

Safety Data Sheet

Ferric Chloride Solution, 29%

Section 1 - Chemical Product and Company Identification

SDS Name: Ferric Chloride Solution, 29%

Catalog Numbers: SO-125A

Company Identification: Transene Company, Inc., DBA ROWLEY BIOCHEMICAL, Inc.
10 ELECTRONICS AVENUE
DANVERS, MA 01923

For information, call: 978-739-4883

Emergency Number: 800-424-9300

For CHEMTREC assistance, call: 800-424-9300

Section 2 - Hazards Identification

GHS Classifications Category

H290-Corrosive to metals: 1

H303-Acute toxicity, oral: 5

H314-Skin corrosion/irritation: 1B

H318-Serious eye damage/eye irritation: 1

H332-Acute toxicity, inhalation: 4

H335-Specific target organ toxicity, single exposure; Respiratory tract irritation: 3

H401-Hazardous to the aquatic environment, acute hazard: 2

H411-Hazardous to the aquatic environment, long-term hazard: 2

29% of the mixture consists of ingredients of unknown acute dermal toxicity.

29% of the mixture consists of ingredients of unknown acute inhalation toxicity.

Pictograms or Hazard Symbols and Hazard Statement(s):



Signal Word: Danger

Hazard Statements:

H290-May be corrosive to metals

H303-May be harmful if swallowed

H314-Causes severe skin burns and eye damage

H318-Causes serious eye damage
H332-Harmful if inhaled
H335-May cause respiratory irritation (target organs: respiratory tract)
H401-Toxic to aquatic life
H411-Toxic to aquatic life with long lasting effects

Precautionary Statements:

P234-Keep only in original packaging.
P260-Do not breathe dusts or mists.
P261-Avoid breathing dust/fume/gas/mist/vapours/spray.
P264-Wash thoroughly after handling.
P271-Use only outdoors or in a well-ventilated area.
P273-Avoid release to the environment.
P280-Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312-If swallowed: Call a Poison Center/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/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/doctor.
P312-Call a Poison Center/doctor if you feel unwell.
P363-Wash contaminated clothing before reuse.
P390-Absorb spillage to prevent material damage.
P391-Collect spillage.
P403+P233-Store in a well-ventilated place. Keep container tightly closed.
P405-Store locked up.
P406-Store in a corrosion resistant container with a resistant inner liner.
P501-Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 3 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent
10025-77-1	Ferric Chloride Hexahydrate	29 w/v
7647-01-0	Hydrochloric Acid (36-38%)	0.38 v/v
7732-18-5	Water	Balance

Section 4 - First Aid Measures

Eye Exposure: Corrosive to naked eye. In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Remove contact lenses, if present and easy to do. Continue rinsing. May cause permanent eye damage or blindness. Seek immediate medical attention.

Dermal Exposure: Obtain immediate medical attention; corrosive to exposed skin. Causes severe skin burns. In case of skin contact, flush with copious amounts of water for at least 15 minutes. Take off immediately all contaminated clothing and shoes. Wash clothing and shoes before reuse. May cause deep and penetrating burns.

Oral Exposure: If swallowed, seek immediate medical advice. Will cause severe burns to the mouth and severe and permanent damage to the digestive tract. Do NOT induce vomiting. Rinse mouth with water and, after rinsing, drink water.

Inhalation Exposure: If inhaled, remove to fresh air. Seek immediate medical attention. If not breathing, give artificial respiration. Inhalation of vapors may cause coughing, choking, inflammation of the nose, throat, and upper respiratory tract. In severe cases, it may cause pulmonary edema, circulatory failure, and death.

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. During a fire, irritating gases may be generated by thermal decomposition or combustion.

Extinguishing media: Use dry chemical, carbon dioxide, dry sand, water spray or alcohol-resistant foam.

Hazardous Combustion Products: Hydrogen chloride gas, hydrogen gas, chlorine, iron oxides, irritating and toxic fumes and gases.

Flash Point: Not available

Autoignition Temperature: Not available

Explosion Limits, Lower: Not available

Upper: Not available

NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s):

Wear personal protective equipment. Do not ingest or inhale. Do not get on skin or clothing. Do not get in eyes. Ensure adequate ventilation.

Methods for Cleaning up: Spilled material may be neutralized with alkaline material (soda ash, lime). Absorb with sand, earth, or vermiculite. Do not use combustible materials such as saw dust. Carefully sweep up and containerize for proper disposal. Do not release to the environment. Do not release to drains.

Section 7 - Handling and Storage

Use care when handling. Wear personal protective equipment. Wash thoroughly after handling. Ensure adequate ventilation. Do not ingest or inhale. Do not get on skin or

clothing. Do not get in eyes. Keep in a tightly closed and non-metal container. Store in a cool, dry, and well-ventilated area. Keep away from incompatible materials.

