

## Safety Data Sheet

### Section 1: Identification

**Product Name:** Manganese Sulfate Monohydrate.

**Product Form:** Granular.

**Synonyms:** : Manganese Sulfate  
: Manganese Monosulfate  
: Manganese ( II ) Sulfate Monohydrate  
: Manganese (2+) Sulfate Monohydrate

**Product Use:** For fertilizer.

**CAS Number:** 10034-96-5

**Formula:** MnSO<sub>4</sub> . H<sub>2</sub>O

**Company Identification:**

Origination, LLC  
1802 Wooddale Drive, Suite 200  
Woodbury, MN 55125

**For information, call:** 1-800-625-6079

**Emergency Number:** 1-800-625-6079

**For CHEMTREC assistance, call:** 1-800-424-9300

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

### Section 2: Hazard(s) Identification

**GHS – US**

**STOT RE 2:** H373

**Aquatic Chronic 2:** H411

**NFPA (SCALE 0 – 4)**

Health	1
Fire	0
Reactivity	0



**Labeling according to GHS-US**

**Hazard pictograms (GHS-US):** GHS08 GHS09

**Signal word (GHS-US):** Warning

**Hazard statements (GHS-US):**

H373 – May cause damage to organs (central nervous system) through prolonged or repeated exposure (inhalation)

H411 - Toxic to aquatic life with long lasting effects.



**Precautionary statements (GHS-US) :**

- Do not breathe dust, fume.

# Manganese Sulfate Monohydrate



- Avoid release to the environment
- Avoid contact with eyes
- Avoid prolonged or repeated contact with skin
- Avoid ingestion
- Wear protective clothing, eye protection, protective gloves and dust mask.
- Dispose of contents / container accordingly to the current regulation

## Section 3: Composition / Information on Ingredients

**Substance type:** Mono-constituent

Name	Product Identifier	%	Probable Contaminants
Manganese Sulfate Monohydrate	(CAS No.) 10034-96-5	>=95	None

## Section 4: First Aid Measures

**First-aid measures general:** When in doubt or if symptoms are observed, get medical advice. Never give anything by mouth to an unconscious person.

**First-aid measures after inhalation:** If Inhaled: Remove to fresh air and keep at rest in a position comfortable for breathing. Medical examination necessary even merely on suspicion of intoxication.

**First-aid measures after skin contact:** After contact with skin, wash immediately with plenty of water and soap. Wash contaminated clothing before reuse.

**First-aid measures after eye contact:** In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

**First-aid measures after ingestion:** If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

### Most important symptoms and effects, both acute and delayed

**Symptoms / injures:** Conjunctival redness. Burns.

**Indication of any immediate medical attention and special treatment needed:** In case of doubt or persistent symptoms, consult always a physician.

## Section 5: Fire Fighting Measures

### Extinguishing Media

**Suitable extinguishing media:** Water fog or spray.

**Unsuitable extinguishing media:** High power water jet

### Special hazards arising from the substance or mixture

**Fire hazard:** Under fire conditions, hazardous fumes will be present.

**Explosion hazard:** Not explosive.

**Reactivity:** The product is stable at normal handling and storage conditions.

### Advice for Firefighters

**Precautionary measures fire:** Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.

**Protection during firefighting:** In case of fire: Wear self-contained breathing apparatus.

## Section 6: Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

**General measures:** See protective measures under point 7 and 8. Prevent unauthorized access.

#### For non-emergency personnel

**Emergency procedures:** Evacuate area.

**Protective equipment:** Use personal protective equipment as required.

#### For emergency responders

**Protective equipment:** Use personal protective equipment as required. Wear breathing apparatus if exposed to Vapours / dusts /aerosols.

**Emergency procedures:** Remove persons to safety.

**Environmental precautions:** Avoid release to the environment.

### Methods and material for containment and cleaning up

**For containment:** Collect spillage.

**Methods for cleaning up:** Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Clean contaminated objects and areas thoroughly observing Environmental regulations.

**Reference to other sections:** Treat the recovered material as prescribed in the section on waste disposal. See protective measures under point 7 and 8.

## Section 7: Handling and Storage

**Precautions for Safe Handling:** Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Avoid breathing dust.

**Hygiene measures:** Do not eat, drink or smoke when using this product.

### Conditions for Safe Storage, Including Any Incompatibilities

**Technical measures:** Keep container tightly closed and in a well-ventilated place.

**Storage conditions:** Store in original container.

**Specific end use(s):** No additional information available.

## Section 8: Exposure Controls, Personal Protection

Manganese sulfate monohydrate (10034-96-5)		
USA ACGIH	ACGIH TWA (mg / m <sup>3</sup> )	0,2 mg/m <sup>3</sup>
USA OSHA	Ceiling limit value (mg / m <sup>3</sup> )	5 mg/m <sup>3</sup>

# Manganese Sulfate Monohydrate



## Exposure Controls

**Appropriate engineering controls:** Technical measures and the application of suitable work processes have priority over personal protection equipment.

