1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Ferric Chloride Reagent
Catalog Number:	RF40
Product Use:	For laboratory use only
Manufacturer's Name:	Dalynn Biologicals Inc.
Supplier's Name:	Dalynn Biologicals Inc.
Address:	3253 – 34 Avenue NE Calgary, AB, Canada T1Y 6X2
Telephone:	1-888-404-4045
Fax:	(403) 250-9010
Chemical Emergency: Phone Number Only	1-613-996-6666

2. HAZARD IDENTIFICATION

Emergency Overview

GHS Classification
Skin corrosion (Category 1B)
Serious eye damage (Category 1)

GHS Label Elements, Including Precautionary Statements
Pictogram

Signal word Danger

Hazard statement(s)

H301	Harmful if swallowed.
H313	May be harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.

Precautionary statement(s)

P233	Keep container tightly closed
P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves & clothing/ eye protection/ face protection.
P310	Immediately call a poison center or doctor.
P302+P352	If on skin: Wash with plenty of water.
P305+P351+P338	If in eyes: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.

3. COMPOSITION & INFORMATION ON INGREDIENTS

Synonyms 10% Ferric Chloride

INGREDIENT	%	CAS-No.	EC-No.	Index-No.
Ferric Chloide	10	7705-08-0	231-729-4	-
Hydrochloric acid	2	7647-01-0	231-595-7	017-002-01-X
Water	88	7732-18-5	231-791-2	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move affected individual out of affected area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing. Wash affected area with soap and plenty of water. If feeling unwell, consult a physician.

In case of eye contact
Flush eyes with plenty of water for at least 15 minutes. If feeling unwell, consult a physician.

If swallowed
Do not induct vomiting. Rinse mouth with water if patient is conscious. If conscious, give a glass of water to dilute stomach contents. If feeling unwell, consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Low flammability as the main component is water.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions: carbon dioxides, hydrogen chloride gas.

Explosion data – sensitivity to mechanical impact
Not sensitive to mechanical impact

Explosion data – sensitivity to static discharge
Not sensitive to static discharge

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing in dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up
Wearing appropriate safety gear including chemical resistant gloves and dust mask or respirator. Soak up with paper towel and place in sealed container and hold for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use in area with adequate ventilation.

Conditions for safe storage
Store at refrigerated conditions at 2 to 8°C away from direct light or sunlight.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Iron trichloride	7647-01-0	TWA	1 mg/m3	Canada. Alberta. Occupational Health and Safety Code (table 2:OEL)
	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required			
		TWA	1 mg/m3	Canada. British Columbia OEL
		STEL	2 mg/m3	Canada. British Columbia OEL
		TWAEV	1 mg/m3	Canada. Ontario OELs
		TWAEV	1 mg/m3	Canada. Quebec. Regulation respecting occupational health and safety, schedule 1, Part 1
	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required			
		TWA	1 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
Hydrochloric acid	7647-01-0	(c)	2 ppm 3 mg/m3	Canada. Alberta. Occupational Health and Safety Code (table 2:OEL)
	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required			
		C	2 ppm	Canada. British Columbia OEL
		C	5 ppm 7.5 mg/m3	Canada. Quebec. Regulation respecting occupational health and safety, schedule 1, Part 1
	A substance which may not be recirculated in accordance with section 108			
		C	2 ppm	USA. ACGIH Threshold Limit Values (TLV)

Personal protective equipment

Respiratory protection
Use in area with adequate ventilation. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type ABEK (EN14387)

respirator cartridges as a backup to engineering controls. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands after use.

Eye protection
Face shield and/or safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Skin and body protection
Wear appropriate clothing such as a lab coat that covers as much of the body as possible. Complete suit can also be worn if desired.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	Liquid
Color	Yellow

Safety data

pH	1.0 to 2.0 at 20°C (68°F)
Melting point/ freezing point	0°C (32°F)
Boiling point	100°C (212°F)
Flash point	No data available
Ignition temperature	No data available
Auto ignition temperature	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor pressure	No data available
Density	No data available
Water solubility	100% soluble
Partition coefficient/ n-octanol/water	No data available
Relative vapor density	No data available
Odour	No data available

Odour threshold	No data available
Evaporation rate	No data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
No data available

Chemical stability
Stable if stored as recommended.

Materials to avoid
Strong oxidizing agents, strong bases, strong acids, sodium and potassium metals

Hazardous decomposition products
Other decomposition products – No data available
Hazardous decomposition products formed under fire conditions – Carbon oxides, hydrogen chloride gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
No data available

Inhalation LC50
No data available

Other information on acute toxicity
No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by ACGIH.

Reproductive toxicity
No data available

Teratogenicity
No data available

Specific target organ toxicity – single exposure (GHS)
No data available

Specific target organ toxicity – repeated exposure (GHS)
No data available

Aspiration hazard
No data available

Potential health effects

Inhalation	Toxic if inhaled. Material is destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	May cause irritation or burns depending on duration.
Eyes	Causes irritation or burns on contact.
Ingestion	Harmful if swallowed. May cause burns to mouth, throat and stomach. Low toxicity in small quantities but larger doses may cause nausea, vomiting and diarrhea. Pink urine discoloration is a strong indicator of iron poisoning.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
No data available

Additional information
RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity
No data available

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

PBT and vPvB assessment

No data available

Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN Number: 2582 Class: 8 Packing Group: III
Proper Shipping Name: Ferric chloride solution
Reportable Quantity (RQ):
Marine Pollutant: No
Poison Inhalation Hazard: No

IMDG
UN Number: 2582 Class: 8 Packing Group: III EMS-No: F-A, S-B
Proper Shipping Name: Ferric chloride solution
Marine Pollutant: No

IATA
UN Number: 2582 Class: 8 Packing Group: III
Proper Shipping Name: Ferric chloride solution

15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by them.

16. OTHER INFORMATION

Further information
 The above information is believed to be correct but does not purport to be all inclusive and shall be only used as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Dalynn Biologicals Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.