

## MATERIAL SAFETY DATA SHEET (MSDS) MANGANESE SULFATE

### SECTION 1 - PRODUCER & SUPPLIERS DETAILS

**Manufacturer & Supplier:** NUMINOR CHEMICAL INDUSTRIES LTD.  
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ISRAEL.  
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### SECTION 2 - CHEMICAL NAME & INFORMATION ON INGREDIENTS

**Chemical Name:** Manganese Sulfate (CAS : 7785-87-7) (EINECS: 232-089-9)

**Symbol:**



Xi Irritant



N Dangerous for the Environment

**R-Phrases:** R36/38- Irritating to eyes and skin.  
R51/53- Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

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

**Synonyms:** Dried Manganese Sulphate, Manganous Sulphate

**% Range:** 98 - 100%

Trace materials normally not exceeding 0.5%

There are no physically added chemical substances. The impurities are inherent to the raw materials used in the production of Manganese Sulfate.

### SECTION 3 - PHYSICAL & CHEMICAL CHARACTERISTICS

**Melting Point:** Above 730°C  
**Specific Gravity:** 3.70 g/cm<sup>3</sup> at 20°C  
**Solubility in water:** Soluble in water.  
**Formula Wt.** 179.40  
**Appearance & Odour:** White to pinkish crystalline powder, odourless

## SECTION 4 - HAZARDS IDENTIFICATION

<b>Physical / chemical hazards :</b>	Harmfull 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>Adverse human health effects</b>	
- <b>Inhalation :</b>	Causes irritation to the respiratory tract.
- <b>Skin contact :</b>	Skin contact may cause irritation.
- <b>Eye contact :</b>	Excessive dust exposure may cause eye irritation.
- <b>Ingestion :</b>	Health hazard if ingested and can cause abdominal pain, nausea, diarrhea, cramps, and damage to gastrointestinal tract.

## SECTION 5 - FIRE, FIGHTING & EXPLOSION DATA

<b>Fire:</b>	Non Combustible.
<b>Flammability:</b>	Non Flammable
<b>Flash point:</b>	Not combustible
<b>Extinguishing media:</b>	In case of fire in immediate vicinity use any extinguishing agent appropriate for surrounding area.
<b>Protection of fire-fighters:</b>	Use breathing apparatus (self-contained breathing apparatus with full face shield). Wear suitable protective clothing.
<b>Hazardous combustion and decomposition by-products:</b>	May emit $SO_x$ fumes.

## SECTION 6 - STABILITY & REACTIVITY DATA

<b>Stability:</b>	Stable under ordinary conditions.
<b>Hazardous Reactions:</b>	Avoid Heating! Decomposition can emit $SO_x$ fumes.

## SECTION 7 - Toxicological Information

<b>Acute toxicity</b>	
- <b>Inhalation:</b>	n/a
- <b>Dermal:</b>	Moderate irritation to rabbits, mice and guinea pigs with 1% solution applied for 5 days.
- <b>Ingestion:</b>	50 mg/3 times per day caused gastrointestinal problems.
<b>Eyes irritation (rabbit):</b>	420 ug - moderate irritation.
<b>Chronic toxicity:</b>	n/a

**(Section 7 continued-Toxilogical Information)**

<b>Sensitization:</b>	Contact with skin causes irritation.
<b>Carcinogenicity:</b>	NTP: No IARC: No Z List: No OHA Reg: No
<b>Mutagenicity:</b>	In vitro and in vivo test of short-term genotoxicity : no evidence of genotoxicity.
<b>Reproductive toxicity:</b>	No experimental or epidemiological evidence of reproduction toxicity. Teratogenicity

**SECTION 8 - FIRST AID MEASURES**

<b>Effects and symptoms:</b>	No specific effects and/or symptoms have been reported or known.
<b>First aid</b>	
- <b>Skin contact:</b>	Rinse immediately with plenty of water
- <b>Inhalation:</b>	Remove victim to fresh air. If feeling unwell, immediately seek medical attention.
- <b>Eye contact:</b>	Rinse immediately with clean water for 15 minutes. If feeling unwell, immediately seek medical attention.
- <b>Ingestion:</b>	Immediately rinse mouth with water. Do not induce vomiting. Give water to drink. If feeling unwell, immediately seek medical attention.
<b>Protection of rescue personnel:</b>	Avoid all unnecessary exposure. Use appropriate protection (see Section 9).

**SECTION 9 - PERSONAL PROTECTION & EXPOSURE CONTROLS**

- <b>Respiratory protection:</b>	Respiratory protection equipment not absolutely necessary.
- <b>Hand protection:</b>	Gloves. Material: leather gloves, cotton gloves, rubber gloves.
- <b>Skin protection:</b>	Work clothes.
- <b>Eye protection:</b>	Chemical goggles or safety glasses.
<b>Occupational Exposure Limits</b>	
<b>8 Hour TLV-TWA [mg/m3] :</b>	10 (Dust) 5 (fume)
<b>Engineering measures:</b>	Mechanical ventilation is recommended.
<b>Belgium 2002:</b>	
<b>15 minutes TLV-STEL [mg/m3/]:</b>	10 (fume)

## SECTION 10 - ACCIDENTAL RELEASE MEASURES & SPILL LEAK PROCEDURES

<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, ground water.
<b>Methods for cleaning up:</b>	Sweep up and shovel into suitable containers for disposal. Re-use or recycle waste.

## SECTION 11 - HANDLING AND STORAGE

<b>Handling &amp; storing:</b>	Good housekeeping - store in a cool dry place - keep containers shut. Avoid making dust.
<b>Packing Materials:</b>	All materials suitable. Dry Storage with tightly closed lids.

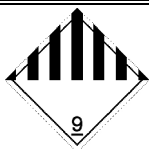

## SECTION 12 - ECOLOGICAL INFORMATION

<b>Ecotoxicity:</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.

## SECTION 13 - DISPOSAL CONSIDERATIONS

<b>Disposal:</b>	Comply with local regulations for disposal.
<b>Waste of residues:</b>	S60 - This material and its container must be disposed of as hazardous waste. Because of possible pollution, remove as industrial waste or hazardous waste. S61- Avoid release to the environment. Refer to special instructions/safety data sheets.
<b>Contaminated packaging:</b>	Keep waste packaging separate. Because of possible pollution, remove as industrial waste or hazardous waste.

**SECTION 14 - TRANSPORT INFORMATION**

Hazard Labels:	 
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, N.O.S., 9, III, ADR
Packaging Group:	III
IMDG-Marine Pollution	YES
EMS No.	F-A, S-F
MFAG Table	1

**SECTION 15 - REGULATORY INFORMATION**

Symbol:	  
	<b>Xi Irritant</b> <b>N</b> <b>N Dangerous for the Environment</b>

R Phrase(s):	R36/38 - Irritating to eyes and skin. R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S Phrase(s):	S2 - Keep out of reach of children. S22- Do not breath dust. S24- Avoid contact with skin. S25 Avoid contact with eyes. S60 - This material and/or its container must be disposed of as hazardous waste. S61 - Avoid release to the environment. Refer to special instructions/Safety datasheets.

**SECTION 16 - OTHER INFORMATION**

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MSDS prepared by:	AVK

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