Material Safety Data Sheet

Creation Date 08-Feb-2010 **Revision Date** 27-Nov-2012 **Revision Number** 2

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name **Ferric chloride hexahydrate**

Cat No. **I86-3; I86-10; I88-100; I88-500**

Synonyms Iron(III) chloride hexahydrate (Lumps/Technical/Certified ACS)

Recommended Use Laboratory chemicals

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview

Causes burns by all exposure routes. Harmful if swallowed. Hygroscopic.

Appearance Dark yellow **Physical State** Solid **odor** odorless

Target Organs Skin, Eyes, Respiratory system, Gastrointestinal tract (GI), Liver, Kidney, Blood

Potential Health Effects

Acute Effects
Principle Routes of Exposure

Eyes	Causes burns.
Skin	Causes burns. May be harmful in contact with skin.
Inhalation	Causes burns. May be harmful if inhaled.
Ingestion	Harmful if swallowed. Causes burns.

Chronic Effects Experiments have shown reproductive toxicity effects on laboratory animals. May cause adverse liver effects. May cause adverse kidney effects.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
Iron (III) chloride hexahydrate	10025-77-1	100

4. FIRST AID MEASURES

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Get medical attention immediately if symptoms occur.

Ingestion Do not induce vomiting. Call a physician or Poison Control Center immediately.

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point Not applicable
Method No information available.

Autoignition Temperature No information available.

Explosion Limits
Upper No data available
Lower No data available

Suitable Extinguishing Media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media No information available.

Hazardous Combustion Products No information available.

Sensitivity to mechanical impact No information available.
Sensitivity to static discharge No information available.

Specific Hazards Arising from the Chemical
Containers may explode when heated.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA **Health** 3 **Flammability** 0 **Instability** 1 **Physical hazards** N/A

6. ACCIDENTAL RELEASE MEASURES

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Personal Precautions Use personal protective equipment. Avoid dust formation. Remove all sources of ignition.

Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Remove all sources of ignition.

7. HANDLING AND STORAGE

Handling Wear personal protective equipment. Use only under a chemical fume hood. Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Do not get in eyes, on skin, or on clothing. Do not breathe dust. Do not ingest.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Iron (III) chloride hexahydrate	TWA: 1 mg/m^3	(Vacated) TWA: 1 mg/m^3	TWA: 1 mg/m^3

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Iron (III) chloride hexahydrate	TWA: 1.0 mg/m^3	TWA: 1 mg/m^3 STEL: 2 mg/m^3	

NIOSH IDLH: *Immediately Dangerous to Life or Health*

Personal Protective Equipment

Eye/face Protection 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 and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Dark yellow
odor	odorless
Odor Threshold	No information available.
pH	2 0.1M in water
Vapor Pressure	negligible
Vapor Density	No information available.
Viscosity	No information available.
Boiling Point/Range	280 - 285°C / 536 - 545°F

9. PHYSICAL AND CHEMICAL PROPERTIES

Melting Point/Range	37°C / 98.6°F
Decomposition temperature	No information available.
Flash Point	Not applicable
Evaporation Rate	negligible
Specific Gravity	1.82 (H2O=1)
Solubility	Soluble in water
log Pow	No data available
Molecular Weight	270.29
Molecular Formula	Cl3 Fe . 6 H2 O

10. STABILITY AND REACTIVITY

Stability	Hygroscopic. Stable under normal conditions.
Conditions to Avoid	Avoid dust formation. Incompatible products. Excess heat. Exposure to moist air or water.
Incompatible Materials	Strong oxidizing agents, Metals
Hazardous Decomposition Products	Hydrogen chloride gas, Chlorine, Thermal decomposition can lead to release of irritating gases and vapors
Hazardous Polymerization	Hazardous polymerization does not occur
Hazardous Reactions .	None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information	See actual entry in RTECS for complete information.
Component Information	
Irritation	Causes burns by all exposure routes
Toxicologically Synergistic Products	No information available.

Chronic Toxicity

Carcinogenicity	There are no known carcinogenic chemicals in this product
Sensitization	No information available.
Mutagenic Effects	Mutagenic effects have occurred in humans.
Reproductive Effects	Experiments have shown reproductive toxicity effects on laboratory animals.
Developmental Effects	No information available.

Teratogenicity No information available.

Other Adverse Effects The toxicological properties have not been fully investigated.. See actual entry in RTECS for complete information.

Endocrine Disruptor Information No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

. Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Iron (III) chloride hexahydrate	Not listed	22 mg/l 96H (anh subst)	Not listed	9.6 mg/l 48H (anh subst)

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available

Mobility .

Component	log Pow
Iron (III) chloride hexahydrate	4

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT

UN-No UN3260
Proper Shipping Name CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.
Proper technical name Iron (III) chloride hexahydrate
Hazard Class 8
Packing Group III

TDG

UN-No UN3260
Proper Shipping Name CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.
Hazard Class 8
Packing Group III

IATA

14. TRANSPORT INFORMATION

UN-No UN3260
Proper Shipping Name Corrosive solid, acidic, inorganic, n.o.s
Hazard Class 8
Packing Group III

IMDG/IMO

UN-No UN3260
Proper Shipping Name Corrosive solid, acidic, inorganic, n.o.s
Hazard Class 8
Packing Group III

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Iron (III) chloride hexahydrate	-	-	-	-	-		X	X	X	X	-

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313
Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard Yes
Chronic Health Hazard Yes
Fire Hazard No
Sudden Release of Pressure Hazard No
Reactive Hazard No

Clean Water Act

Clean Air Act
Not applicable

OSHA
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

California Proposition 65
This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Iron (III) chloride hexahydrate	-	-	X	-	X

U.S. Department of Transportation

Reportable Quantity (RQ):	Y
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
D2A Very toxic materials
E Corrosive material

16. OTHER INFORMATION

Prepared By	Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com
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Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS