

Ferric Chloride (43%)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : FERRIC CHLORIDE
PRODUCT USE : Wastewater Treatment, etching
PRODUCT DESCRIPTION : Red-brown liquid with slight acidic odor.
WHMIS CLASSIFICATION: E - Corrosive Material

MANUFACTURER : CESCO SOLUTIONS, INC.
ADDRESS : 2227 Midway Lane, Bellingham, WA 98226

EMERGENCY PHONE : 1-800-424-9300
INFORMATION PHONE : (360) 733-7478

2. HAZARDS IDENTIFICATION

SIGNAL WORD: Danger



HAZARD STATEMENTS: May cause eye & skin irritation.
Harmful if inhaled.
Harmful if swallowed.
Suspected of causing genetic defects.

POTENTIAL HEALTH EFFECTS

EYES:

Eye irritant, may cause redness, burning or tearing.

SKIN:

Mild to moderate skin irritant. May cause some dryness of skin with repeated contact.

INGESTION:

Harmful if swallowed.

INHALATION:

Inhalation can cause nose, throat and respiratory tract irritation and coughing.

MEDICAL CONDITIONS AGGRAVATED:

N/AV

CHRONIC (CANCER) INFORMATION:

There is no data available on the chronic effects of ingestion of this material.

TERATOLOGY (BIRTH DEFECT) INFORMATION:

No Information.

REPRODUCTION INFORMATION:

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No Information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component/Exposure Limits	CAS#	WT%
FERRIC CHLORIDE (43% FeCl ₃)	7705-08-0	90 -100%
.....OSHA PEL-TWA 1 mg/m ³ SOLUBLE IRON SALTS (as Fe)		
.....ACGIH TLV-TWA 1mg/m ³ SOLUBLE IRON SALTS (as Fe)		
HYDROCHLORIC ACID CAS NO.7647-01-0 0.5% OSHAPEL 5ppm, 7.5 mg/m ³ ceiling		
.....ACGIH TLV 5 ppm, 7.5 mg/m ³		

4. FIRST AID MEASURES

EYES:

Wash eyes immediately with plenty of running water for 15-20 minutes, or until no evidence of chemical remains, including under eyelids. Remove any contact lenses at once. Speed in beginning the eye wash is essential if permanent injury is to be avoided. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN:

Flush contaminated skin with water for 15 minutes, or until no evidence of chemical remains. Remove contaminated clothing under the shower immediately. Prolong washing in serious cases until doctor arrives. GET MEDICAL CARE FOR EVIDENCE OF BURNING. If evidence of chemical burn exists, cover with sterile, dry dressing. Bandage securely, but not too tightly.

INGESTION:

Do not induce vomiting. Drink two glasses of water. Treat symptomatically and supportively. GET MEDICAL ATTENTION IMMEDIATELY. CAUTION: IF UNCONSCIOUS OR HAVING TROUBLE BREATHING OR IN CONVULSIONS, DO NOT INDUCE VOMITING OR GIVE WATER.

INHALATION:

Remove from exposure to mist. If breathing has stopped, provide artificial respiration. Keep the person warm and at rest. OBTAIN IMMEDIATE MEDICAL ATTENTION.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT: Non-combustible. Method: Not Applicable

FLAMMABLE LIMITS: Lower: N/A Upper: N/A

AUTOIGNITION TEMPERATURE: N/A

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HAZARDOUS COMBUSTION PRODUCTS:

Hydrogen chloride and phosgene.

EXTINGUISHING MEDIA:

Use media appropriate for surrounding material. Use water spray to cool containers exposed to fire from as far a distance as possible.

FIREFIGHTING INSTRUCTIONS:

SCBA recommended with a full face piece operated in pressure-demand mode or other positive pressure mode. Wear full protective clothing. Run-off may cause pollution. Dike to contain run-off for proper handling as stated in Section 7.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Negligible fire hazard when exposed to heat or flame under normal conditions. Fire and explosion hazard may exist when product is in contact with metals due to evolution of hydrogen gas.

SENSITIVE TO STATIC DISCHARGE:

No Information

SENSITIVE TO IMPACT

None known.

6. ACCIDENTAL RELEASE MEASURES

Do not touch spilled material. Stop leak if you can without risk. For SMALL SPILLS pick up spill with vacuum equipment (acid resistant) for disposal, or flush to holding area with water.

For LARGER SPILLS, dike far ahead of spill for later disposal. Keep unnecessary people away from area. Isolate hazard area and deny entry.

Neutralize residues with lime or soda ash and rinse with water. According to 40 CFR 302 Table 302.4 (CERCLA), environmental releases that exceed the RQ must be reported to the National Response Center by calling 1-800-424-8802 (202-426-2675) and the State Emergency Response Commission and the Local Emergency Planning Committee (40 CFR 355.40) as appropriate. The RQ for Ferric Chloride is 1,000 lbs. The RQ for FERRIC CHLORIDE is 2,325 lbs.

