

## Section 01 Identification

<b>Product Identifier</b>	Ferric Sulphate Solution Ferric Sulphate 60%, Solution
<b>Other Means of Identification</b>	Ferric sulfate solution, Diiron tris(sulphate), Sulfuric acid, iron(3++) salt (3:2), CAS: 10028-22-5, FERS60**
<b>Product Use and Restrictions on Use</b>	Industrial applications. Potable and wastewater treatment, odour removal.
<b>Initial Supplier Identifier</b>	ClearTech Industries Inc 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7  Phone: 800.387.7503 Fax: 888.281.8109 <a href="http://www.cleartech.ca">www.cleartech.ca</a>
<b>Prepared By</b>	ClearTech Industries Inc. technical writer
<b>24-Hour Emergency Phone</b>	306.664.2522

## Section 02 Hazard Identification

### Physical Hazards

**Corrosive to metals** Category 1

### Health Hazards

**Acute toxicity - oral** Category 4

**Skin corrosion / irritation** Category 1A

**Serious eye damage / eye irritation** Category 1

**Carcinogenicity** Category 1A

### Signal Word

**Danger**

### Hazard Statements

- H290 May be corrosive to metals.
- H302 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.
- H350 May cause cancer (Inhalation)

### Pictograms



## Precautionary Statements

### Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P234 Keep only in original packaging.
- P260 Do not breathe vapours, fumes, or mists.
- P264 Wash affected body parts thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear protective gloves, protective clothing, eye protection, face protection

### Response

- P301 P312 P330 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor if you feel unwell.
- P303 P361 P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse.
- P304 P340 P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.
- P305 P351 P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308 P313 IF exposed or concerned: Get medical advice or attention.
- P390 Absorb spillage to prevent material damage.

### Storage

- P405 Store locked up.

### Disposal

- P501 Dispose of contents / container in accordance with all federal, provincial and / or local regulations including the Canadian Environmental Protection Act.

## Hazards Not Otherwise Classified

Not available

## Supplemental Information

Not available

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## **Section 03 Composition / Information on Ingredients**

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### Hazardous Ingredients:

Chemical name	Common name(s)	CAS number	Concentration (w/w%)
Sulfuric acid, iron(3++) salt (3:2)	Ferric sulphate	10028-22-5	58-62%
Sulphuric acid	Battery acid	7664-93-9	1-5%

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## **Section 04 First-Aid Measures**

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### Description of necessary first-aid measures

<b>Inhalation</b>	Remove source of exposure or move person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor. If breathing has stopped, trained personnel should begin rescue breathing or if the heart has stopped, immediately start cardiopulmonary resuscitation (CPR) or automated external defibrillation (AED). Avoid mouth to mouth contact by using a barrier device. If exposed or concerned: Get medical advice / attention.
<b>Ingestion</b>	Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor. If vomiting occurs naturally, lie on your side, in the recovery position.
<b>Skin contact</b>	Avoid direct contact. Wear chemical protective clothing, if necessary. Take off immediately contaminated clothing, shoes and leather goods. Rinse skin with lukewarm, gently flowing water / shower for 30 minutes. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before re-use, or discard. If exposed or concerned: Get medical advice / attention.
<b>Eye contact</b>	Avoid direct contact. Wear chemical protective gloves, if necessary. Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for 30 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately call a POISON CENTER or doctor.

## **Most important symptoms and effects, both acute and delayed**

<b>Inhalation</b>	Causes severe burns to the mouth and throat (mist).
<b>Ingestion</b>	Causes burns to the mouth and throat. Harmful if swallowed.
<b>Skin contact</b>	Causes severe skin burns.
<b>Eye contact</b>	Causes serious eye damage.
<b>Further information</b>	For further information see Section 11 Toxicological Information.

## **Section 05 Fire Fighting Measures**

<b>Suitable extinguishing media</b>	Extinguish fire using extinguishing agents suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	Water jets are not recommended in fires involving chemicals.
<b>Specific hazards arising from the chemical</b>	Reacts with many metals to liberate hydrogen gas that can form explosive mixtures. In the event of a fire oxides of sulphur may be released.
<b>Special protective equipment for fire-fighters</b>	Wear NIOSH-approved self-contained breathing apparatus and chemical-protective clothing.

## **Section 06 Accidental Release Measures**

<b>Personal Precautions / Protective Equipment / Emergency Procedures</b>	Wear appropriate personal protective equipment (See Section 08 Exposure Controls and Personal Protection). Stay upwind, ventilate area. Do not breathe vapours, fumes, or mists. Do not use material handling equipment with exposed metal surfaces.
<b>Environmental Precautions</b>	Prevent material from entering waterways, sewers or confined spaces. Notify local health and wildlife officials. Notify operators of nearby water intakes.
<b>Methods and Materials for Containment and Cleaning Up</b>	SMALL SPILLS: Stop or reduce leak if safe to do so. Clean up spill with non-reactive absorbent and place in suitable, covered, labeled containers. Flush area with water. Contaminated absorbent material may pose the same hazards as the spilled product. LARGE SPILLS: Contact fire and emergency services and supplier for advice.

## Section 07 Handling and Storage

<b>Precautions for Safe Handling</b>	Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Prevent the release of vapours, fumes, or mists into the workplace air. Inspect containers for damage or leaks before handling. If the original label is damaged or missing replace with a workplace label. Have suitable emergency equipment for fires, spills and leaks readily available. Never return contaminated material to its original container.
<b>Conditions for Safe Storage</b>	Store in a cool, dry, well-ventilated area, out of direct sunlight, away from heat sources and incompatible materials. Always store in original labeled container. Keep containers tightly closed when not in use and when empty. Empty containers may contain hazardous residues. Protect label and keep it visible. Do not transfer to metal containers.
<b>Incompatibilities</b>	Bases, such as potassium hydroxide, sodium hydroxide, calcium hydroxide (slaked lime), ammonia, carbonates. Metals, such as aluminum, steel, and brass.

## Section 08 Exposure Controls and Personal Protection

### Exposure limits

Component	Regulation	Type of listing	Value
Iron salts - soluble, as Fe	ACGIH	TWA	1 mg/m <sup>3</sup>
	ACGIH	STEL/Ceiling	2 mg/m <sup>3</sup>
Sulfuric acid (Thoracic)	ACGIH	TWA	0.2 mg/m <sup>3</sup>

### Engineering controls

<b>Ventilation Requirements</b>	Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.
<b>Other</b>	An emergency shower and eyewash station should be available, tested, and be in close proximity to the product being handled in accordance with provincial regulations.

### Protective equipment

The following are recommendations only. It is the responsibility of the employer / user to conduct a hazard assessment of the process in which this product being used and determine the proper engineering controls and PPE for their process. Additional regulatory and safety information should be sought from local authorities and, if needed, a professional industrial hygienist.

<b>Eye and face protection</b>	Where there is potential eye or face exposure, tightly fitting safety goggles and a face shield or a full face respirator or similar protective equipment which protects the wearer's face and eyes are recommended. Contact lenses are not recommended; they may contribute to severe eye injury.
<b>Hand and body protection</b>	Disposable latex or nitrile gloves are recommended to prevent incidental contact. Butyl rubber, neoprene, or PVC skin protection is recommended for extended contact. Leather gloves are not recommended for chemical protection. Refer to manufacturer's specifications for breakthrough times and permeability information; note that breakthrough times and permeability vary with temperature, application and age of material. Continued use of contaminated safety gear or clothing is not recommended; wash before reuse or discard.

<b>Respiratory protection</b>	In case of insufficient ventilation wear suitable respiratory equipment.
<b>Thermal hazards</b>	Not available

## Section 09 Physical and Chemical Properties

### Appearance

<b>Physical state</b>	Liquid
<b>Colour</b>	Red to dark brown
<b>Odour</b>	Not available
<b>Odour threshold</b>	1-5 ppm

### Property

<b>pH</b>	<1.0
<b>Melting point / freezing point</b>	<-18 °C
<b>Initial boiling point and boiling range</b>	Not available
<b>Flash point</b>	Not applicable
<b>Evaporation rate</b>	Not available
<b>Flammability</b>	Not applicable
<b>Upper flammable limit</b>	Not applicable
<b>Lower flammable limit</b>	Not applicable
<b>Vapour pressure</b>	Not available
<b>Vapour density</b>	1.268
<b>Relative density</b>	Not applicable
<b>Solubility</b>	Soluble in water
<b>Partition coefficient: n-octanol/water</b>	Not available
<b>Auto-ignition temperature</b>	Not applicable
<b>Decomposition temperature</b>	Not available
<b>Viscosity</b>	Not available
<b>Specific gravity</b>	1.50-1.62 g/mL @ 20 °C

## Section 10 Stability and Reactivity

<b>Reactivity</b>	May be corrosive to metals. Reacts with many metals to liberate hydrogen gas that can form explosive mixtures. Reacts with water to generate heat. Reacts violently with bases.
<b>Stability</b>	This product is stable if stored according to the recommendations in Section 07.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization is not known to occur.
<b>Conditions to avoid</b>	Avoid contact with incompatible materials. Avoid high temperatures. Avoid contact with incompatible materials. Keep container tightly sealed. Do not use in areas without adequate ventilation.
<b>Incompatible materials</b>	Bases, such as potassium hydroxide, sodium hydroxide, calcium hydroxide (slaked lime), ammonia, carbonates. Metals, such as aluminum, steel, and brass.
<b>Hazardous decomposition products</b>	Thermal decomposition may produce oxides of sulphur.

