



**PhytoTechnology  
Laboratories®**

# SAFETY DATA SHEET

## 1. CHEMICAL IDENTIFICATION AND COMPANY INFORMATION

PRODUCT NAME: Manganese Chloride, Tetrahydrate, ACS Reagent  
 PRODUCT NUMBER: M455  
 COMPANY INFO: *PhytoTechnology Laboratories®*  
 PO Box 12205, Shawnee, KS 66282-2205  
 Phone: 1-888-749-8682 or 1-913-341-5343; Fax: 1-888-449-8682 or 1-913-341-5442  
 www.phytotechlab.com

EMERGENCY PHONE NUMBER: 1-800-535-5053 - US Only  
 1-352-323-3500 - International

RECOMMENDED USE: For Research Use Only

RESTRICTIONS ON USE: Products sold by *PhytoTechnology Laboratories®* are intended for research and laboratory use only. Products are not to be used as human or animal therapeutics, cosmetics, agricultural or pesticidal products, food additives, or as household chemicals.

## 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification:

- H302 – Acute toxicity, Oral (Category 4)
- H402 – Acute aquatic toxicity (Category 3)
- H412 – Chronic aquatic toxicity (Category 3)

GHS Label elements, including hazard and precautionary statements:



Signal Word: **Warning**

Hazard Statements:

- H302 – Harmful if swallowed.
- H412 – Harmful to aquatic life with long lasting effects.

Precautionary Statements:

- P273 – Avoid release to the environment.
- P280 – Wear protective gloves/protective clothing/eye protection/face protection.
- P301 + P312 + P330 – IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS No.: 13446-34-9  
 Formula:  $MnCl_2 \cdot 4H_2O$   
 Molecular Weight: 197.91  
 EC No.: 231-869-6

Ingredient	CAS Number	Percent	Hazardous
Manganese Chloride, Tetrahydrate	13446-34-9	>98 %	OSHA PEL: 5 mg (Mn)/m <sup>3</sup> ; ACGIH TLV: 0.2 mg (Mn)/m <sup>3</sup>

## 4. FIRST AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

<b>Route of Entry</b>	<b>Symptoms</b>	<b>First Aid Procedures</b>
Ingestion	May cause irritation if swallowed	If swallowed, wash out mouth with water. Never give anything by mouth to an unconscious person. <b>Get medical attention.</b>
Inhalation	May cause irritation to respiratory tract	Safely remove victim to fresh air. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure clear airway and give oxygen. <b>Get medical attention.</b>
Eye Contact	Direct contact may cause irritation. May cause redness, tearing, or blurred vision.	Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. <b>Get medical attention if irritation persists.</b>
Skin Contact	Irritating. May cause reddening, itching or inflammation.	Wash area thoroughly with soap and water. Remove and wash contaminated clothing. <b>Get medical attention if irritation persists.</b>

Most Important Symptoms or Effects, Both Acute and Delayed:

See section 2 and/or section 11

Recommendation for Immediate Medical Care and Special Treatment Needed:

No data available

## 5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:	Water spray, carbon dioxide, dry chemical powder, or appropriate foam. Use extinguishing media suitable for surrounding fire.
Special Protective Equipment and Precaution for Firefighters:	In the event of a fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus. Evacuate the area and fight fire from a safe distance.
Hazardous Combustion Products:	May emit toxic fumes under fire conditions.
Toxic Gases Produced:	Hydrogen chloride gas, manganese/manganese oxides

## 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Use personal protection recommended in Section 8. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation, especially in confined areas. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental Precautions:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Method of Containment and Cleanup:	Wear suitable protective clothing. Avoid dust formation. Carefully sweep up and remove. Place material in a dry container and cover. Remove from the area. Flush spill area with water. Do not let products enter drains.

## 7. HANDLING AND STORAGE

Precaution for Safe Handling:	Avoid contact with skin and eyes. Avoid dust formation and aerosols. Avoid incompatible substances. Wash thoroughly after use.
Conditions for Safe Storage:	Keep in a tightly closed container and store in a cool, dry, and well-ventilated area.
Incompatibilities:	Sodium/sodium oxides, Strong acids, Potassium, Zinc
Recommended Storage Temperature:	Room Temperature

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA's Permissible Exposure Limits (PELs): 5.0 mg/m<sup>3</sup>

ACGIH's Threshold Limit Values (TLVs): 0.20 mg/m<sup>3</sup>

Engineering Controls: Handle in accordance to general industrial hygiene and safety practice.

Personal Protective Equipment (PPE):

Eye/Face Protection: Chemical safety glasses or goggles. Have eye-washing facilities readily available where eye contact can occur.

