



**QUALIKEMS FINE CHEM PVT. LTD.**  
**5531, BASTI HARPHOOL SINGH, SADAR THANA ROAD, DELHI-06**

Material Safety Data Sheet  
Ferric chloride

Section 1 - Chemical Product and Company Identification

**MSDS Name:** Ferric chloride

**Synonyms:** Ferric chloride; Iron (III) chloride; Iron sesquichloride; Iron trichloride

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7705-08-0	Iron (III) chloride	ca.100	231-729-4

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: dark gray to black or brown solid.

Harmful if swallowed. May cause blood abnormalities. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. May cause liver and kidney damage. May cause adverse reproductive effects based upon animal studies.

**Target Organs:** Kidneys, liver, cardiovascular system.

**Potential Health Effects**

**Eye:** Causes eye burns. Contact produces irritation, tearing, and burning pain. When substance becomes wet or comes in contact with moisture of the mucous membranes, it will cause irritation. Iron particles which become imbedded in the eye may lead to siderosis in varying degrees. A yellowish green or brown discoloration of the eye is the first sign of siderosis.

**Skin:** Causes skin burns. Contact with skin causes irritation and possible burns, especially if the skin is wet or moist. May be absorbed through the skin. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color.

**Ingestion:** May cause severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns. May cause low blood pressure, rapid heartbeat, skin discoloration, and possible coma. Ingestion of iron compounds may cause hemorrhage and necrosis of the stomach with shock, severe diarrhea, and possible coma.

**Inhalation:** Causes chemical burns to the respiratory tract. Aspiration may lead to pulmonary edema. May cause systemic effects.

## Section 4 - First Aid Measures

**Eyes:** Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes. If water-reactive products are embedded in the skin, no water should be applied. The embedded products should be covered with a light oil.

**Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

## Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Reacts violently with water giving off flammable gas which may explode. Material will not burn. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Water Reactive. Material will react with water and may release a flammable and/or toxic gas. May ignite or explode on contact with steam or moist air. May re-ignite after fire is extinguished.

**Extinguishing Media:** Use dry sand or earth to smother fire. Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. DO NOT USE WATER! Do NOT get water inside containers. Contact professional fire-fighters immediately. Cool containers with flooding quantities of water until well after fire is out.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 3; Flammability: 0; Instability: 1; Special Hazard: -W-

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Do not expose spill to water.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Do not allow water to get into the container because of violent reaction. Minimize dust generation and accumulation. Keep container tightly closed. Do not get on skin or in eyes. Do not ingest or inhale. Do not allow contact with water. Discard contaminated shoes. Keep from contact

with moist air and steam.

**Storage:** Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from water. Store protected from moisture.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

## Section 9 - Physical and Chemical Properties

**Physical State:** Solid

**Appearance:** dark gray to black or brown

**Odor:** Not available.

**pH:** 2.0 (0.1M aq. sol.)

**Vapor Pressure:** < 1 mm Hg @ 20 deg C

**Vapor Density:** 5.61

**Evaporation Rate:** Negligible

**Viscosity:** Not available.

**Boiling Point:** 316 deg C

**Freezing/Melting Point:** 300 deg C

**Decomposition Temperature:** Not available.

**Solubility:** Soluble.

**Specific Gravity/Density:** 2.9 (water=1)

**Molecular Formula:** Cl<sub>3</sub>Fe

**Molecular Weight:** 162.206

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures. Combines vigorously or explosively with water.

**Conditions to Avoid:** Incompatible materials, dust generation, excess heat, exposure to moist air or water.

**Incompatibilities with Other Materials:** Water.

**Hazardous Decomposition Products:** Hydrogen chloride, irritating and toxic fumes and gases, chlorine.

**Hazardous Polymerization:** Has not been reported

## Section 11 - Toxicological Information

**RTECS#:**

**CAS#** 7705-08-0: LJ9100000

**LD50/LC50:**

CAS# 7705-08-0:

Oral, mouse: LD50 = 200 mg/kg;

Oral, rat: LD50 = 316 mg/kg;

**Carcinogenicity:**

CAS# 7705-08-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information found

**Teratogenicity:** No information found

**Reproductive Effects:** Adverse reproductive effects have occurred in experimental animals.

**Mutagenicity:** Mutagenic effects have occurred in experimental animals.

**Neurotoxicity:** No information found

**Other Studies:**

Section 12 - Ecological Information

**Ecotoxicity:** Water flea Daphnia: TLm = 15 ppm; 96 Hr; fresh water

Fish: Striped bass: LC50 = 6 mg/L; 24-96 Hr; Static bioassay (as iron)

Fish: Striped bass: LC50 = 4 mg/L; 24-96 Hr; Static bioassay (as iron)

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

Section 14 - Transport Information

	IATA	
<b>Shipping Name:</b>	FERRIC CHLORIDE, ANHYDROUS	
<b>Hazard Class:</b>	8	
<b>UN Number:</b>	UN1773	
<b>Packing Group:</b>	III	

Section 15 - Regulatory Information

**Hazard Symbols:**

C

**Risk Phrases:**

R 22 Harmful if swallowed.

R 34 Causes burns.

**Safety Phrases:**

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 28 After contact with skin, wash immediately with...

**Section 16 - Additional Information**

**MSDS Creation Date:** 7/07/2000

**Revision #2 Date:** 03/24/2003

**Revision #3 Date:** 03/23/2008

**Revision #4 Date:** 03/22/2013

**Revision #5 Date:** 03/21/2018

**Revision #6 Date:** 03/20/2023

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