Safety Data Sheet

FERRIC CHLORIDE SOLUTION

SECTION 1. IDENTIFICATION

Product Identifier	Ferric Chloride Solution Ferric Chloride 38% Solution (FERC3823, FERC38Q23) Ferric Chloride Solution (FERC**) Ferric Chloride Solution NSF® - 60 (FERCNSF23)
Other Means of Identification	DSL: Iron chloride (FeCl3) CAS: 7705-08-0
Product Use and Restrictions on Use	For commercial or industrial use. This product is certified to NSF / ANSI / CAN standard 60 for use in drinking water, see section 15 and the NSF website for further information.
Initial Supplier Identifier	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7 Phone: 800.387.7503 Fax: 888.281.8109 www.cleartech.ca
24-Hour Emergency Phone	306.664.2522

SECTION 2. HAZARD IDENTIFICATION

Corrosive to metals	Category 1
Acute toxicity - oral	Category 4
Skin corrosion / irritation	Category 1B
Serious eye damage / eye irritation	Category 1

Pictograms

Signal Word: Danger

Hazard Statements

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

Precautionary Statements

Prevention

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 P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor if you feel unwell.
P303 P361 P353 P363	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 P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
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

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredients:

Chemical name	*Common name(s)*	*CAS number*	*Concentration (w/w%)*
Iron chloride (FeCl3)	Ferric Chloride	7705-08-0	36-42%

SECTION 4. FIRST-AID MEASURES

Description of necessary first-aid measures

Inhalation	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.
Ingestion	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.
Skin contact	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.
Eye contact	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

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

SECTION 5. FIRE FIGHTING MEASURES

Suitable extinguishing media	Extinguish fire using extinguishing agents suitable for the surrounding fire.
Unsuitable extinguishing media	Water jets are not recommended in fires involving chemicals.
Specific hazards arising from the chemical	Reacts with many metals to liberate hydrogen gas that can form explosive mixtures. Heat may liberate corrosive and toxic hydrogen chloride gas. Hydrogen chloride is denser than air and will accumulate in low lying areas.
Special protective equipment for fire-fighters	Wear NIOSH-approved self-contained breathing apparatus and chemical-protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions / Protective Equipment / Emergency Procedures	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.
Environmental Precautions	Prevent material from entering waterways, sewers or confined spaces. Notify local health and wildlife officials. Notify operators of nearby water intakes.
Methods and Materials for Containment and Cleaning Up	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 7. HANDLING AND STORAGE

Precautions for Safe Handling	An emergency shower and eyewash station should be available, tested, and be near to the product being handled in accordance with provincial regulations. Use sensible workplace 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.
Conditions for Safe Storage	Store in a cool, dry, well-ventilated area, 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.
Incompatibilities	Bases, such as potassium hydroxide, sodium hydroxide, calcium hydroxide (slaked lime), ammonia, carbonates. Metals, such as aluminum, steel, and brass.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure limits

Component	Regulation	Type of listing	Value
Iron salts - soluble, as Fe	ACGIH	TWA	1 mg/m³
	ACGIH	STEL/Ceiling	2 mg/m³

Engineering controls

Ventilation Requirements	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.

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.

Eye and face protection	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.
Hand and body protection	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.
Respiratory protection	Where concentrations are above recommended limits, approved respiratory protection should be worn, ensure cartridges provide protection against this product. Depending on conditions such as temperature and handling method negative pressure masks may not provide suitable protection, and positive pressure respirators or SCBAs may be required. Reevaluate any respiratory protection used regularly, as their protective effects tend to degrade over time. In emergency conditions SCBAs are recommended.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Colour	Orange to dark brown
Odour	Not available
Odour threshold	Not applicable
pH	<1.0
Melting point / freezing point	~ -10 °C
Initial boiling point and boiling range	Not available