Skin Protection: Protective gloves

Body Protection: Lab coat

Respiratory Protection: Appropriate respirator

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Pale pink powder

pH: No data available

Solubility: Soluble in Water

Melting Point: 58 °C (136 °F)

Vapor Density: No data available

Vapor Pressure: No data available

Odor: Odorless

Odor Threshold: No data available

Viscosity: No data available

Relative Density: 1.913 g/cm<sup>3</sup>

Evaporation Rate: No data available

Initial Boiling Point and Boiling Range: No data available

Flammability (solid, gas): No data available

Partition coefficient: No data available  
n-octanol/water):

Auto-ignition Temperature: No data available

Decomposition Temperature: No data available

Flash Point (Closed Cup): No data available

Flammable Limits: Upper (%) – No data available Lower (%) – No data available

## 10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical Stability: Stable under normal conditions of use – Material is slightly hygroscopic

Possibility of Hazard Reactions: Will not occur

Conditions to Avoid: Dust generation, moisture

Incompatibles Materials: Sodium/sodium oxides, Strong acids, Potassium, Zinc

Hazardous Decomposition Products: Hydrogen chloride gas, chlorine, manganese oxides

## 11. TOXICOLOGICAL INFORMATION

Toxicity: LD<sub>50</sub> (Oral-Rat)(mg/Kg): 1484

LD<sub>50</sub> (IP-Rat)(mg/Kg): 138

LD<sub>50</sub> (IP-Mouse)(mg/Kg): 144

Carcinogenicity: NTP: No

IARC: No

Z List: No

OSHA Reg: No

Germ cell mutagenicity: Laboratory experiments have shown mutagenic effects.

Reproductive Toxicity: No data available

Symptoms Associated with Overexposure: Irritation, itching, gastrointestinal upset, nausea, reproductive effects, breathing difficulties, central nervous system depression, liver impairment, metabolic changes, nerve damage, thyroid problems, muscle weakness

Specific Target Organ Toxicity: Single Exposure: No data available

Repeated Exposure: No data available

Target Organs: Central nervous system, blood, lungs, liver

Medical Conditions Aggravated By Exposure: None identified

Routes of Entry: Inhalation, ingestion, skin and eye contact

NIOSH/RTECS NO: OO9650000

***The toxicological properties of this product have not been thoroughly investigated***

## 12. ECOLOGICAL INFORMATION

Ecotoxicity: Toxicity to fish - LC50 - Carassius auratus (goldfish) - 18.8 mg/l - 7 d  
Toxicity to daphnia - EC50 - Daphnia magna (Water flea) - > 11 mg/l - 48 h

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available

Mobility in Soil: No data available

Other Adverse Effects: Harmful to aquatic life with long lasting effects.

## 13. DISPOSAL CONSIDERATION

Disposal Procedure: Dispose in accordance with all applicable federal, state, and local environmental regulations.

EPA Hazardous Waste Number: No data available

## 14. TRANSPORT INFORMATION

Domestic (D.O.T.): Proper Shipping Name: CHEMICALS, N.O.S. (NON-REGULATED)

Hazard Class: N/A

UN/NA: N/A

Labels: N/A

International:

IMDG: Proper Shipping Name: CHEMICALS, N.O.S. (NON-REGULATED)

Hazard Class: N/A

UN/NA: N/A

Labels: N/A

IATA: Proper Shipping Name: CHEMICALS, N.O.S. (NON-REGULATED)

Hazard Class: N/A

UN/NA: N/A

Labels: N/A

**15. REGULATORY INFORMATION**

TSCA: No

SARA TITLE III:

Section 302 (EHS) Ingredients: No

Section 313 Ingredients: Yes – Manganese compound of concentration >1.0 %

Section 304 (EHS/CERCLA) Ingredients: No

Section 311/312 Hazard: Acute Health Hazard, Chronic Health Hazard

Massachusetts Right to Know Components: No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know Components: CAS No.: 13446-34-9 Manganese dichloride tetrahydrate

New Jersey Right to Know Components: CAS No.: 13446-34-9 Manganese dichloride tetrahydrate

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**16. OTHER INFORMATION**

HMIS Rating:	<b>Health Hazard</b>	<b>Chronic Health Hazard</b>	<b>Flammability</b>	<b>Physical Hazard</b>
	1	*	0	0
NFPA Rating:	<b>Health Hazard</b>	<b>Fire Hazard</b>	<b>Reactivity Hazard</b>	<b>Special Hazard</b>
	1	0	0	

\*Chronic Hazard: Chronic (long-term) health effects may result from repeated overexposure.

***PhytoTechnology Laboratories®* provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. The above information is intended to be used only as a guide to the appropriate precautionary handling of this material by a properly trained person. *PhytoTechnology Laboratories®* shall not be held liable for any damage resulting from handling or from contact with the above product. This product is intended for LABORATORY USE ONLY. Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticidal products, food additives or as household chemicals.**

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