SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	Iron(II) chloride, tetrahydrate
CAS number	13478-10-9
Synonyms	Ferrous chloride, tetrahydrate

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Laboratory chemicals, reagent, reducing agent.

1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute oral toxicity	Category 4
Serious Eye Damage/Eye Irritation	Category 1

2.2 GHS Label elements, including precautionary statements

Pictogram 

Signal Word Danger

Hazard statements Harmful if swallowed. Causes serious eye damage.

Precautionary statements:

Prevention: Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.

Eyes: 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/physician.

Ingestion: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Disposal: Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None identified.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Iron(II) chloride, tetrahydrate	Ferrous chloride, tetrahydrate	13478-10-9	100%
Ferrous chloride	-	7758-94-3	-

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

In case of skin contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

In case of eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

If swallowed Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed

None reasonably foreseeable. Causes severe eye damage. Product is a corrosive material. Use of gastric lavage or emesis is containdicated. Possible product of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media — CO_2, dry chemical, dry sand, alcohol-resistant foam.

Unsuitable extinguishing media — No information available.

5.2 Specific hazards arising from the substance or mixture

The product causes burns of eyes, skin and mucous membranes. Hazardous combustion products: Thermal decomposition can lead to release of irritating gases and vapors. Hydrogen chloride gas.

5.3 Special 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.

5.4 Further information

Flash Point — No data available.

Autoignition Temperature — No information available.

Explosion limits

Upper	No data availble.
Lower	No data available
Sensitivity to Mechanical Impact	No information available.
Sensitivity to Static Discharge	No information available.

NFPA

Health	Flammability	Instability	Physical hazards
3	0	0	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation.

6.2 Environmental precautions

Should not be released into the environment.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal

6.4 Reference to other sections

See section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Ensure adequate ventilation. Avoid ingestion and inhalation. Avoid dust formation.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible materials.

Incompatibilities

Strong oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Component	Type	Value
Iron (II) chloride, tetrahydrate	(Vacated) TWA	1 mg/m3
Ferrous chloride	(Vacated) TWA	1 mg/m3

US. ACGIH Threshold Limit Values

Component	Type	Value
Iron (II) chloride, tetrahydrate	TWA	1 mg/m3
Ferrous chloride	TWA	1 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value

Iron (II) chloride, tetrahydrate	TWA	1 mg/m3
Ferrous chloride	TWA	1 mg/m3

Biological occupational exposure limits
No information available.

8.2 Exposure controls

Appropriate engineering controls
Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

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. Tight sealing safety goggles. Face protection shield.

Skin and body protection
Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory protection
Follow the OSHA respiratory 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.

Control of environmental exposure
No information available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Solid.
Appearance	Light Green.
Odor	Odorless.
Odor Threshold	No information available.
pH	2.5 100g/L aq sol (20 °C)
Melting Point/Range	105 - 110 °C / 221 - 230 °F
Boiling Point/Range	No information available.
Evaporation Rate	No information available.
Flammability (solid)	No information available.
Flammability or explosive limit	
Upper	No data available.
Lower	No data available.

Vapor Pressure	No information available.
Vapor Density	No information available.
Density	No information available.
Solubility	Soluble in water, Alcohol.
Partition coefficient; n-octanol/water	No data available.
Autoignition Temp	No information available.
Decomposition Temp	> 150 °C
Viscosity	No information available.
Molecular Formula	Cl2Fe . 4 H2O
Molecular Weight	198.81
VOC Content(%)	No information available.
Oxidizing properties	No information available.

9.2 Other safety information
No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity
None known, based on information available.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
None under normal processing.

10.4 Conditions to avoid
Incompatible products. Excess heat.

10.5 Incompatible materials
Strong oxidizing agents.

10.6 Hazardous decomposition products
Thermal decomposition can lead to release of irritating gases and vapors, hydrogen chloride gas.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Iron (II) chloride, tetrahydrate	705 mg/kg	-	-
Ferrous chloride	450 mg/kg (rat)	> 2000 mg/kg (rat)	-

Skin corrosion/irritation
Causes burns by all exposure routes.

Serious eye damage/eye irritation
Causes burns by all exposure routes.

Respiratory or skin sensitization
Causes burns by all exposure routes.

Germ cell mutagenicity
No information available.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Iron (II) chloride, tetrahydrate	13478-10-9	Not listed	Not listed	Not listed	Not listed	Not listed
Ferrous chloride	7758-94-3	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure
None known.

Specific target organ toxicity - repeated exposure
None known.

Reproductive toxicity
No information available.

Chronic effects
No information available.

11.2 Additional Information
Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigate: ingestion cause severe swelling, severe damage to the delicate tissue and danger of perforation.

SECTION 12: Ecological information

12.1 Toxicity
Do not empty into drains.

12.2 Persistence and degradability
Soluble in water. Persistence is unlikely based on information available.

12.3 Bio accumulative potential
No information available.

12.4 Mobility in soil

Will likely be mobile in the environment due to its water solubility.

12.5 Results of PBT and vPvB assessment
No information available.

12.6 Endocrine disrupting properties
No information available.

12.7 Other adverse effects
The toxicological properties have not been fully investigated.

SECTION 13: Disposal considerations

13.1 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.

SECTION 14: Transport information

DOT (US)
No information available.

IMDG
No information available.

IATA
No information available.

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)
Listed, 100 lb

SARA 304 Emergency release notification
Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)
Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

See section 2 for more information.

SARA 313 (TRI reporting)

Not regulated

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

Listed, Hazardous Substances, 100 lb.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not listed

US state regulations

US. Massachusetts RTK - Substance List

Listed, (FERROUS CHLORIDE)

US. New Jersey Worker and Community Right-to-Know Act

Listed, (FERROUS CHLORIDE)

US. Pennsylvania Worker and Community Right-to-Know Law

Listed, (IRON (II) CHLORIDE, TETRAHYDRATE)
Listed, (FERROUS CHLORIDE)

California Proposition 65

Not listed

SECTION 16: Other information

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Revision: 0

SECTION 17: 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.