Flash point	Does not flash
Evaporation rate	Not available
Flammability	Not applicable
Upper flammable limit	Not applicable
Lower flammable limit	Not applicable
Vapour pressure	0 Pa @ 20 °C (ferric chloride)
Vapour density	Not applicable
Relative density	Not applicable
Solubility	Soluble in water
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available
Viscosity	Not available
Specific gravity	≥1.40
Particle characteristics	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	May be corrosive to metals. Reacts with many metals to liberate hydrogen gas that can form explosive mixtures. Reacts violently with bases.
Stability	This product is stable if stored according to the recommendations in Section 07.
Possibility of hazardous reactions	Hazardous polymerization is not known to occur.
Conditions to avoid	Avoid contact with incompatible materials.
Incompatible materials	Bases, such as potassium hydroxide, sodium hydroxide, calcium hydroxide (slaked lime), ammonia, carbonates. Metals, such as aluminum, steel, and brass.
Hazardous decomposition products	Not available

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

Skin	Causes severe skin burns.
Ingestion	Causes burns to the mouth and throat. Harmful if swallowed.
Inhalation	Causes severe burns to the mouth and throat (mist).
Eye contact	Causes serious eye damage.
Sensitization	This product and its components at their listed concentration have no known sensitizing effects.

Mutagenicity	This product and its components at their listed concentration have no known mutagenic effects.
Carcinogenicity	This product and its components at their listed concentration have no known carcinogenic effects.
Reproductive toxicity	This product and its components at their listed concentration have no known reproductive effects.
Specific organ toxicity	This product and its components at their listed concentration have no known effects on specific organs.
Aspiration hazard	Not available
Synergistic materials	Not available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Component	*Type*	*Species*	*Value*	*Exposure Time*
Ferric chloride			No relevant effects	

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

SECTION 13. DISPOSAL CONSIDERATIONS

Waste From Residues / Unused Products	Dispose in accordance with all federal, provincial, and local regulations including the Canadian Environmental Protection Act.
Contaminated Packaging	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

UN number	UN2582
UN proper shipping name and description	FERRIC CHLORIDE SOLUTION
Transport hazard class(es)	8
Packing group	III
Excepted quantities	5 L
Environmental hazards	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.
Special precautions	No special precautions

Transport in bulk	ERAP index: Not available

MARPOL 73/78 and IBC Code:

Product name:	Ferric chloride solution	
Pollution category:	Y	
Hazards:	the product is included in the Code because of both its safety and pollution hazards.	
Ship type:	ship type 3	
Tank type:	integral gravity tank	
Tank vents:	open venting	
Tank environmental control:	no special requirements under this Code	
Electrical equipment:	Temperature classes	No information
	Apparatus group	No information
	Flash point	non-flammable product
Gauging:	open gauging	
Vapour detection:	no special requirements under this Code	
Fire protection:	no special requirements under this Code	
Emergency equipment	No	
Specific and operational requirements	15.11, 15.19.6, 16.2.9	

Additional information	Secure containers (full or empty) during shipment and ensure all caps, valves, or closures are secured in the closed position.

SECTION 15. REGULATORY INFORMATION

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

NSF Certification: Ferric Chloride Solution NSF® - 60 is certified to NSF / ANSI / CAN Standard 60 for coagulation & flocculation at a maximum dosage of 250 mg/L for all concentrations. NSF product use restrictions based on requirements obtained from the NSF website; consult NSF website for current requirements.

SECTION 16. OTHER INFORMATION

Date of latest revision: June 05, 2026

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) *NIOSH Pocket Guide to Chemical Hazards;* U.S. Department of Health and Human Services, https://www.cdc.gov/niosh/npg/default.html
2) *WorkSafe BC E-Limit;* Workers' Compensation Foard of British Columbia, https://elimit.online.worksafebc.com/
3) *ECHA - Registered Substance Dossier;* European Chemicals Agency, https://chem.echa.europa.eu/100.028.846/overview
4) *Transportation of Dangerous Goods Regulations;* Transport Canada, https://laws-lois.justice.gc.ca/eng/regulations/SOR-2001-286/index.html
5) Globally Harmonized System of Classification and Labeling of Chemicals (GHS) *Seventh revised edition*
6) International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) 2007 Edition
7) The ACS Style Guide