SECTION 1: Identification

1.1. Identification

Product form: Substance
Substance name: Manganous Sulfate, Monohydrate, ACS
Chemical name: Manganese (II) Sulfate Monohydrate
CAS-No.: 10034-96-5
Product code: LC16555
Formula: MnSO4·H2O

1.2. Recommended use and restrictions on use

Use of the substance/mixture: For laboratory and manufacturing use only.
Recommended use: Laboratory chemicals
Restrictions on use: Not for food, drug or household use

1.3. Supplier

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification
Specific target organ toxicity (repeated exposure) Category 2 H373 May cause damage to organs (central nervous system) through prolonged or repeated exposure (Inhalation)
Hazardous to the aquatic environment - Chronic Hazard Category 2 H411 Toxic to aquatic life with long lasting effects

Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling
Hazard pictograms (GHS-US):

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):
P260 - Do not breathe dust
P273 - Avoid release to the environment
P314 - Get medical advice and attention if you feel unwell
P391 - Collect spillage
P501 - Dispose of contents/container to comply with local, state and federal regulations

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification: None under normal conditions.

2.4. Unknown acute toxicity (GHS US)

Not applicable.
SECTION 3: Composition/Information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manganous Sulfate, Monohydrate, ACS (Main constituent)</td>
<td>(CAS-No.) 10034-96-5</td>
<td>100</td>
<td>STOT RE 2, H373 Aquatic Chronic 2, H411</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation: Allow victim to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after ingestion: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects: Causes damage to organs (central nervous system) (Inhalation).


4.3. Immediate medical attention and special treatment, if necessary

Obtain medical assistance.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media


Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

No additional information available

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel


Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment: Equip cleanup crew with proper protection.

Emergency procedures: Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.
SECTION 7: Handling and storage

7.1. Precautions for safe handling
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 vapor. Avoid breathing dust.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Keep container closed when not in use.
Incompatible materials: Sources of ignition. Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Manganese Sulfate, Monohydrate, ACS (10034-96-5)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH TWA (mg/m³)</td>
<td>0.2 mg/m³</td>
</tr>
<tr>
<td>OSHA PEL (Ceiling) (mg/m³)</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td>US IDLH (mg/m³)</td>
<td>500 mg/m³ As Mn</td>
</tr>
<tr>
<td>NIOSH REL (TWA) (mg/m³)</td>
<td>1 mg/m³</td>
</tr>
<tr>
<td>NIOSH REL (STEL) (mg/m³)</td>
<td>3 mg/m³</td>
</tr>
</tbody>
</table>

8.2. Appropriate engineering controls
Appropriate engineering controls: Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.

8.3. Individual protection measures/Personal protective equipment
Personal protective equipment:

Hand protection:
Wear protective gloves

Eye protection:
Chemical goggles or safety glasses

Respiratory protection:
Gas mask

Other information:
Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Physical state: Solid
Color: pink
Odor: None.
Odor threshold: No data available
pH: No data available
pH solution: 5 (3 - 3.5) %
Melting point: 700 °C
Freezing point: No data available
Manganous Sulfate, Monohydrate, ACS
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Boiling point : 850 °C
Flash point : No data available
Relative evaporation rate (butyl acetate=1) : No data available
Flammability (solid, gas) : Non flammable.
Vapor pressure : No data available
Relative vapor density at 20 °C : No data available
Relative density : 3.25
Molecular mass : 169.02 g/mol
Solubility : No data available
Log Pow : No data available
Auto-ignition temperature : No data available
Decomposition temperature : 850 °C
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosion limits : No data available
Explosive properties : No data available
Oxidizing properties : No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Hygroscopic.

10.3. Possibility of hazardous reactions
Not established.

10.4. Conditions to avoid
Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Sulfur compounds.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Likely routes of exposure : Inhalation; Skin and eye contact
Acute toxicity : Not classified

Manganous Sulfate, Monohydrate, ACS (10034-96-5)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>2150 mg/kg</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>2150 mg/kg body weight</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity – single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity – repeated exposure</td>
<td>May cause damage to organs (central nervous system) through prolonged or repeated exposure (Inhalation).</td>
</tr>
</tbody>
</table>
### Aspiration hazard
Not classified

### Potential Adverse human health effects and symptoms
Based on available data, the classification criteria are not met.

### Symptoms/effects after ingestion

### SECTION 12: Ecological information

#### 12.1. Toxicity
Ecology - water
Toxic to aquatic life with long lasting effects.

#### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Manganous Sulfate, Monohydrate, ACS (10034-96-5)</th>
<th>Persistence and degradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>May cause long-term adverse effects in the environment.</td>
<td></td>
</tr>
</tbody>
</table>

#### 12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Manganous Sulfate, Monohydrate, ACS (10034-96-5)</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not established.</td>
<td></td>
</tr>
</tbody>
</table>

#### 12.4. Mobility in soil
No additional information available

#### 12.5. Other adverse effects
Other information
Avoid release to the environment.

### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

<table>
<thead>
<tr>
<th>Waste disposal recommendations</th>
<th>Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology - waste materials</td>
<td>Avoid release to the environment.</td>
</tr>
</tbody>
</table>

### SECTION 14: Transport information

**Department of Transportation (DOT)**
In accordance with DOT
Not regulated

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Manganous Sulfate, Monohydrate, ACS (10034-96-5)</th>
<th>Not listed on the United States TSCA (Toxic Substances Control Act) inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA Section 311/312 Hazard Classes</td>
<td>Delayed (chronic) health hazard</td>
</tr>
</tbody>
</table>

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

| Manganous Sulfate, Monohydrate, ACS | CAS-No. 10034-96-5 | 100% |

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

| Manganous Sulfate, Monohydrate, ACS | CAS-No. 10034-96-5 | 100% |

#### 15.2. International regulations

**CANADA**

| Manganous Sulfate, Monohydrate, ACS (10034-96-5) | Not listed on the Canadian DSL (Domestic Substances List) |

EU-Regulations
No additional information available
Manganous Sulfate, Monohydrate, ACS
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

National regulations

<table>
<thead>
<tr>
<th>Manganous Sulfate, Monohydrate, ACS (10034-96-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the Canadian IDL (Ingredient Disclosure List)</td>
</tr>
</tbody>
</table>

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Revision date : 11/08/2017
Other information : None.

Full text of H-phrases: see section 16:

<table>
<thead>
<tr>
<th>H373</th>
<th>May cause damage to organs through prolonged or repeated exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.

Hazard Rating
Health : 1 Slight Hazard - Irritation or minor reversible injury possible
Flammability : 0 Minimal Hazard - Materials that will not burn
Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection : E - Safety glasses, Gloves, Dust respirator

SDS US LabChem

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