## Section 11 Toxicological Information

### Acute Toxicity (LD50 / LC50 values)

Component	Route	Species	Value	Exposure time
Iron (II) chloride	Oral	Rat	500 mg/kg bw	

### Toxic Health Effect Summary

<b>Chemical characteristics</b>	This product is not expected to be absorbed by the body. The primary toxic affect is most likely it's low pH.
<b>Skin</b>	Causes severe skin burns.
<b>Ingestion</b>	Causes burns to the mouth and throat. Harmful if swallowed.
<b>Inhalation</b>	Causes severe burns to the mouth and throat (mist).
<b>Eye contact</b>	Causes serious eye damage.
<b>Sensitization</b>	This product and its components at their listed concentration have no known sensitizing effects.
<b>Mutagenicity</b>	This product and its components at their listed concentration have no known mutagenic effects.
<b>Carcinogenicity</b>	IARC has classified mists from strong inorganic acids as group 1, carcinogenic to humans.
<b>Reproductive toxicity</b>	This product and its components at their listed concentration have no known reproductive effects.
<b>Specific organ toxicity</b>	This product and its components at their listed concentration have no known effects on specific organs.
<b>Aspiration hazard</b>	Not available
<b>Synergistic materials</b>	Not available

## Section 12 Ecological Information

### Ecotoxicity

Component	Type	Species	Value	Exposure Time
Ferric sulphate	LC50 (pH adjusted)	Rainbow trout	>27.9 mg/L	96 hours
Ferrous sulphate	EC50 (pH adjusted)	Daphnia magna	5.25 mg/L	24 hours

<b>Biodegradability</b>	The domestic substance list categorizes Ferric sulphate as persistent.
<b>Bioaccumulation</b>	The domestic substance list categorizes Ferric sulphate as non-bioaccumulative.
<b>Mobility</b>	This product is water soluble, but is expected to adsorb to soil and is not expected to contaminate ground water.
<b>Other adverse effects</b>	Not available

## Section 13 Disposal Considerations

<b>Waste From Residues / Unused Products</b>	Dispose in accordance with all federal, provincial, and local regulations including the Canadian Environmental Protection Act.
<b>Contaminated Packaging</b>	Do not remove label, follow label warnings even after the container is empty. Empty containers should be recycled or disposed of at an approved waste handling facility.

## Section 14 Transport Information

<b>UN number</b>	UN3264
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# Safety Data Sheet

Ferric Sulphate Solution  
ClearTech Industries Inc

<b>UN proper shipping name and description</b>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (FERRIC SULPHATE AND SULPHURIC ACID)
<b>Transport hazard class(es)</b>	8
<b>Packing group</b>	II
<b>Excepted quantities</b>	1 L
<b>Environmental hazards</b>	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.
<b>Special precautions</b>	16 (1) The technical name of at least one of the most dangerous substances that predominantly contributes to the hazard or hazards posed by the dangerous goods must be shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(ii)(A) of Part 3 (Documentation). The technical name must also be shown, in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3) of Part 4 (Dangerous Goods Safety Marks).
<b>Transport in bulk</b>	ERAP index: Not available  MARPOL 73/78 and IBC Code: This product is not listed in Chapter 17 of the IBC Code.
<b>Additional information</b>	Secure containers (full or empty) during shipment and ensure all caps, valves, or closures are secured in the closed position.

**TDG PRODUCT CLASSIFICATION:** This product has been classified on the preparation date specified at section 16 of this SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and published test data regarding the classification of this product are listed in the references at section 16 of this SDS.

## Section 15 Regulatory Information.

**NOTE: THE PRODUCT LISTED ON THIS SAFETY DATA SHEET HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN HAZARDOUS PRODUCTS REGULATIONS. THIS SAFETY DATA SHEET CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.**

All components of this product appear on the domestic substance list.

## Section 16 Other Information

**Date of latest revision: August 04, 2020**

**Note:** The responsibility to provide a safe workplace remains with the buyer / user. The buyer / user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the buyer / user to comply with all applicable laws and regulations regarding handling, using, reselling and shipping this product.

### **Attention: Receiver of the chemical goods / SDS coordinator**

As part of our commitment to the RDC Responsible Distribution® initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service center.

### **References:**

- 1) CHEMINFO
- 2) TOXNET

- 3) eChemPortal
- 4) ECHA
- 5) Transportation of Dangerous Goods Canada
- 6) HSDB
- 7) PAN