

SAFETY DATA SHEET

Preparation Date: 02/09/2015

Revision Date: 07/13/2018

Revision Number: G3

1. IDENTIFICATION

Product identifier

Product code: M1106
Product Name: MANGANESE CHLORIDE, TETRAHYDRATE, USP

Other means of identification

Synonyms: Manganese dichloride tetrahydrate; Manganous chloride tetrahydrate
CAS #: 13446-34-9
RTECS # OO9625000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000

Order Online At: <https://www.spectrumchemical.com>
Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 4
-----------------------	------------

Label elements

Warning

Hazard statements
 Harmful if swallowed



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product

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

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Manganese Chloride, Tetrahydrate	13446-34-9	100

4. FIRST AID MEASURES

First aid measures

- General Advice:** National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.
- Skin Contact:** Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention if irritation develops. Consult a physician if necessary.
- Eye Contact:** Flush eyes with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.
- Inhalation:** Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

- Symptoms**
- May cause eye/skin/respiratory tract irritation
 - Sweating
 - May cause salivation
 - May cause nausea
 - Abdominal pain
 - Central nervous system effects
 - May affect the cardiovascular system
 - May cause chemical pneumonitis
 - May cause bronchitis

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media:

The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media:

No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products:

If it is involved in a fire the following can be released:
Hydrogen Chloride Gas. Manganese. manganese oxides.

Specific hazards:

No information available.

Special Protective Actions for Firefighters

Specific Methods:

No information available.

Special Protective Equipment for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions:

Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Avoid contact with skin, eyes and clothing.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment

Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up

Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not ingest. Do not breathe dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials. Hygroscopic. Protect from moisture.

Incompatible Materials:

Metals
Potassium
Sodium
Zinc

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters**National occupational exposure limits****United States**

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WEEL
Manganese Chloride, Tetrahydrate	13446-34-9	None	None	0.02 mg/m ³ TWA (as Mn) (respirable fraction) 0.1 mg/m ³ TWA (as Mn) (inhalable fraction)	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Manganese Chloride, Tetrahydrate	13446-34-9	0.2 mg/m ³ TWA (as Mn)	0.2 mg/m ³ TWA (as Mn)	0.02 mg/m ³ TWA (as Mn) (respirable fraction) 0.1 mg/m ³ TWA (as Mn) (inhalable fraction)	0.2 mg/m ³ TWA _{EV} (as Mn)

Australia and Mexico

Components	CAS-No.	Australia	Mexico
Manganese Chloride, Tetrahydrate	13446-34-9	1mg/m ³ TWA	0.2 mg/m ³ TWA (as Mn)

Appropriate engineering controls**Engineering measures to reduce exposure:**

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment**Personal Protective Equipment**

Eye protection: Goggles or Safety glasses with side-shields

Skin and body protection: Long sleeved clothing
Chemical resistant apron
Gloves

Respiratory protection: Effective dust mask. Use a dust respirator under conditions where exposure to

the substance is apparent (e.g. generation of high concentration of dust (dust clouds) , inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures:

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid	Appearance: Crystals.	Color: Light red. Pink.
Odor: Odorless.	Taste No information available.	Formula: MnCl ₂ •4H ₂ O
Molecular/Formula weight (g/mole): 197.91	Flammability: No information available	Flashpoint (°C/°F): No information available.
Flash Point Tested according to: Not available	Autoignition Temperature (°C/°F): No information available	Lower Explosion Limit (%): No information available
Upper Explosion Limit (%): No information available	Melting point/range(°C/°F): 58°C/136.4°F	Decomposition temperature(°C/°F): No information available
Boiling point/range(°C/°F): 1190°C/2174°F	Bulk density: No information available	Density (g/cm³): 1.913
Specific gravity: 2.01	pH: 4.0-6.0 @ 99g/L @ 25°C	Vapor pressure @ 20°C (kPa): No information available
Evaporation rate: No information available	Vapor density: No information available	VOC content (g/L): No information available
Odor threshold (ppm): No information available	Partition coefficient (n-octanol/water): No information available	Viscosity: No information available
Miscibility: No information available	Solubility: Easily soluble in cold water	

10. STABILITY AND REACTIVITY

Reactivity
Reactive with metals

Chemical stability

Stability: Hygroscopic. Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Exposure to moisture. Incompatible materials.

Incompatible Materials: Metals
Potassium
Sodium
Zinc

Hazardous decomposition No information available.

Product code: M1106

Product name: MANGANESE
CHLORIDE, TETRAHYDRATE, USP

products:

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:

Ingestion. Inhalation.

Acute Toxicity

Component Information

Manganese Chloride, Tetrahydrate	
CAS-No.	13446-34-9

LD50/oral/rat = 1484 mg/kg Oral LD50 Rat
LD50/oral/mouse = No information available
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = 144 mg/kg Intraperitoneal LD50 Mouse;
138 mg/kg Intraperitoneal LD50 Rat;
225 mg/kg Parenteral LD50 Rat;
320 mg/kg Subcutaneous LD50 Mouse

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 1484 mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Product code: M1106

Product name: MANGANESE
CHLORIDE, TETRAHYDRATE, USP

Skin Contact: May cause skin irritation.

