator of iron poisoning. Liver damage, coma and death may follow, sometimes delayed as long as three days.

**Skin Contact:** Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and discolor skin.

**Eye Contact:** Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.

**Chronic Exposure:**

Excessive exposure to vapors may cause erosion of teeth. Repeated ingestion may cause liver damage. Prolonged exposure of the eyes may cause discoloration.

**CARCINOGENICITY:**

**IARC:** IARC Group 3 - not classifiable

**SECTION 4. FIRST AID MEASURES**

**Eyes:** Flush opened eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

**Skin:** Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.

**Ingestion:** DO NOT INDUCE VOMITING! If victim is conscious and alert, give large quantities of milk or water. Never give anything by mouth to an unconscious person. Get medical immediately.

**Inhalation:** Remove to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid immediately.

**SECTION 5. FIRE FIGHTING MEASURES**

**Fire:** Not considered to be a fire hazard. Irritating hydrogen chloride fumes may form in fire. Extreme heat or contact with metals can release flammable hydrogen gas.

**Explosion:** Contact of concentrated solutions with most metals causes formation of flammable and explosive hydrogen gas.

**Fire Extinguishing Media:** Water or water spray. Neutralize with soda ash or slaked lime. Do not allow water runoff to enter sewers or waterways.

**Special Information:** In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Structural firefighter's protective clothing is ineffective for fires

involving hydrochloric acid. Stay away from ends of tanks. Cool tanks with water spray until well after fire is out.

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SECTION 6 . ACCIDENTAL RELEASE MEASURES

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Evacuate the area of all unnecessary personnel. Ventilate area of leak or spill. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! containerize for proper disposal in compliance with federal, state, and local regulations.

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SECTION 7 . HANDLING AND STORAGE

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**Handling:** wash hands thoroughly after handling. Avoid contact with eyes and skin. When diluting, the acid should always be added slowly to water and in small amounts.

**Storage Requirements:** keep storage containers tightly closed in a cool dry place. Store away from heat, water, and incompatible materials.

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SECTION 8 . EXPOSURE CONTROLS, PERSONAL PROTECTION

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**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits.

**Respiratory Protection:** Normal room ventilation is adequate. Check with supplier or regulatory agency for appropriate NIOSH approved respirators.

**Skin Protection:** Chemical resistant gloves, and additional protection including impervious boots, apron, or coveralls as appropriate.

**Eye Protection:** Safety glasses or goggles with side shields and/or a full face shield.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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BOILING POINT: N/A	VAPOR PRESSURE (mmHg): N/A	pH: N/A
MELTING POINT: N/A	VAPOR DENSITY (air=1): N/A	
SPECIFIC GRAVITY: ca. 1.4	EVAPORATION RATE: N/A	
SOLUBILITY (H <sub>2</sub> O): SOLUBLE	APPEARANCE & ODOR: Clear, yellow liquid, WITH NO ODOR.	

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SECTION 10. STABILITY AND REACTIVITY

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**STABILITY:** Stable under ordinary conditions of use and storage. Containers may burst when heated.

**INCOMPATIBILITY:** Hydrochloric Acid Component:

A strong mineral acid, concentrated hydrochloric acid is incompatible with many substances and highly reactive with strong bases, metals, metal oxides, hydroxides, amines, carbonates and other alkaline materials. Incompatible with materials such as cyanides, sulfides, sulfites, and formaldehyde.

Ferric Chloride Component:

Metals, allyl chloride, sodium, potassium. Will react with water to produce toxic and corrosive fumes.

**HAZARDOUS POLYMERIZATION:** WILL NOT OCCUR

**HAZARDOUS DECOMPOSITION PRODUCTS:** When heated to decomposition, emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic and corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.

**CONDITIONS TO AVOID:** Heat, direct sunlight, incompatibles.

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SECTION 11. TOXICOLOGICAL INFORMATION

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Hydrochloric acid: Inhalation rat LC50: 3124 ppm/1H; Oral rabbit LD50: 900 mg/kg. Investigated as a tumorigen, mutagen, reproductive effector.

Ferric Chloride Component:

Oral rat LD50: 450 mg/kg (anhydrous); investigated as a mutagen, reproductive effector.

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SECTION 12. ECOLOGICAL INFORMATION

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**Environmental Fate:**

For Hydrochloric Acid (Concentrated Solutions):

When released into the soil, this material is not expected to biodegrade. When released into the soil, this material may leach into groundwater.

**Environmental Toxicity:**

For Hydrochloric Acid (Concentrated Solutions):

This material may be toxic to aquatic life. LC50 Shrimp: 100-300 ppm/48-hr/salt water; LC100 trout: 10 mg/l/24-hr; TLm mosquito fish: 282 ppm/96-hr.

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SECTION 13. DISPOSAL CONSIDERATIONS

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PREPARING WASTES FOR DISPOSAL: DO NOT DUMP INTO FRESH AND/OR SALT WATER.

DO NOT DISPOSE NEAR/OR BY LANDFILL. ENSURE COMPLIANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

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SECTION 14. TRANSPORT INFORMATION

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DOMESTIC ( D.O.T. ) TRANSPORTATION REQUIREMENT: **Proper Shipping Name:** FERRIC CHLORIDE, SOLUTION

**Hazard Class:** 8      **UN/NA:** UN2582      **Packing Group:** III

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SECTION 15. REGULATORY INFORMATION

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**TSCA Inventory List:**

All of the ingredients (or their hydrate forms) are listed.

**CERCLA Reportable Quantity (RQ):**

FERRIC CHLORIDE, 42° BAUMÉ, MSDS# 6034

CAS# 7705-08-0: 1000 lb final RQ.

CAS# 7647-01-0: 5000 lb.

**SARA Section 302 Threshold Planning Quality (TPQ):**

CAS# 7647-01-0: 500 lb.

**SARA Title Codes:**

CAS # 7705-08-0: acute.

CAS # 7647-01-0: acute.

**OSHA:**

This product is not considered to be highly hazardous by OSHA Hazard Communication Standard.

**SECTION 16. OTHER INFORMATION**

ALL INFORMATION RECOMMENDATIONS AND SUGGESTIONS APPEARING HEREIN CONCERNING OUR PRODUCT ARE BASED UPON TESTS AND DATA BELIEVED TO BE RELIABLE, HOWEVER IT IS THE USER'S RESPONSIBILITY TO DETERMINE THE SAFETY, TOXICITY AND SUITABILITY FOR HIS/HER OWN USE OF THE PRODUCT DESCRIBED HEREIN. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED, THAT THE INFORMATION IS CURRENT, APPLICABLE & SUITABLE TO THEIR CONDITIONS. SINCE THE ACTUAL USE BY OTHERS IS BEYOND OUR CONTROL. NO GUARANTEE, EXPRESSED OR IMPLIED IS MADE BY SHAPE PRODUCTS AS TO THE EFFECTS OF SUCH USE, SHAPE PRODUCTS DOES NOT ASSUME ANY LIABILITY ARISING OUT OF USE, BY OTHERS OF THE PRODUCTS REFERRED TO HEREIN. NOR IS THE INFORMATION HEREIN TO BE CONSTRUED AS ABSOLUTELY COMPLETE SINCE ADDITIONAL INFORMATION MAY BE NECESSARY OR DESIRABLE WHEN PARTICULAR OR EXCEPTIONAL CONDITIONS OR CIRCUMSTANCES EXIST OF BECAUSE OF APPLICABLE LAWS OR GOVERNMENT REGULATIONS. N/A= NOT AVAILABLE.