**Personal protective equipment:** Gloves. Safety glasses. Protective clothing. Dust formation: dust mask.

**Hand protection:** Wear suitable gloves.

**Eye protection:** Chemical goggles or face shield.

**Skin and body protection:** Wear suitable protective clothing and gloves.

**Respiratory protection:** If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

**Environmental exposure controls:** Do not allow uncontrolled discharge of product into the environment. Avoid release to the environment.

## Section 9: Physical and Chemical Properties

**Physical state:** Solid

**Molecular weight:** 169.01 g/mole

**Appearance:** Granular.

**Color:** White to cream.

**Odor:** Odorless.

**Odor threshold:** Not applicable

**pH:** 6,5 (450g/L) à 20°C

**Melting point:** 450 °C

**Freezing point:** No data available

**Boiling point:** No data available

**Flash point:** Not applicable

**Flammability (solid, gas):** Non-flammable.

**Explosive limits:** Not explosive.

**Vapor pressure:** No data available

**Relative vapor density at 20 °C:** No data available e

**Relative density:** 2,93 at 22 °C

**Solubility:** Water: 45 %

**Self-ignition temperature:** Non-flammable.

**Decomposition temperature:** 850 °C

**Viscosity, kinematic:** No data available

**Viscosity, dynamic:** No data available

**Explosive properties:** Not explosive.

**Oxidizing properties:** Not oxidizing.

**Evaporation rate:** No data available.

**Partition Coefficient n-octanol / water:** No data available.

**Others:** Hygroscopic

## Section 10: Stability and Reactivity

**Reactivity:** The product is stable at normal handling and storage conditions.

**Chemical stability:** Stable under normal conditions.

**Possibility of hazardous reactions:** Under fire conditions, hazardous fumes will be present.

**Conditions to avoid:** Extremely high temperatures.

**Incompatible materials:** Strong oxidizers.

**Hazardous decomposition products:** Under fire conditions, hazardous fumes will be present.

## Section 11: Toxicological Information

**Acute toxicity:** Not classified.

Manganese Sulfate Monohydrate (10034-96-5)	
LD50 oral rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 4,98 mg/l

**Skin corrosion/irritation:** Not classified.

**Serious eye damage/irritation:** Not Classified (Based on available data, the classification criteria are not met).

**Respiratory or skin sensitization:** Not classified.

**Germ cell mutagenicity:** Not classified.

**Carcinogenicity:** Not classified.

**Reproductive toxicity:** Not classified.

**Specific target organ toxicity (single exposure):** Not classified (Based on available data, the classification criteria are not met).

**Specific target organ toxicity (repeated exposure):** May cause damage to organs (central nervous system) through prolonged or repeated exposure (inhalation).

**Aspiration hazard:** Not classified (Based on available data, the classification criteria are not met).

## Section 12: Ecological Information

**Toxicity:** No additional information available.

**Persistence and Degradability:**

Manganese Sulfate Monohydrate (10034-96-5)	
LC50 fishes 1	14,5 mg/l
Ecology - water	Toxic to aquatic life with long lasting effects

**Persistence and degradability:** No additional information available.

**Bioaccumulative potential:** Not established

**Mobility in soil:** No additional information available.

**Results of PBT and vPvB assessment:** No additional information available.

# Manganese Sulfate Monohydrate

**Other information:** No additional information available.

## Section 13: Disposal Considerations (non-mandatory)

**Waste disposal recommendations:** Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/containers to comply with local and federal regulations.

**Ecology - waste materials:** Avoid release to the environment.

## Section 14: Transport Information

In accordance with IMDG / ICAO / IATA / DOT

**UN:** 3077

**UN proper shipping name**

**Proper Shipping Name:** Environmentally hazardous substance, Solid, N.O.S..

**Transport document description:** UN 3077 Environmentally Hazardous Substance, Solid, N.O.S., 9, III, (E)

**Transport hazard class**

**Class (UN):** 9.

**Packing Group**

**Packing group (UN):** III.

**Marine pollutant:**



**Other information:** No supplementary information available

**Special Precautions for user**

**Overland transport:** No regulated for transport

**Transport by sea:** No additional information available

**Air transport:** No additional information available

**Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC Code:** Not applicable

## Section 15: Regulatory Information

**Safety, health and environmental regulations / legislation specific for the substance or mixture**

**US Federal Regulations:**

No listed on the United States TSCA (Toxic Substances Control Act)

No listed on SARA 304 (Emergency release notification)

No listed on SARA 311,312 (Acute hazard, Chronic hazard, Fire hazard, Reactivity hazard)

Listed on SARA 313 (Specific toxic chemical listings)

**International regulations**

**Canada:** No listed on the Canadian DSL (Domestic substances List)

WHMIS Classification: Class D Division 2 Subdivision B – Toxic material causing other toxic effects

**Chemical safety assessment:** No chemical safety assessment has been carried out.

## Section 16: Additional Information

**Prepared by:** Origination, LLC

**Prepared:** February 18, 2021

**Disclaimer:**

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