Section 8 - Exposure Controls, Personal Protection
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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 general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Exposure Limits:

Chemical Name	ACGIH - TLV	NIOSH - IDLH	OSHA - Final PELs
Ferric Chloride Hexahydrate CAS#10025-77-1	1 mg/m ³ TWA	1 mg/m ³ TWA	1 mg/m ³ TWA (vacated)
Hydrochloric Acid CAS#7647-01-0	2 ppm Ceiling	5 ppm Ceiling 7 mg/m ³ Ceiling 50 ppm IDLH	5 ppm Ceiling 7 mg/m ³ Ceiling

OSHA Vacated PELs: Ferric Chloride Hexahydrate: 1 mg/m³ TWA
Hydrochloric Acid: 5 ppm Ceiling; 7 mg/m³ Ceiling

Section 9 - Physical and Chemical Properties
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Physical State: Liquid

Appearance: Dark yellow-amber

Odor: Odorless

Vapor Pressure: Not available

Odor Threshold: Not available

Vapor Density: Not available

pH: 0.25-0.45

Relative Density: Not available

Melting point/freezing point: Not available

Solubility: Soluble in water

Boiling Point: Not available

Flash Point: Not available

Evaporation Rate: Not available

Flammability (solid, gas): Not available

Partition coefficient: n-octanol/water: Not available

Autoignition Temperature: Not available
Decomposition Temperature: Not available
Viscosity: Not available
Specific Gravity/Density: Not available

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to avoid: Incompatible materials, ignition sources, and excess heat. Direct sunlight.

Incompatibilities with Other Materials: Strong oxidizing agents, bases, reducing agents, acids, metals, sulfides, sulfites, formaldehyde, sodium hypochlorite, amines, cyanides, alkalis, permanganates, fluorine, metal oxides, hydroxides, carbonates, and metal acetylides.

Hazardous Decomposition Products: Hydrogen chloride gas, hydrogen gas, chlorine, iron oxides, irritating and toxic fumes and gases.

Section 11 - Toxicological Information

CAS#10025-77-1 Ferric Chloride Hexahydrate: RTECS#: NO5425000

LD50 Oral: 900 mg/kg (rat)

LD50 Dermal: Not available

LC50 Inhalation: Not available

Carcinogenicity: Ferric Chloride Hexahydrate CAS#10025-77-1 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop. 65.

CAS#7647-01-0 Hydrochloric Acid: RTECS#: MW4025000

LD50 Oral: 238-277 mg/kg (rat)

LD50 Dermal: >5010 mg/kg (rabbit)

LC50 Inhalation: 1.68 mg/L 1h (rat)

Carcinogenicity: Hydrochloric Acid CAS#7647-01-0 is not listed by NTP, ACGIH, OSHA, or California Prop. 65. Hydrochloric Acid is listed by IARC (Group 3, Not Classifiable as to its Carcinogenicity to Humans).

Information on the likely routes of exposure: Routes of entry anticipated: oral, dermal, inhalation, and eye.

Epidemiology: Not available.

Teratogenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects: Not available.

Neurotoxicity: Not available.

Mutagenicity: Has been investigated for germ cell mutagenicity in animal studies. (Hydrochloric acid)

Specific Target Organ Toxicity, Single Exposure: Respiratory tract.

Specific Target Organ Toxicity, Repeated Exposure: Not available.

Symptoms associated with exposure: If ingested, causes severe burns of the mouth and throat, danger of perforation of the esophagus and stomach. If inhaled, mucosal irritations, cough, shortness of breath, dizziness, headache, and damage to the respiratory tract. Causes serious eye damage, pain, watering, and redness. Risk of blindness. Corrosive. Skin contact may cause severe burns, redness, pain, blisters, swelling, scarring, deep ulcers, and skin discoloration. Causes burns by all exposure routes.

The toxicological properties of this material have not been thoroughly investigated.

Section 12 - Ecological Information

Ecotoxicity: Do not release to the environment. Do not release to drains. Toxic to aquatic life. May cause long-term adverse effects to the aquatic environment.

CAS#10025-77-1 Ferric Chloride Hexahydrate:

LC50, freshwater fish: 20.95-22.56 mg/L 96h semi-static (pimephales promelas)(fathead minnow) (anhydrous substance)

LC50, freshwater fish: 20.26 mg/L 96h semi-static (lepomis macrochirus)(bluegill) (anhydrous substance)

EC50, water flea: 9.6 mg/L 48h static (daphnia magna) (anhydrous substance)

CAS#7647-01-0 Hydrochloric Acid:

LC50, freshwater fish: 282 mg/L 96h (gambusia affinis)(mosquito fish)

LC50, freshwater fish: 862 mg/L (leuciscus idus)(golden orfe)

EC50, water flea: 56 mg/L 72h (daphnia magna)

Persistence and degradability: No information available.

Bio-accumulative potential: No information available.

Mobility: Will likely be mobile in the environment due to its water solubility.

Section 13 - Disposal Considerations

DISPOSAL: Dispose of in accordance with all federal, state, and local regulations.

Section 14 – Transport Information

DOT

Proper shipping name: Corrosive liquid, acidic, inorganic, N.O.S. (Hydrochloric acid, Ferric chloride hexahydrate)

UN 3264

PG III

Hazard Class 8

Section 15 - Regulatory Information

Canada Regulatory Information

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the SDS contains all the information required by the CPR.

Section 16 - Additional Information

SDS Creation Date: 10/15/12

Revision #1: 6/1/15 RC

Revision #2: 5-4-18

Revision #3: 11-29-21

Revision #4: 1-24-24

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