

Safety Data Sheet

Iron Solution

Section 1 - Chemical Product and Company Identification

SDS Name: Iron Solution

Catalog Numbers: SO-108, F-371-1

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

H290-Corrosive to metals: 1

H303-Acute toxicity, oral: 5

H314-Skin corrosion/irritation: 1B

H318-Serious eye damage/eye irritation: 1

H373-Specific target organ toxicity, repeated exposure: 2

H402-Hazardous to the aquatic environment, acute hazard: 3

7% of the mixture consists of ingredients of unknown acute dermal toxicity.

7% 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
H373-May cause damage to organs through prolonged or repeated exposure (kidney, liver, and blood)
H402-Harmful to aquatic life

Precautionary Statements:

P234-Keep only in original packaging.
P260-Do not breathe dust/fume/gas/mist/vapours/spray.
P264-Wash thoroughly after handling.
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.
P314-Get medical advice/attention if you feel unwell.
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/container in accordance with local/regional/national/international regulations.

Section 3 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent
7782-63-0	Ferrous Sulfate Heptahydrate	4.5 w/v
10025-77-1	Ferric Chloride Hexahydrate	2.5 w/v
7732-18-5	Water	Balance

Section 4 - First Aid Measures

Eye Exposure: 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. May cause blindness. Seek immediate medical attention.

Dermal Exposure: In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Seek immediate medical attention.

Oral Exposure: If swallowed, seek immediate medical advice. May cause severe and permanent damage to the digestive tract. Causes gastrointestinal burns and perforation of the digestive tract. Do not induce vomiting. Wash mouth with water and drink water (stop if the exposed person feels sick as vomiting may be dangerous).

Inhalation Exposure: If inhaled, remove to fresh air. Seek immediate medical attention.

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, chlorine, iron oxides, sulfur 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: 2; 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: Absorb with sand, earth, or vermiculite. 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. Store in a tightly closed non-metal container in a cool, dry, and well-ventilated area. Keep away from incompatible materials.

Section 8 - Exposure Controls, Personal Protection

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 - PELs
Ferrous Sulfate Heptahydrate CAS#7782-63-0	1 mg/m3 TWA	1 mg/m3 TWA	1 mg/m3 TWA (vacated)
Ferric Chloride Hexahydrate CAS#10025-77-1	1 mg/m3 TWA	1 mg/m3 TWA	1 mg/m3 TWA (vacated)

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: Green-blue

Odor: Odorless

Vapor Pressure: Not available

Odor Threshold: Not available

Vapor Density: Not available

pH: 1.69-1.89

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, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents, strong bases, and metals.

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

Section 11 - Toxicological Information
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CAS#7782-63-0 Ferrous Sulfate Heptahydrate: RTECS#: NO8510000

LD50 Oral: 319 mg/kg (rat)
LD50 Dermal: Not available
LC50 Inhalation: Not available

Carcinogenicity: Ferrous Sulfate Heptahydrate CAS#7782-63-0 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop. 65.

Note: Mutagenic and tumorigenic effects have occurred in experimental animals with ferrous sulfate heptahydrate.

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

LD50 Oral: 316 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.

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: Mutagenic and tumorigenic effects have occurred in experimental animals with ferrous sulfate heptahydrate.

Specific Target Organ Toxicity, Single Exposure: Not available.

Specific Target Organ Toxicity, Repeated Exposure: Kidney, liver, and blood.

Symptoms associated with exposure: Causes severe skin burns and eye damage. May cause severe and permanent damage to the digestive tract. Causes gastrointestinal burns and perforation of the digestive tract. Causes serious eye damage. May cause blindness. Strong caustic effect on skin and mucous membranes. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of hands/feet, dizziness, lightheadedness, chest pain, muscle pain. Overexposure may cause bloody vomiting, diarrhea, drop in blood pressure, stomach irregularities. Repeated exposure may damage kidneys, liver, blood.

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 environment.

CAS#7782-63-0 Ferrous Sulfate Heptahydrate:

LC50, freshwater fish: 20.8 mg/L 96h static (oncorhynchus mykiss)(rainbow trout)

LC50, freshwater fish: 925 mg/L 96h static (poecilia reticulata)

EC50, water flea: 6.15-9.26 mg/L 48h static (daphnia magna)

CAS#10025-77-1 Ferric Chloride Hexahydrate:

LC50, freshwater fish: 20.3 mg/L 96h (lepomis macrochirus)(bluegill sunfish)

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

Persistence and degradability: Not available.

Bio-accumulative potential: Not 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. (Ferric chloride hexahydrate & Ferrous sulfate heptahydrate)

UN3264

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: 3-20-23

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Rowley Biochemical, Inc. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages, howsoever arising, even if Rowley Biochemical, Inc. has been advised of the possibility of such damages.