

## Safety Data Sheet

### SECTION 1: Identification

#### 1.1. Product Identifier

**Trade Name or Designation:** Manganous Sulfate, 0.31% (w/v)

**Product Number:** 4610

**Other Identifying Product Numbers:** 4610-16, 4610-32

#### 1.2. Recommended Use and Restrictions on Use

General Laboratory Reagent

#### 1.3. Details of the Supplier of the Safety Data Sheet

**Company:** Ricca Chemical Company

**Address:** 448 West Fork Drive  
Arlington, TX 76012 USA

**Telephone:** 888-467-4222

#### 1.4. Emergency Telephone Number (24 hr)

CHEMTREC (USA) 800-424-9300  
CHEMTREC (International) 1+ 703-527-3887

### SECTION 2: Hazard(s) Identification

#### 2.1. Classification of the Substance or Mixture (in accordance with OSHA HCS 29 CFR 1910.1200)

*For the full text of the Hazard and Precautionary Statements listed below, see Section 16.*

| Hazard Class                                 | Category   | Hazard Statement | Precautionary Statements                |
|--|------------|------------------|---|
| Carcinogenicity                              | Category 1 | H350             | P201, P202, P280, P308+P313, P405, P501 |
| Reproductive Toxicity                        | Category 2 | H361             | P201, P202, P280, P308+P313, P405, P501 |
| Hazardous to the Aquatic Environment (Acute) | Category 3 | H402             | P273, P501                              |

#### 2.2. GHS Label Elements

**Pictograms:**



**Signal Word:** **Danger**

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## Hazard Statements:

| Hazard Number | Hazard Statement                                     |
|---------------|--|
| H350          | May cause cancer.                                    |
| H361          | Suspected of damaging fertility or the unborn child. |
| H402          | Harmful to aquatic life.                             |

## Precautionary Statements:

| Precautionary Number | Precautionary Statement   |
|----------------------|---|
| P201                 | Obtain special instructions before use.   |
| P202                 | Do not handle until all safety precautions have been read and understood.                   |
| P273                 | Avoid release to the environment.   |
| P280                 | Wear protective gloves and eye protection.  |
| P308+P313            | IF exposed or concerned: Get medical attention.   |
| P405                 | Store locked up.  |
| P501                 | Dispose of contents in accordance with local, state, federal and international regulations. |

## 2.3. WHMIS Classification

WHMIS classification is not included based on the recommended option (Option 4) found in the Canada Gazette Part II, Vol. 149, No.3, page 458

## 2.4. Hazards not Otherwise Classified or Covered by GHS

Data not available.

## SECTION 3: Composition / Information on Ingredients

### 3.1. Components of Substance or Mixture

| Chemical Name                 | Formula                             | Molecular Weight | CAS Number | Weight% |
|-------------------------------|-------------------------------------|------------------|------------|---------|
| Water                         | H <sub>2</sub> O                    | 18.01 g/mol      | 7732-18-5  | 99.15%  |
| Sulfuric Acid                 | H <sub>2</sub> SO <sub>4</sub>      | 98.07 g/mol      | 7664-93-9  | 0.54%   |
| Manganous Sulfate Monohydrate | MnSO <sub>4</sub> ·H <sub>2</sub> O | 169.02 g/mol     | 10034-96-5 | 0.31%   |

## SECTION 4: First-Aid Measures

### 4.1. General First Aid Information

**Eye Contact:** May cause irritation, redness, pain, and tearing.

**Inhalation:** Not expected to require first aid. If necessary, remove to fresh air.

**Skin Contact:** May cause slight irritation.



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**Ingestion:** Dilute with water or milk. Call a physician if necessary.

### 4.2. Most Important Symptoms and Effects, Acute and Delayed

Non-flammable, non-toxic, non-corrosive. Does not present any significant health hazards. Wash areas of contact with water. EYE CONTACT: May cause irritation, redness, pain, and tearing. SKIN CONTACT: May cause slight irritation.

### 4.3. Medical Attention or Special Treatment Needed

Not expected to require special treatment.

## SECTION 5: Fire-Fighting Measures

### 5.1. Extinguishing Media

Use any means suitable for extinguishing surrounding fire.

### 5.2. Specific Hazards Arising from the Substance or Mixture

Not considered to be a fire or explosion hazard.

### 5.3. Special Protective Equipment for Firefighters

Use protective clothing and breathing equipment appropriate for the surrounding fire.

## SECTION 6: Accidental Release Measures

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Wear protective gloves and eye protection.

### 6.2. Cleanup and Containment Methods and Materials

Absorb with suitable material and dispose of in accordance with local regulations.

## SECTION 7: Handling and Storage

### 7.1. Precautions for Safe Handling and Storage Conditions

Store locked up. As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage.