7. HANDLING AND STORAGE

Store in well sealed containers which are protected from physical damage. Avoid handling conditions that can lead to spills or mist formation. Drains must have retention basins for pH adjustment and neutralization of spilled materials and flushings prior to discharge. Have abundant running water available where material is stored, unloaded or handled. Store above the freezing point of water. Avoid contact with incompatible chemicals listed in Section 10. DO NOT permit workers to handle ACID solutions without proper training and proper equipment. Bulk storage containers and ancillary fill and feed systems should be constructed out of appropriate materials such as polyethylene, polypropylene and rubber-lined steel. Storage tanks should be vented to scrubber or atmosphere and should have secondary containment.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Provide natural or mechanical ventilation to minimize exposure, especially where possibility of mist formation exists. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult NFPA Standard 91 for design exhaust systems.

RESPIRATORY PROTECTION:

Have available and wear as appropriate for exposure limits: NIOSH/MSHA approved respirator. Supplied-air respirator with a full face-piece, helmet or hood; self-contained breathing apparatus with a full face-piece.

SKIN PROTECTION:

Apron or protective clothing, and rubber boots (tops covered by apron or clothing to prevent entrance of material).

EYE PROTECTION:

Employee must wear splash proof and/or dust-resistant safety goggles with a full face-shield to prevent eye contact with this substance. DO NOT WEAR CONTACT LENSES.

PROTECTIVE GLOVES:

Employee must wear appropriate protective gloves to prevent contact with this substance.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 223F
APPEARANCE & ODOR: Red-brown liquid with slight acidic odor.
VAPOR DENSITY: N/AV
VAPOR PRESSURE: N/AV
SPECIFIC GRAVITY: 1.417
pH: <2 (neat)
SOLUBILITY IN WATER: Complete.
VOC: N/AV

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID):

Keep away from metals and high heat.

INCOMPATIBILITY:

Alkalies. Aluminum, aluminum alloys, carbon steel, copper, copper alloys, alkaline materials and organic compounds including nylon. Material has a moderate oxidizing capability, avoid contact with strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS:

Hydrogen chloride and phosgene.

HAZARDOUS POLYMERIZATION:

Has not been reported to occur. Emits toxic hydrogen chloride fumes when heated to decomposition temperature.

11. TOXICOLOGICAL INFORMATION

TOXOLOGICAL/ECOLOGICAL INFORMATION
Based on Ferric Chloride Solid (anhydrous)

CHRONIC/CARCINOGENICITY:

Acute Toxicity:
Oral: LD50/oral/rat: = 450 mg/kg

TERATOLOGY:

N/AV

REPRODUCTION:

Reproductive Effects: TDLo Rat 1 day(s) intratesticular 12,976 ug/kg; TDLoRat 1 day(s) intravaginal 29 mg/kg
pre pregnancy continuous

MUTAGENICITY:

Mutagenicity: Escherichia coli - 500 nmol/tube: Phage inhibition capacity: Escherichia coli - 41 ng/well

12. ECOLOGICAL INFORMATION

Harmful to aquatic life.

ECOTOXICOLOGICAL INFORMATION:

Ecotoxicity: TLm Daphnia 15 ppm/96 hour fresh water
Persistence/degradability: Data not available
Bio-accumulation: Data not available

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:

Waste acid must never be discharged directly to sewers or surface waters. First convert to neutral salts by covering with soda ash or sodium carbonate. Scoop up slurry and dispose of in accordance with all local, state and federal disposal and discharge laws.

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:

May be a RCRA regulated hazardous waste upon disposal due to corrosive characteristic. Comply with all

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Federal, State and local laws and regulations upon disposal.

CLEAN WATER ACT REQUIREMENTS:

Ferric chloride is designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION (USA):

UN 2582, Ferric chloride, Solution, Class 8, PGIII.

TDG REGULATIONS (CANADA):

UN 2582, Ferric chloride, Solution, Class 8, PGIII.

15. REGULATORY INFORMATION:

U.S. FEDERAL REGULATIONS:

SARA TITLE III (SUPERFUND AMENDMENTS & REAUTHORIZATION ACT):

302/304 EXTREMELY HAZARDOUS SUBSTANCES:

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, Section 302 requires notification of the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC) of the presence of Extremely Hazardous Substances (EHS), 40 CFR 355 Appendix A, in amounts in excess of the threshold planning quantity (TPQ). Extremely Hazardous Substances contained in this product are:

NONE. Section 304 requires notification of SERC and LEPC of releases involving a RQ of an EHS or CERCLA Hazardous Substance.

Ferric chloride is considered a CERCLA Hazardous substance with a reportable quantity (RQ) of 2,325 lbs of Ferric Chloride.

311/312 HAZARD CATEGORIES:

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: An Immediate (Acute) Health Hazard.

313 REPORTABLE INGREDIENTS:

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all SDS's that are copied or distributed for this material. Refer to Section 3, HAZARDOUS INGREDIENTS/SARA III INFORMATION, the components that are subject to reporting are designated by an asterix (*).

TSCA (TOXIC SUBSTANCE CONTROL ACT) STATUS:

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:

N/AV

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INTERNATIONAL REGULATIONS:

CANADIAN WHMIS:

N/AV

STATE REGULATIONS:

16. OTHER INFORMATION

NFPA RATINGS:

HEALTH (H): 2 FIRE (F): 0 REACTIVITY (R): 1

HMIS CODES:

HEALTH (H): 2 FIRE (F): 0 PHYSICAL HAZARD (P): 1

SDS REVISION DATE: February 2, 2018

NAME OF PREPARER: Environmental, Health & Safety Department.

CONTACT PHONE NUMBER: (360) 733-7478

MANUFACTURER DISCLAIMER:

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