

Material Safety Data Sheet

Ferrous Chloride 99+%

Section 1 - Chemical Product and Company Identification

MSDS Name: Ferrous Chloride

Catalog Numbers: 15510

Synonyms: Iron (II) Chloride Tetrahydrate, 99+%

Company Identification:

ELECTRON MICROSCOPY SCIENCES
1560 INDUSTRY ROAD * P.O. BOX 550
HATFIELD, PA 19440

For information, call: 215-412-8400

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
13478-10-9	Ferrous Chloride	>99	unlisted

Hazard Symbols: XN

Risk Phrases: 22 36/37/38

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: almost white solid. May cause severe eye and skin irritation with possible burns. Causes severe respiratory tract irritation. Causes severe digestive tract irritation with pain, nausea, vomiting and diarrhea. May corrode the digestive tract with hemorrhaging and possible shock. Hygroscopic. **Danger!** Corrosive.

Target Organs: No data found.

Potential Health Effects

Eye: Contact with eyes may cause severe irritation, and possible eye burns. May cause chemical conjunctivitis.

Skin: Contact with skin causes irritation and possible burns, especially if the skin is

wet or moist.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Ingestion of iron compounds may cause hemorrhage and necrosis of the stomach with shock, severe diarrhea, and possible coma.

Inhalation: Causes respiratory tract irritation. Can produce delayed pulmonary edema.

Chronic: Effects may be delayed.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Substance is noncombustible.

Extinguishing Media: Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation. Wash clothing before reuse.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Corrosives area. Store protected from moisture.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ferrous Chloride	none listed	none listed	none listed

OSHA Vacated PELs: Iron (II) chloride tetrahydrate: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: 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: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Appearance: almost white
Odor: none reported
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: Not available.
Evaporation Rate:Not available.
Viscosity: Not available.
Boiling Point: Not available.
Freezing/Melting Point:Not available.
Decomposition Temperature:> 150 deg C
Solubility: soluble in alcohol
Specific Gravity/Density:1.9300g/cm³
Molecular Formula:Cl₂Fe.4H₂O
Molecular Weight:198.81

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: Incompatible materials, dust generation, excess heat, exposure to moist air or water.

Incompatibilities with Other Materials: Moisture, strong acids, strong bases, strong oxidizing agents.

Hazardous Decomposition Products: Hydrogen chloride, irritating and toxic fumes and gases, oxides of iron.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 13478-10-9: NO5600000

LD50/LC50:

Not available.

Carcinogenicity:

CAS# 13478-10-9: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Neurotoxicity: No information available.

Mutagenicity: No information available.

Other Studies: No data available.

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	FERROUS CHLORIDE, SOLID				CORROSIVE SOLID NOS (FERROUS CHLORIDE)
Hazard Class:	8				8
UN Number:	NA1759				UN1759
Packing Group:	II				II

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 13478-10-9 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA**CERCLA Hazardous Substances and corresponding RQs**

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 13478-10-9: acute.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 13478-10-9 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations**European Labeling in Accordance with EC Directives****Hazard Symbols:**

XN

Risk Phrases:

R 22 Harmful if swallowed.

R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 37/39 Wear suitable gloves and eye/face protection.

WGK (Water Danger/Protection)

CAS# 13478-10-9: 1

Canada - DSL/NDSL

None of the chemicals in this product are listed on the DSL or NDSL list. **Canada -**

WHMIS

This product has a WHMIS classification of E.

Canadian Ingredient Disclosure List

CAS# 13478-10-9 (listed as Iron salts (soluble)) is listed on the Canadian Ingredient Disclosure List.

Exposure Limits

CAS# 13478-10-9: OEL-DENMARK:TWA 1 mg(Fe)/m³ JANUARY 1993 OEL-FINL AND:TWA 1 mg(Fe)/m³ JANUARY 1993 OEL-THE NETHERLANDS:TWA 1 mg(Fe)/m³ JANUARY 1993 OEL-SWITZERLAND:TWA 1 mg(Fe)/m³ JANUARY 1993 OEL-UNITED KINGDOM:TWA 1 mg(Fe)/m³; STEL 2 mg(Fe)/m³ JANUARY 1993

Section 16 - Additional Information

MSDS Creation Date: 8/24/1997

Revision #4 Date:09/22/2004

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Electron Microscopy Sciences be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Electron Microscopy Sciences has been advised of the possibility of such damages.