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### SECTION 8: Exposure Controls / Personal Protection

#### 8.1. Control Parameters

| Chemical Name                                 | Limit Type  | Country | Exposure Limit   | Information Source  |
|---|-------------|---------|--|---|
| Manganous Sulfate Monohydrate<br>(10034-96-5) | TLV-TWA     | USA     | 0.02 mg/m <sup>3</sup> TWA (respirable fraction, as Mn)<br>0.1 mg/m <sup>3</sup> TWA (inhalable fraction, as Mn) | ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA) |
| Manganous Sulfate Monohydrate<br>(10034-96-5) | PEL-Ceiling | USA     | 5 mg/m <sup>3</sup> Ceiling (as Mn)  | U.S. - OSHA - Final PELs - Ceiling Limits                         |
| Sulfuric Acid (7664-93-9)                     | TWA         | USA     | 1 mg/m <sup>3</sup> TWA  | U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)          |
| Sulfuric Acid (7664-93-9)                     | TLV-TWA     | USA     | 0.2 mg/m <sup>3</sup> TWA (thoracic fraction)  | ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA) |

#### 8.2. Exposure Controls

**Engineering Controls:** No specific controls are needed. Normal room ventilation is adequate.

**Respiratory Protection:** Normal room ventilation is adequate.

**Skin Protection:** Wear protective gloves and eye protection. Chemical resistant gloves.

**Eye Protection:** Wear protective gloves and eye protection. Safety glasses or goggles.

#### 8.3. Personal Protective Equipment

Wear protective gloves and eye protection. Normal room ventilation is adequate. Chemical resistant gloves. Safety glasses or goggles.



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### SECTION 9: Physical and Chemical Properties

#### 9.1. Basic Physical and Chemical Properties

**Appearance:** Colorless liquid

**Physical State:** Liquid

**Odor:** Data not available.

**Odor Threshold:** Data not available.

**pH:** Data not available.

**Melting/Freezing Point:** 0.0°C

**Initial Boiling Point /Range:** 100°C - 100°C

**Flash Point:** Data not available.

**Evaporation Rate:** Data not available.

**Flammability:** Data not available.

**Flammability/Explosive Limits:** Data not available.

**Vapor Pressure:** Data not available.

**Vapor Density:** Data not available.

**Relative Density:** 1.00

**Solubility:** Miscible

**Partition Coefficient (n-Octanol/Water):** Data not available.

**Auto-Ignition Temperature:** Data not available.

**Decomposition Temperature:** Data not available.

**Viscosity:** Data not available.

**Explosive Properties:** Data not available.

**Oxidizing Properties:** Data not available.

### SECTION 10: Stability and Reactivity

#### 10.1. Reactivity and Chemical Stability

Stable under normal conditions of use and storage.

#### 10.2. Possibility of Hazardous Reactions

Data not available.

#### 10.3. Conditions to Avoid and Incompatible Materials

Powdered metals, strong oxidizers.

#### 10.4. Hazardous Decomposition Products

Will not occur.



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### SECTION 11: Toxicological Information

#### 11.1. Information on Toxicological Effects

**Acute Toxicity - Oral Exposure:**

Not applicable.

**Acute Toxicity - Dermal Exposure:**

Not applicable.

**Acute Toxicity - Inhalation Exposure:**

Not applicable.

**Acute Toxicity - Other Information:**

LD50, Oral, Rat: 2140 mg/kg (Sulfuric Acid), details of toxic effects not reported other than lethal dose value; 2150 mg/kg (Manganous Sulfate), behavioral effects noted.

**Skin Corrosion and Irritation:**

Not applicable.

**Serious Eye Damage and Irritation:**

Not applicable.

**Respiratory Sensitization:**

Not applicable.

**Skin Sensitization:**

Not applicable.

**Germ Cell Mutagenicity:**

Not applicable.

**Carcinogenicity:**

May cause cancer. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. IF exposed or concerned: Get medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

**Reproductive Toxicity:**

Suspected of damaging fertility or the unborn child. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. IF exposed or concerned: Get medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

**Specific Target Organ Toxicity from Single Exposure:**

Not applicable.

**Specific Target Organ Toxicity from Repeated Exposure:**

Not applicable.

**Aspiration Hazard:**

Not applicable.

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### Additional Toxicology Information:

Data not available.

## SECTION 12: Ecological Information

### 12.1. Ecotoxicity

Harmful to aquatic life. Avoid release to the environment. Dispose of contents in accordance with local, state, federal and international regulations.

### 12.2. Persistence and Degradability

Data not available.

### 12.3. Bioaccumulative Potential

Data not available.

