



MSDS *Material Safety Data Sheet*

International Chemical Industries, Inc
Km. 32 Bo. Tuktukan, Guiguinto, Bulacan
Philippines

24 Hour Emergency Telephone: 1-800-1-888-6800

All non-emergency calls should be directed to Customer Service (1-800-1-888-6800 x501)

Ferric Chloride Solution

Section 1 – Product Identification

Name: Ferric Chloride Solution
Synonyms: Iron chloride, Iron III Chloride, Iron Tri Chloride
CAS No.: 7705-08-0
Formula: FeCl₃
Molecular Weight: 162.2 (100% Basis)
Chemical Classification: Inorganic Acidic Salt, Solution

Section 2 – Composition/Information on Ingredients

<u>Ingredient</u>	<u>CAS No.</u>	<u>Percent</u>	<u>Hazardous</u>
Water	7732-18-5	60 – 65	No
Ferric Chloride	7705-08-0	35 – 40	Yes
Ferrous Chloride	7758-94-3	0.1 – 0.7	Yes

Section 3 – Hazards Identification

Potential Health Effects

Routes of Exposure: Ferric Chloride can affect the body if it is ingested or if it comes in contact with the eyes or skin.

Inhalation: Avoid inhaling concentrated vapor or mist, may cause irritation of the upper respiratory tract.

Ingestion: This material is toxic by ingestion. Symptoms may include nausea, vomiting, gastrointestinal irritation, burns to mouth and throat. Repeated ingestion of sublethal doses may lead to excessive deposition in the tissues accompanied by pancreatic and liver damage.

International Chemical Industries, Inc.
Km. 32 Bo. Tuktukan, Guiguinto, Bulacan 3015
Philippines

Phone Number: (6344)794-0444 to 45
FAX Number: (6344)794-4104
Toll Free No. 1-800-1888-6800



Skin Contact: may cause skin irritation with discomfort or rash, skin burns, or ulceration. Ferric chloride has been infrequently associated with skin sensitization in humans.

Eye Contact: This product may cause irritation. Human health effects of overexposure by eye contact may include discoloration of eye tissues, eye irritation and discomfort, tearing and blurring of vision or eye corrosion with corneal or conjunctival ulceration.

Effects of Overexposure: Ingestion in higher doses may lead to abnormal liver function with nausea or vomiting, reduced appetite, abdominal pain, lethargy, tarry stools, diarrhea, fast and weak pulse, hypertension, dehydration, acidosis, and coma. Temporary alteration of the heart's electrical activity may result in irregular pulse, palpitations, or inadequate circulation. If death does not occur immediately, symptoms may clear in a few hours but return within a day with cyanosis, pulmonary edema, shock, convulsions, acidosis, fever, and death. Individuals with pre-existing diseases of the liver may have increased susceptibility to the toxicity of repeated exposures.

Section 4 – First Aid Measures

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

Ingestion: DO NOT INDUCE VOMITING. Give large quantities of water, then an antidote, such as sodium bicarbonate or anti acid tablets to neutralize the acidity of Ferric Chloride. Never give anything by mouth to an unconscious individual. Get medical attention immediately.

Skin Contact: Flush skin with water. Remove contaminated clothing; wash before reuse. If there is skin irritation, get medical attention.

Eye Contact: Immediately, flush with large amounts of water for at least 15 minutes while holding eyelids apart. Washing within one minute is essential to achieve maximum effectiveness. Get medical attention after flushing.

Section 5 – Fire Fighting Measures

Flash Point: N/A

Autoignition Temperature: N/A

Lower Explosive Limit: N/A

Upper Explosive Limit: N/A

Unusual Fire and Explosion Hazards: Closed containers exposed to heat may explode.

Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Special Firefighting Procedures: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece 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 cool.



Section 6 – Accidental Release Measures

Review safety precautions before proceeding with cleanup. Use appropriate personal protection equipment.

Neutralize spill with lime (calcium hydroxide), limestone (calcium carbonate), or soda ash (sodium carbonate). CAUTION: limestone and soda ash will evolve CO₂; ventilation should be provided in enclosed areas. Dike area around spills to prevent spreading, and use absorbent material to pick up spill.

Section 7 – Handling and Storage

Keep container tightly closed. Store in corrosion-proof area. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (vapor, liquid); observe all warnings and precautions listed for the product.

Section 8 – Exposure Controls/Personal Protection

Respiratory Protection: NIOSH/MSHA approved respirator if exposure may, or does exceed occupational exposure limits. Generally, a dust/mist respirator may be worn in areas where the TLV is exceeded up to ten times. Alternatively, a supplied air full facepiece respirator or air-lined hood may be worn.

Ventilation: A system of local exhaust is recommended to keep employee exposure below the airborne exposure limits. Local exhaust is usually preferred because it controls the emission at its source, preventing dispersion of it into the general work area.

Protective Clothing: Wear rubber gloves and clean body-covering clothing.

Eye Protection: Use chemical splash goggles or face shield where splashing of solution is possible.

Other Protective Clothing or Equipment: Rubber boots, rain suit or rubber apron, face shield.

Work /Hygienic Practices: An eye wash and safety shower should be readily accessible. Wash hands thoroughly after handling.



Section 9 – Physical and Chemical Properties

Physical State: Liquid
Appearance: Dark brown liquid
Boiling Point: 106°C (223°F)
Specific Gravity: 1.38 to 1.42
pH: < 2
Solubility in Water: Complete
Vapor Pressure: 40 mm Hg @ 35°C
Odor: Slightly acrid

Section 10 – Stability and Reactivity

Stability: Stable
Polymerization: Will not occur
Incompatibility: Rapidly corrodes most metals (titanium is one exception); may generate flammable, potentially explosive hydrogen gas. Avoid contact with strong oxidizing agent, nylon, aluminum/aluminum alloys, carbon steel, stainless steel, and copper/copper alloys.
Hazardous Decomposition Products: When heated to decomposition, emits toxic hydrogen chloride or chlorine.

Section 11 – Toxicological Information

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

Section 12 – Ecological Information

Environmental Fate: No information found.
Environmental Toxicity: No information found.

Section 13 – Disposal Considerations

Dispose of waste in accordance with applicable federal, state, and local laws.



Section 14 – Transport Information

DOT

Proper Shipping Name: Ferric chloride solution

Hazard Class: Class 8

UN/NA #: UN 2582

DOT Labels: Corrosive

DOT Placards: Corrosive

Packaging Group: III

IMO

Proper Shipping Name: Ferric chloride solution

Hazard Class: Corrosive material, 8

UN #: 2582

IMO Label: Corrosive

Packaging Group: III

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

Storage Conditions: Keep containers closed

Section 15 – Regulatory Information

NFPA Rating: Health – 2 ; Fire – 0 ; Reactivity – 1

0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

Carcinogenicity Lists: No **NTP:** No **IARC Monograph:** No **OSHA Regulated:** No



Section 16 - Other Information

Label Hazard Warning:

DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. HARMFUL IF SWALLOWED OR INHALED. AFFECTS THE LIVER.

The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment.

The information contained herewith, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results and assume no responsibility for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.
