

## Safety Data Sheet (MSDS)

# MANGANESE SULFATE MONOHYDRATE

<b>1. Identification of the Substance</b>	<b>PRODUCT NAME:</b> Manganese Sulfate Monohydrate <b>DISTRIBUTOR:</b> EcoFusion Inc., PO Box 251408. Plano, TX 75025 – 1408 (USA) <b>TEL:</b> +1 972 403 7449 <b>FAX:</b> +1 214 291 5348 <b>EMERGENCY:</b> CHEMTREC 800 424 9300
<b>2. Hazards Identification</b>	<b>WARNING!</b> Harmful if swallowed. May cause gastrointestinal irritation with nausea. May cause respiratory tract irritation.
<b>3. Composition / Information on Ingredients</b>	<b>CHEMICAL FORMULA:</b> MnSo4 <b>MOLECULAR WEIGHT:</b> 169.01 <b>EINECS No:</b> 232-089-9 <b>CAS NUMBER:</b> 10034-96-5 (Monohydrate) <b>R-PHRASES:</b> R36/38- Irritating to eyes and skin
<b>4. First Aid Measures</b>	<b>PHYSICAL / CHEMICAL HAZARDS:</b> Harmful if swallowed, causes irritation; avoid contact with eyes and skin. <b>ENVIRONMENTAL HAZARD:</b> R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. <b>SKIN:</b> may cause irritation. <b>EYES:</b> Excessive dust exposure may cause eye irritation. <b>INGESTION:</b> Health hazard if ingested. Can cause Abdominal Pain, Diarrhea, Cramps, and damage to gastrointestinal tract. <b>INHALATION</b> Causes irritation to the respiratory tract.
<b>5. Fire Fighting Measures</b>	<b>EXTINGUISHING MEDIA:</b> In case of fire in immediate vicinity use any extinguishing agent appropriate for surrounding area. <b>HAZARDS:</b> Fire: Non-Combustible. Flammability: Non Flammable Flash point: Not combustible Hazardous combustion and May emit Sox fumes. <b>PROTECTION:</b> Use breathing apparatus (self-contained breathing apparatus with full face shield). Wear suitable protective clothing.
<b>6. Accidental Release Measures</b>	<b>PERSONAL PRECAUTIONS:</b> Wear suitable gloves and eye/face protection. Avoid dust creation. <b>ENVIRONMENTAL PRECAUTIONS:</b> Do not let product enter drains, sewage system, and ground water. <b>METHODS FOR CLEANING UP:</b> Sweep up and shovel into suitable containers for disposal. Re-use or recycle waste.
<b>7. Handling and Storage</b>	Store in a cool dry place - keep containers shut. Avoid making dust. All materials suitable. Dry Storage with tightly closed lids.
<b>8. Exposure Controls / Personal protection</b>	<b>ENGINEERING CONTROLS:</b> Mechanical ventilation is recommended. <b>EXPOSURE LIMITS:</b> 8 Hour TLV-TWA [mg/m3]: 10 (Dust) 5 (fume) <b>PERSONAL PROTECTIVE EQUIPMENT :</b> <b>EYE:</b> Use chemical safety goggles or safety glasses. <b>SKIN:</b> Wear protective gloves to prevent skin exposure.

	<p><b>CLOTHING:</b> Wear protective clothing to prevent skin exposure.  <b>RESPIRATORY PROTECTION:</b> Not absolutely necessary</p>
<b>9. Physical and Chemical properties</b>	<p><b>PHYSICAL STATE:</b> White or slightly Pink Powder or Granule  <b>ODOUR:</b> Odorless  <b>MOLAR MASS:</b> 169.02 g/mol (monohydrate)  <b>BOILING POINT:</b> &gt; 300C (&gt; 572F) Decomposes.  <b>SOLUBILITY:</b> Soluble in water.  <b>SPECIFIC GRAVITY/DENSITY:</b> 3.70 g/cm<sup>3</sup> at 20°C</p>
<b>10. Stability and Reactivity</b>	<p><b>STABILITY:</b> Stable under ordinary conditions of use and storage  <b>CONDITIONS TO AVOID:</b> Avoid Heating! Decomposition can emit Sox fumes.</p>
<b>11. Toxicological Information</b>	<p><b>HAZARD STATEMENT:</b> H411: toxic to aquatic life with long lasting effects.                  Precautionary Statement Prevention: P273                  Precautionary Statement Response: P391                  Precautionary Statement Disposal: P501</p>
<b>12. Ecological Information</b>	<p><b>ECO TOXICITY:</b> Water soluble, toxic to aquatic life.  <b>FISH TOXICITY:</b> LC50/96hr/cichlid 13 ppm.  <b>MAMMALIAN TOXICITY:</b> LD50/oral/mouse 57 mg/kg                  LD50/oral/rat 2900 mg/kg.</p>
<b>13. Disposal Considerations</b>	<p><b>METHODS OF DISPOSAL:</b> Dispose of according to all applicable governments' regulation.  <b>CONTAMINATED PACKAGING:</b> Keep waste packaging separate. Because of possible pollution, remove as industrial waste or hazardous waste.</p>
<b>14. Transport Information</b>	<p>H.S. Code: 2833.00                  UN - No: 3077                  ADR/RID/ADNR/IMO-IMDG: Class 9                  H.I. No.: 90 / Shipping Name: 3077                  Environmentally Hazardous Substance, Solid, O.S., 9, III, ADR                  Packaging Group: III / IMDG-Marine Pollution YES                  EMS No. F-A, S-F MFAG Table</p>
<b>15. Regulatory Information</b>	<p><b>R PHRASE(s):</b> R36/38 – Irritating to eyes and skin.  <b>R51/53</b> - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  <b>S PHRASE(s):</b> S2 - Keep out of reach of children.  <b>S22-</b> Do not breath dust.</p>
<b>16. Other Information</b>	<p>Date prepared: 01/19/2018                  Revision Date: NA</p>

*THE INFORMATION IN THIS MSDS RELATES TO THIS SPECIFIC MATERIAL. IT MAY NOT BE VALID FOR THIS MATERIAL IF USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. IT IS THE USERS' RESPONSIBILITY TO SATISFY THEMSELVES AS TO THE SUITABILITY AND COMPLETENESS OF THIS INFORMATION FOR THEIR OWN PARTICULAR USE.*

All non-emergency questions should be Directed to Customer Service at

**24 hour emergency Telephone: Chemtrec 800-424-9300**  
**National response in Canada: Canutec 613-996-6666**  
**Outside US & Canada: Chemtrec: 202-483-7616**

Note: Chemtrec and Canutec emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, exposure or accident involving chemicals.