Safety Data Sheet · OSHA HCS 2024

Ferric Chloride 40% Water Treatment Grade

Reagent · 40%

Standard	Revised	Emergency
OSHA HCS 2024 · GHS Rev. 7	2026-11-12	Chemtel 1-800-255-3924 (24/7)

1 Identification

Product Identifier	Ferric Chloride 40% Water Treatment Grade
Grade	Reagent
Concentration	40% w/w
CAS Number	7705-08-0
Chemical Formula	FeCl3
Manufacturer	Alliance Chemical 204 South Edmond Street, Taylor, TX 76574
Emergency Phone	Chemtel 1-800-255-3924 (24/7)
Synonyms	Iron(III) chloride solution; ferric chloride solution; iron trichloride solution
Recommended Use	Coagulant for water and wastewater treatment; etchant for copper and printed circuit boards; odor (sulfide) control.
Restrictions on Use	For industrial and professional use. Stains skin, clothing, concrete and metal permanently.

2 Hazard Identification



Corrosive



Irritant / harmful

Classification

Corrosive to metals, Category 1

Acute toxicity (oral), Category 4

Skin corrosion/irritation, Category 1

Serious eye damage/eye irritation, Category 1

Hazardous to the aquatic environment, long-term hazard, Category 3 †

† GHS environmental hazard class; not adopted under OSHA HCS (29 CFR 1910.1200).

Signal Word

Danger

Hazard Statements

H290 May be corrosive to metals

H302 Harmful if swallowed

H314 Causes severe skin burns and eye damage

H412 Harmful to aquatic life with long lasting effects

Precautionary Statements

P234 Keep only in original packaging.

P260 Do not breathe dust, fume, gas, mist, vapors or spray.

P264 Wash hands and face thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

P280 Wear protective gloves, protective clothing, and eye/face protection.

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor.

P321 Specific treatment (see first-aid information on this label).

P330 Rinse mouth.

P363 Wash contaminated clothing before reuse.

P390 Absorb spillage to prevent material damage.

P405 Store locked up.

P406 Store in a corrosion resistant container with a resistant inner liner.

P501 Dispose of contents and container in accordance with local, regional, national, and international regulations.

Classification, hazard (H) and precautionary (P) statements and pictograms per OSHA HCS 2024 (29 CFR 1910.1200, Appendices A–C), aligned with GHS Rev. 7.

3 Composition / Information on Ingredients

Component	CAS No.	Formula	Concentration
Ferric chloride	7705-08-0	FeCl3	35-45% (w/w)
Hydrochloric acid	7647-01-0	HCl	0-2% (w/w)

Concentrations are nominal; lot-specific values appear on the Certificate of Analysis. Components not contributing to classification are omitted.

4 First-Aid Measures

Eyes

Rinse with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention immediately.

Skin

Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing. Wash with soap. Get medical attention immediately.

Inhalation

Move person to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.

Ingestion

Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

Most Important Symptoms and Effects

Causes burns to the skin, eyes and mucous membranes; eye contact may cause permanent damage including blindness; ingestion burns the mouth, throat and stomach.

Ingestion may cause nausea, vomiting and abdominal pain; larger amounts may cause systemic poisoning.

Immediate Medical Attention and Special Treatment	Immediate medical attention is required after eye or skin contact or ingestion; tissue damage may continue after exposure ends.

5 Fire-Fighting Measures

Suitable Extinguishing Media	Dry chemical, CO2, water spray. Use water spray to cool containers.
Unsuitable Extinguishing Media	Do not use a solid water stream as it may scatter and spread fire.
Specific Hazards Arising from the Chemical	Fire may release corrosive and toxic gases. Containers may rupture when heated.
Protective Equipment	Wear self-contained breathing apparatus and full protective clothing.
Hazardous Combustion Products	Hydrogen chloride gas on heating or in a fire; flammable hydrogen from contact with metals.

6 Accidental Release Measures

Personal Precautions	Use PPE as described in Section 8. Ensure adequate ventilation. Evacuate personnel to safe areas.
Hazard-Specific Precautions	Do not touch spilled material without protective equipment. Neutralize residue only with a method suitable for the material, then collect.
Environmental Precautions	Prevent leakage or spillage from entering drains, sewers, or waterways.
Containment & Cleanup	Absorb with inert material. Collect in appropriate waste container. Dispose per applicable regulations.

7 Handling and Storage

Safe Handling	Use with adequate ventilation. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Keep container closed when not in use.
Safe Storage	Store in a cool, dry, well-ventilated area. Use corrosion-resistant containers. Keep away from incompatible materials (see Section 10). Keep containers tightly closed.
Specific Storage Precautions	Store in closed polyethylene, fiberglass or rubber-lined containers, never metal. Keep away from bases and metals.

8 Exposure Controls / Personal Protection

Occupational Exposure Limits

Limit	Value
ACGIH TLV	1 mg/m^3 TWA (soluble iron salts, as Fe); hydrogen chloride 2 ppm Ceiling
NIOSH REL	1 mg/m^3 TWA (Fe)

Engineering Controls	Use adequate ventilation. Provide eyewash stations and quick-drench showers accessible to areas of use.
Eye/Face Protection	Wear chemical safety goggles or face shield.
Skin Protection	Wear chemical-resistant gloves and protective clothing.

Respiratory Protection	Where mist, spray or dust is generated (e.g., spraying, atomization, pressure washing), use a NIOSH-approved half-face air-purifying respirator with combination acid gas / P100 cartridges. Ensure local exhaust ventilation.

Exposure limits sourced from NIOSH Pocket Guide, OSHA 29 CFR 1910.1000 and ACGIH TLVs.

9 Physical & Chemical Properties

Appearance	Dark brown liquid
Odor	Slight acidic odor
Odor Threshold	No data available
pH	1–2
Melting Point / Freezing Point	< -20 °C
Boiling Point	100 to 110 °C (212 to 230 °F) (aqueous solution)
Flash Point	Not applicable
Evaporation Rate	No data available
Flammability (solid, gas)	No data available
Upper/Lower Flammability or Explosive Limits	No data available
Vapor Pressure	About 17.5 mmHg at 20 °C (water vapor)
Vapor Density	No data available
Relative Density	1.41–1.44 at 20 °C (water = 1)
Solubility	Completely miscible with water
Partition Coefficient (n-octanol/water)	No data available
Auto-ignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Particle Characteristics	Not applicable
Form	Liquid
Density	1.40-1.43 g/cm^3 (40%, 20°C)

Values shown reflect product-specific canonical data. Lot-specific ranges may vary; see the Certificate of Analysis for the shipped lot.

10 Stability and Reactivity

Reactivity	May be corrosive to metals.
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing conditions.
Conditions to Avoid	Heat (releases hydrogen chloride) and contact with metals and incompatible materials.
Incompatible Materials	Metals, especially copper, aluminum, zinc and mild steel (corrosion and flammable hydrogen); alkalis and bases; strong oxidizers and reducing agents.
Hazardous Decomposition Products	Hydrogen chloride gas on heating or in a fire; flammable hydrogen from contact with metals.

11 Toxicological Information

See below for route-specific acute toxicity data.

Likely Routes of Exposure	Inhalation, skin contact, eye contact, ingestion.
Symptoms	Causes burns to the skin, eyes and mucous membranes; eye contact may cause permanent damage including blindness; ingestion burns the mouth, throat and stomach. Ingestion may cause nausea, vomiting and abdominal pain; larger amounts may cause systemic poisoning.
Delayed and Chronic Effects	No delayed or chronic effects identified beyond the classification in Section 2.

Route	Value
LD50 Oral (rat)	450–900 mg/kg (ferric chloride); product ATE about 455 mg/kg
LD50 Dermal (rabbit)	> 2,000 mg/kg (ferric chloride, rat)

Carcinogen Classification

Agency	Status
IARC	Group 3 — not classifiable as to its carcinogenicity to humans (Hydrochloric acid; IARC agent: Hydrochloric acid, Vol. 54).
NTP	Not listed as carcinogen.
OSHA	Not listed as carcinogen.

12 Ecological Information

Aquatic Hazard	H412 Harmful to aquatic life with long lasting effects
Ecotoxicity	Daphnia EC50: 30.06 mg/L (48 h, Ceriodaphnia dubia — pH/hydrolysis-driven; 95% CI 28.20–31.72; cf. Daphnia 96-h TLm 15 mg/L (USCG CHRIS)); Fish LC50: > 26 mg/L (96 h, Gambusia affinis — pH/hydrolysis-driven (hydrolyzes to ferric hydroxide + HCl))
Persistence & Degradability	Not applicable (inorganic salt; hydrolyzes, toxicity driven by acidification and ferric hydroxide floc)
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available

13 Disposal Considerations

Dispose of contents/container in accordance with applicable federal, state, and local regulations. Do not dispose of into drains or waterways.

EPA RCRA Waste Codes	D002 (corrosive, pH ≤ 2, 40 CFR 261.22). Not a P- or U-listed waste.

If discarded, this material may be a corrosive hazardous waste (EPA RCRA D002, 40 CFR 261.22): aqueous with pH ≤ 2 or ≥ 12.5, or a liquid that corrodes steel at more than 6.35 mm per year. The waste generator must make the final hazardous-waste determination.

14 Transport Information

US DOT (49 CFR)

UN Number	UN2582
Proper Shipping Name	Ferric chloride, solution
Hazard Class	8
Packing Group	III
Additional US DOT Requirements	A package containing 1,000 lb or more of ferric chloride (about 211 gal of 40% solution, so 275- and 330-gal totes) is a hazardous substance: add RQ to the shipping description. Not a marine pollutant.

IMDG / IATA classifications may differ from US DOT. Verify current regulations before international shipment.

15 Regulatory Information

Inventory / List	Status
California Proposition 65	Not listed
US EPA TSCA Active Inventory	Listed
EPCRA SARA 313 (TRI)	Contains Hydrochloric acid (CAS 7647-01-0) at 0-2%; listed (de minimis 1.0%).
CERCLA Reportable Quantity (RQ)	Ferric chloride (CAS 7705-08-0) 1,000 lb (454 kg), about 2,500 lb or 211 US gal of 40% solution.

SARA 311/312 hazard categories correspond to the GHS classification in Section 2. Data retrieved as of: California Proposition 65 2026-11-02; US EPA TSCA Active Inventory 2026-11-02; EPCRA SARA 313 (TRI) 2026-11-02.

16 Other Information

Revision Date	2026-11-12
Format	16-section format per OSHA HCS 2024 (29 CFR 1910.1200, Appendix D), aligned with GHS Rev. 7.

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