### 12.4. Mobility in Soil

Data not available.

### 12.5. Other Adverse Ecological Effects

Data not available.

## SECTION 13: Disposal Considerations

### 13.1. Waste Treatment Methods

Data not available.

## SECTION 14: Transportation Information

### 14.1. Transportation by Land - Department of Transportation (DOT, United States of America)

Not regulated according to DOT Regulations.

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Not regulated according to IATA Regulations.

### SECTION 15: Regulatory Information

#### 15.1. Occupational Safety and Health Administration (OSHA) Hazards

Not listed.

#### 15.2. Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

Sulfuric Acid (CAS # 7664-93-9): 1000 lb EPCRA RQ

Sulfuric Acid (CAS # 7664-93-9): 1000 lb TPQ

#### 15.3. Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

Sulfuric Acid (CAS # 7664-93-9): 1000 lb final RQ; 454 kg final RQ

#### 15.4. Superfund Amendments and Reauthorization Act (SARA) 313 Toxic Release Inventory (TRI)

Manganous Sulfate Monohydrate (CAS # 10034-96-5): 1.0 % de minimis concentration (listed under Chemical Category N450)

Sulfuric Acid (CAS # 7664-93-9): 1.0 % de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)

#### 15.5. Massachusetts Right-to-Know Substance List

Sulfuric Acid (CAS # 7664-93-9): Extraordinarily hazardous

#### 15.6. Pennsylvania Right-to-Know Hazardous Substances

Manganous Sulfate Monohydrate (CAS # 10034-96-5): Environmental hazard

Manganous Sulfate Monohydrate (CAS # 10034-96-5): Present

Sulfuric Acid (CAS # 7664-93-9): Environmental hazard

Sulfuric Acid (CAS # 7664-93-9): Present

Water (CAS # 7732-18-5): Present



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### 15.7. New Jersey Worker and Community Right-to-Know Components

Manganous Sulfate Monohydrate (CAS # 10034-96-5): sn 2324

Manganous Sulfate Monohydrate (CAS # 10034-96-5): SN 2324 500 lb TPQ (Category Code N450. Includes any unique chemical substance that contains the named metal as part of that chemical structure)

Sulfuric Acid (CAS # 7664-93-9): carcinogen; corrosive; reactive - second degree

Sulfuric Acid (CAS # 7664-93-9): sn 1761

Sulfuric Acid (CAS # 7664-93-9): SN 1761 500 lb TPQ

### 15.8. California Proposition 65

Sulfuric Acid (CAS # 7664-93-9): carcinogen, 3/14/2003

### 15.9. Canada Domestic Substances List / Non-Domestic Substances List (DSL/NDSL)

Manganous Sulfate Monohydrate (CAS # 10034-96-5): Present (DSL)

Sulfuric Acid (CAS # 7664-93-9): Present (DSL)

Water (CAS # 7732-18-5): Present (DSL)

### 15.10. United States of America Toxic Substances Control Act (TSCA) List

Manganous Sulfate Monohydrate (CAS # 10034-96-5): Present

Sulfuric Acid (CAS # 7664-93-9): Present

Water (CAS # 7732-18-5): Present

### 15.11. European Inventory of Existing Commercial Chemical Substances (EINECS), European List of Notified Chemical Substances (ELINCS), and No Longer Polymers (NLP)

Not listed.

## SECTION 16: Other Information

### 16.1. Full Text of Hazard Statements and Precautionary Statements

May cause cancer. Suspected of damaging fertility or the unborn child. Harmful to aquatic life.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid release to the environment. Wear protective gloves and eye protection.

IF exposed or concerned: Get medical attention.

Store locked up.

Dispose of contents in accordance with local, state, federal and international regulations.

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### 16.2. Miscellaneous Hazard Classes

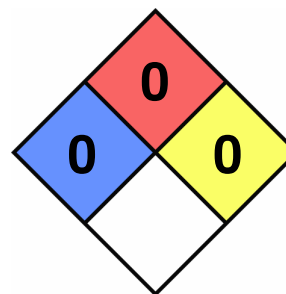
**Canadian Carcinogenicity Hazard Class:** Not Applicable.

**Physical Hazards Not Otherwise Classified (PHNOC):** Not Applicable.

**Health Hazards Not Otherwise Classified (HHNOC):** Not Applicable.  
Not Applicable.

### 16.3. National Fire Protection Association (NFPA) Rating

**Health:** 0  
**Flammability:** 0  
**Reactivity:** 0  
**Special Hazard:**



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### 16.4. Document Revision

Last Revision Date: 5/1/2015

### DISCLAIMER

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and RICCA CHEMICAL COMPANY assumes no legal responsibility or liability whatsoever resulting from its use.