

DATE: 01/18/99 ACCT: 888235001 PAGE: 1  
INDE: D90157360 CAT NO: 190500 PO NBR: CAROL VC011599

\*\*\*\* MATERIAL SAFETY DATA SHEET \*\*\*\*

Iron(II) chloride tetrahydrate, 99+%  
09850

\*\*\*\* SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION \*\*\*\*

MSDS Name: Iron(II) chloride tetrahydrate, 99+%

Catalog Numbers:

AC205080030, AC205080050, AC205085000, S71937, S71937-1, I90 500, I90-500,  
I90500, S719371

Synonyms:

Ferrous chloride tetrahydrate  
Company Identification: Fisher Scientific  
1 Reagent Lane  
Fairlawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

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

\*\*\*\* SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS \*\*\*\*

CAS#	Chemical Name	%	EINECS#
13478-10-9	Iron (II) chloride tetrahydrate	99	unlisted

Hazard Symbols: XN  
Risk Phrases: 22 36/37/38

\*\*\*\* SECTION 3 - HAZARDS IDENTIFICATION \*\*\*\*

EMERGENCY OVERVIEW

Appearance: Not available.

Caution! Hygroscopic. Causes severe respiratory tract irritation.  
May cause severe eye and skin irritation with possible burns. Causes  
severe digestive tract irritation with pain, nausea, vomiting and  
diarrhea. May corrode the digestive tract with hemorrhaging and  
possible shock.

Target Organs: None.

Potential Health Effects

Eye:

Contact with eyes may cause severe irritation, and possible eye  
burns.

Skin:

Contact with skin causes irritation and possible burns, especially  
if the skin is wet or moist.

Ingestion:

May cause severe gastrointestinal tract irritation with nausea,  
vomiting and possible burns.  
Iron compounds cause hemorrhage and necrosis of the stomach with  
shock, severe diarrhea and possible coma. Delayed symptoms such as  
acidosis, shock, rapid breathing, liver injury and possible death may  
occur.

Inhalation:

Causes respiratory tract irritation.

Chronic:

No information found.

\*\*\*\* SECTION 4 - FIRST AID MEASURES \*\*\*\*

Eyes:

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

Skin:

Get medical aid immediately. Immediately flush skin with plenty of  
soap and water for at least 15 minutes while removing contaminated  
clothing and shoes.

Ingestion:

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

Inhalation:

Get medical aid immediately. Remove from exposure to fresh air  
immediately. If not breathing, give artificial respiration. If  
breathing is difficult, give oxygen.

Notes to Physician:

Treat symptomatically and supportively.

Antidote:

None reported.

\*\*\*\* SECTION 5 - FIRE FIGHTING MEASURES \*\*\*\*

General Information:

Wear appropriate protective clothing to prevent contact with skin  
and eyes. Wear a self-contained breathing apparatus (SCBA) to

DATE: 01/18/99 ACCT: 888235001 PAGE: 2  
INDE: D90157360 CAT NO: 190500 PO NBR: CAROL VC011599

prevent contact with thermal decomposition products. Substance is  
noncombustible.  
Extinguishing Media:  
Substance is noncombustible; use agent most appropriate to  
extinguish surrounding fire.  
Autoignition Temperature: Not available.  
Flash Point: Not available.  
NFPA Rating: Not published.  
Explosion Limits, Lower: Not available.  
Upper: Not available.

\*\*\*\* 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. Avoid generating dusty conditions.

\*\*\*\* SECTION 7 - HANDLING AND STORAGE \*\*\*\*

Handling:

Wash thoroughly after handling. Use with adequate ventilation.  
Minimize dust generation and accumulation. Do not get on skin or in  
eyes. Do not ingest or inhale. Wash clothing before reuse.

Storage:

Store in a cool, dry, well-ventilated area away from incompatible  
substances.

\*\*\*\* SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION \*\*\*\*

Engineering Controls:

Local exhaust ventilation may be necessary to control any air  
contaminants to within their TLVs during the use of this product.

Chemical Name	Exposure Limits		
	ACGIH	NIOSH	OSHA - Final PELs
Iron (II) chloride tetrahydrate	as Fe: 1 mg/m <sup>3</sup> TWA (listed under IRON SALTS (SOLUBLE)).	1 mg/m <sup>3</sup> TWA (listed under IRON SALTS (SOLUBLE)).	none listed

OSHA Vacated PELs:

Iron (II) chloride tetrahydrate:  
as Fe: 1 mg/m<sup>3</sup> TWA (listed under IRON SALTS (SOLUBLE))

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 impervious gloves.

Clothing:

Wear appropriate protective clothing to minimize  
contact with skin.

Respirators:

Follow the OSHA respirator regulations found in 29CFR  
1910.134 or European Standard EN 149. Always use a  
NIOSH or European Standard EN 149 approved respirator  
when necessary.

\*\*\*\* SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES \*\*\*\*

Physical State: Solid  
Appearance: Not available.  
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/cm<sup>3</sup>  
Molecular Formula: Cl<sub>2</sub>Fe<sub>4</sub>H<sub>2</sub>O  
Molecular Weight: 198.81

\*\*\*\* SECTION 10 - STABILITY AND REACTIVITY \*\*\*\*

Chemical Stability:  
Stable.

DATE: 01/18/99 ACCT: 888235001 PAGE: 3  
INDEX: D90157360 CAT NO: 190500 PO NBR: CAROL VCO11599

Conditions to Avoid:  
Incompatible materials.  
Incompatibilities with Other Materials:  
Incompatible with ethylene oxide, potassium, and sodium.  
Hazardous Decomposition Products:  
Hydrogen chloride.  
Hazardous Polymerization: Has not been reported.

\*\*\*\* SECTION 11 - TOXICOLOGICAL INFORMATION \*\*\*\*

RTECS#:  
CAS# 13478-10-9: NO5600000  
LD50/LC50:  
Not available.  
Carcinogenicity:  
Iron (II) chloride tetrahydrate -  
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.  
Epidemiology:  
No data available.  
Teratogenicity:  
No data available.  
Reproductive Effects:  
No data available.  
Neurotoxicity:  
No data available.  
Mutagenicity:  
No data available.  
Other Studies:  
No data available.

\*\*\*\* SECTION 12 - ECOLOGICAL INFORMATION \*\*\*\*

Ecotoxicity:  
Not available.  
Environmental Fate:  
Not available.  
Physical/Chemical:  
Not available.  
Other:  
Not available.

\*\*\*\* SECTION 13 - DISPOSAL CONSIDERATIONS \*\*\*\*

Dispose of in a manner consistent with federal, state, and local regulations.  
RCRA D-Series Maximum Concentration of Contaminants:  
None listed.  
RCRA D-Series Chronic Toxicity Reference Levels: None listed.  
RCRA F-Series: None listed.  
RCRA P-Series: None listed.  
RCRA U-Series: None listed.

\*\*\*\* SECTION 14 - TRANSPORT INFORMATION \*\*\*\*

US DOT  
Shipping Name: FERROUS CHLORIDE, SOLID  
Hazard Class: 8  
UN Number: NA1759  
Packing Group: II  
IMO  
Not regulated as a hazardous material.  
IATA  
Not regulated as a hazardous material.  
RID/ADR  
Not regulated as a hazardous material.  
Canadian TDG  
No information available.

\*\*\*\* SECTION 15 - REGULATORY INFORMATION \*\*\*\*

US FEDERAL

TSCA  
CAS# 13478-10-9 is not on the TSCA Inventory. It is a hydrate and exempt from TSCA Inventory requirements (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  
Section 302 (RQ)  
None of the chemicals in this material have an RQ.  
Section 302 (TPQ)  
None of the chemicals in this product have a TPQ.  
SARA Codes  
CAS # 13478-10-9: acute.

DATE: 01/18/99 ACCT: 888235001 PAGE: 4  
INDEX: D90157360 CAT NO: 190500 PO NBR: CAROL VCO11599

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 depleters.  
This material does not contain any Class 2 Ozone depleters.

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

Iron (II) chloride tetrahydrat can be found on the following state right to know lists: California, (listed as IRON SALTS (SOLUBLE)), Pennsylvania, (listed as IRON SALTS (SOLUBLE)), Minnesota, (listed as IRON SALTS (SOLUBLE)).

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

None of the chemicals in this product are listed on the DSL/NDSL list. This product has a WHMIS classification of E.  
CAS# 13478-10-9 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 13478-10-9: OEL-DENMARK:TWA 1 mg(Fe)/m3 JANUARY 1993. OEL-FINLAND: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: 1/23/1995 Revision #4 Date: 8/24/1997

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 way shall Fisher 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 Fisher has been advised of the possibility of such damages.