Eye Contact: May cause eye irritation.

Inhalation May cause irritation of respiratory tract. May cause bronchitis. May cause chemical pneumonitis.

Ingestion Harmful if swallowed.

Ingestion: Acute poisoning is rare, but may occur. It may cause abdominal pain, nausea. It may also affect behavior/central nervous system/nervous system(nervousness, irritability, emotional lability, compulsive behavior, apathy, generalized muscle weakness, a low monotonous voice,muscle twitching, limb stiffness, speech impairment , insomnia, incoordination, difficulty with fine movements, back pain, headache, clumsiness, personality changes, inappropriate crying, laughing and restlessness; gait alteration, loss of balance, fine tremor, loss of facial expressions, and speech disturbances develops prior to the onset of "parkinsonism", with muscle rigidity, staggering gait, dysphagia, and a course intention tremor apperaring. May also cause sweating, salivation, diminished libido or impotence

Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Ingestion or inhalation: It can affect behavior/central nervous system with symptoms similar to that of acute ingestion or inhalation. The primary clinical pattern following chronic exposure involves Parkinson-like symptoms due to central nervous system effects. The neurologic disorder that develops is known as "manganism." A psychiatric syndrome, once referred to as "manganese madness", may develop with symptoms of compulsive behavior, emotional lability and hallucinations. Chronic exposure may also result in significant decrease in heart rate, excessive salivation, increased sweating, pancreatitis, hypoglycemia, abdominal pain, hypermylasemia, and may affect metabolism (weight loss, hypercalcemia or hypocalcemia, liver, blood, kidneys, brain.

Sensitization: No information available.

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Manganese Chloride, Tetrahydrate	13446-34-9	Not listed	A4 - Not Classifiable as a Human Carcinogen (listed under Manganese inorganic compounds)	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: May cause adverse developmental effects based on animal data
Teratogenic Effects: May cause birth defects (teratogenic effects) based on animal test data

Specific Target Organ Toxicity

STOT - single exposure No information available.
STOT - repeated exposure No information available.
Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Manganese Chloride, Tetrahydrate	13446-34-9	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Class No information available
Packing group: No information available
Emergency Response Guide Number No information available
Marine Pollutant No data available
DOT RQ (lbs): No information available
Special Provisions No Information available
Symbol(s): No information available
Description: No information available

TDG (Canada)
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Marine Pollutant Description: No information available

ADR
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available

IMO / IMDG
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Marine Pollutant No information available

RID
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available

ICAO
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available

IATA
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
ERG Code: No information available
Special Provisions No information available

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Manganese Chloride, Tetrahydrate	13446-34-9	Not listed; Manganese Chloride tetrahydrate is exempt from	Not present	Present	Present (1)-235	Present	Present	Not present

		the TSCA 8(b) Inventory 8(b) listing since it is a hydrate. However, the anhydrous form (CAS no. 7773-01-5) is listed as ACTIVE on the TSCA 8(b) Inventory.						
--	--	---	--	--	--	--	--	--

U.S. Regulations

Manganese Chloride, Tetrahydrate

New Jersey RTK Hazardous Substance List: sn 2324 (manganese compounds)

New Jersey (EHS) List: SN 2324 500 lb. TPQ (manganese compounds)

New Jersey - Discharge Prevention - List of Hazardous Substances: Present (manganese compounds)

California Directors List of Hazardous Substances: Present (Listed under manganese compounds)

FDA - 21 CFR - Total Food Additives 184.1446 582.80

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Manganese Chloride, Tetrahydrate	13446-34-9	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
<i>Manganese Chloride, Tetrahydrate</i>	13446-34-9	None	None	None	Manganese compounds	1.0% de minimus concentration

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Manganese Chloride, Tetrahydrate	13446-34-9	Not Applicable	Not Applicable

Canada

WHMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information:

The WHMIS 2015 classification of this product has not been validated or reviewed yet.

Canada Hazardous Products Regulation This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

WHMIS 1988 Hazard Class

Product code: M1106

Product name: MANGANESE CHLORIDE, TETRAHYDRATE, USP

10 / 12

The classification of this product has not been validated yet

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Manganese Chloride, Tetrahydrate	13446-34-9	Not Listed	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Manganese Chloride, Tetrahydrate	13446-34-9	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Manganese Chloride, Tetrahydrate	13446-34-9	Not listed

EU Classification

EU GHS - SV - CLP 1272/2008

Components	CAS-No.	EU GHS - SV - CLP (1272/2008)
Manganese Chloride, Tetrahydrate	13446-34-9	No information

EU - CLP (1272/2008)

R-phrases(s)

R22 - Harmful if swallowed.

S -phrase(s)

S46 - If swallowed, seek medical advice immediately and show this container or label.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Manganese Chloride, Tetrahydrate	13446-34-9		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

Xn - Harmful.

16. OTHER INFORMATION

Preparation Date: 02/09/2015
Revision Date: 07/13/2018
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no

responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet