FERRIC CHLORIDE

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
Ferric chloride, anhydrous
Ferric chloride, hexahydrate
Iron III chloride
Iron trichloride

Solid
Greenish black
Odorless

Inks and mixes with water.

Fire Not flammable.

Exposure CALL FOR MEDICAL AID.

DUET
Irritating to eyes, nose and throat. If inhaled will cause coughing or difficult breathing. If in eyes, hold eyelids open and flush with plenty of water. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.

SOLID
Will burn skin and eyes. If swallowed will cause nausea and vomiting. Remove contaminated clothing and shoes. If inhaled, remove to fresh air. If not breathing, do nothing except keep victim warm.

Water Harmful to aquatic life in very few concentrations.

Pollution HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify nearest of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

1.1 Dilute and disperse
1.2 Stop discharge

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: FeCl3 or FeCl3·6H2O
2.3 IMOG/UN Designation: 81773
2.4 DOT ID No.: 772-08-0
2.5 CAS Registry No.: 7705-08-0
2.6 NAERG Guide No.: 167
2.7 Standard Industrial Trade Classification: 522-09

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Dust respirator if required; rubber apron and boots; chemical worker's goggles or face shield.
3.2 Symptoms Following Exposure: Inhalation of dust may irritate nose and throat. Ingestion causes irritation of mouth and stomach. Dust irritates eyes. Prolonged contact with skin causes irritation and burns.
3.3 Treatment of Exposure: INGESTION: give large amounts of water; induce vomiting if large amounts have been swallowed. EYES: immediately flush with plenty of water for at least 15 min.; get medical attention promptly. SKIN: flush with water.
3.4 TLV-TWA: 1 mg/m3 (as iron)
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 2; LD50 = 0.5-5 g/kg (rat)
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Currently not available
3.10 Vapor (Gas) Irritant Characteristics: Not pertinent
3.11 Liquid or Solid Characteristics: Currently not available
3.12 Odor Threshold: Currently not available
3.13 ULH Value: Not listed.
3.14 OSHA PEL-TWA: Not listed.
3.15 OSHA PEL-STEL: Not listed.
3.16 OSHA PEL-Ceiling: Not listed.
3.17 EPA AEG/L: Not listed

4. FIRE HAZARDS

4.1 Flash Point: Not flammable
4.2 Flammable Limits in Air: Not flammable
4.3 Fire Extinguishing Agents: Not pertinent
4.4 Fire Extinguishing Agents Not To Be Used: Currently not available
4.5 Special Hazards of Combustion: Products: Irritating hydrogen chloride fumes may form in fire.
4.6 Behavior in Fire: Currently not available
4.7 Auto Ignition Temperature: Currently not available
4.8 Electrical Hazards: Not pertinent
4.9 Burning Rate: Not pertinent
4.10 Adiabatic Flame Temperature: Not pertinent
4.11 Stoichiometric Air to Fuel Ratio: Not pertinent
4.12 Flame Temperature: Not pertinent
4.13 Combustion Molar Ratio (Reactant to Product): Not pertinent
4.14 Minimum Oxygen Concentration for Combustion (MOC): Currently not available

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: No reaction
5.2 Reactivity with Common Materials: Water solutions are acidic and corrosive to most metals.
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Flush with water; rinse with dilute sodium bicarbonate or sodium ash solutions.
5.5 Polymerization: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity: 1 ppm/144 h/stickleback/harmful/fresh water
1 ppm/240 h/stickleback/safe/fresh water
15 ppm/96 h/daphnia/TW/fresh water
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): None
6.4 Food Chain Concentration Potential: None
6.5 CECOL Hazard Profile: Bioaccumulation: 0
Damage to living resources: 2
Human Oral hazard: 0
Human Contact hazard: 0
Reduction of amenities: X

6.6 Inhibitor of Polymerization: Not pertinent
6.7 Inert Atmosphere: Currently not available
6.8 Dilution Ratio: Not pertinent
6.9 Venting: Not pertinent
6.10 Initial Damaging Reaction: None
6.11 Inert Atmosphere: Currently not available
6.12 pH: Not pertinent
6.13 Aeration: Currently not available
6.14 Volatilization: Not pertinent
6.15 Disposal: Currently not available
6.16 Interference with Pollution Control: Not pertinent
6.17 Inert Atmosphere: Currently not available
6.18 Oxidation State: Currently not available
6.19 Heating; Heating Point: Not pertinent
6.20 Flash Point: Not pertinent
6.21 Ignition Temperature: Not pertinent
6.22 Iodine Number: Currently not available
6.23 NMR: Currently not available
6.24 Density: Not pertinent
6.25 Sp. Gr: Not pertinent
6.26 Flash Point: Not pertinent
6.27 Octanol/Water Partition Coefficient: Currently not available
6.28 Solubility: Not pertinent
6.29 Water Discoloration: None
6.30 Irritating to eyes, nose and throat.
6.31 Inhalation is dangerous.
6.32 Waterfowl Toxicity: Currently not available
6.33 SARA 307/313: Currently not available
6.34 U.S. Fish and Wildlife: No requirement
6.35 EPA Aquatic Life Classification: None
6.36 EPA Aquatic Life: None
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6.99 EPA Aquatic Life: None
7. SHIPPING INFORMATION

7.1 Grades of Purity: Anhydrous; Hydrate; Reagent; 46% solution in water
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open
7.5 IMO Pollution Category: C
7.6 Ship Type: 3
7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

8.1 40 CFR CFR: Corrosive material
8.2 40 CFR Class: II
8.3 40 CFR Package Group: III
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification: Not listed
8.6 EPA Reportable Quantity: 1000 pounds
8.7 EPA Pollution Category: C
8.8 RCRA Waste Number: Not listed
8.9 EPA FWPCA List: Yes

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15°C and 1 atm: Solid
9.2 Molecular Weight: 162.22 (anhydrous)
9.3 Boiling Point at 1 atm: Not pertinent
9.4 Freezing Point: Not pertinent
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 2.8 to 20°C (anhydrous solid)
9.8 Liquid Surface Tension: Not pertinent
9.9 Liquid Water Interfacial Tension: Not pertinent
9.10 Vapor (Gas) Specific Gravity: Not pertinent
9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
9.12 Latent Heat of Vaporization: Not pertinent
9.13 Heat of Combustion: Not pertinent
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: (anhydrous) –360 Btu/lb = –1,550 cal/g = –8.4 X 103 J/kg
9.16 Heat of Polymerization: Not pertinent
9.17 Heat of Fusion: Not pertinent
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: Currently not available

9.19 Not pertinent

NOTES

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# Ferric Chloride Properties

## 9.20 Saturated Liquid Density

<table>
<thead>
<tr>
<th>Temperature (degrees F)</th>
<th>Pounds per cubic foot</th>
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## 9.21 Liquid Heat Capacity

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<tr>
<th>Temperature (degrees F)</th>
<th>British thermal unit per pound-F</th>
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## 9.22 Liquid Thermal Conductivity

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<th>British thermal unit inch per hour-square foot-F</th>
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## 9.23 Liquid Viscosity

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## 9.24 Solubility in Water

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<th>Pounds per 100 pounds of water</th>
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## 9.25 Saturated Vapor Pressure

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## 9.27 Ideal Gas Heat Capacity

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