

**1. PRODUCT AND COMPANY IDENTIFICATION**Product identifier

Product Name	Manganese Sulphate Monohydrate Powder
CHEMICAL FORMULA:	MnSO <sub>4</sub> · H <sub>2</sub> O
MOLECULAR WEIGHT:	169.01
CAS NO.:	10034-96-5

Recommended use of the chemical and restrictions on use

Recommended Use	Animal feed additive.
Uses advised against	Not for human consumption

Details of the supplier of the safety data sheet

Supplier	Pestell Nutrition
Address	141 Hamilton Rd New Hamburg, Ontario Canada, N3A 2H1
Phone	519-662-2877
Email	qa@pestell.com

Emergency telephone number  
(24 hr)

Canada: CANUTEC 1 613-996-6666  
US: CHEMTREC 1 703-527-3887

**2. HAZARDS IDENTIFICATION**

## Emergency Overview

## Target Organs

Lungs, Nerves.

## WHMIS Classification

D2B Toxic Material Causing Other Toxic Effects Chronic toxicity

## GHS Classification

Specific target organ toxicity- repeated exposure (Category 2)

Acute aquatic toxicity (Category 2)

Chronic aquatic toxicity (Category 2)

Corrosive - serious eye damage (Category 1)

## GHS Label elements, including precautionary statements

## Pictogram



## Signal word

Warning

## Hazard statement(s)

H373 May cause damage to organs through prolonged or repeated exposure.  
H411 Toxic to aquatic life with long lasting effects.  
H318 Causes serious eye damage.  
H317 May cause damage to organs Brain through prolonged or repeated exposure if inhaled

## Precautionary statement(s)

P260	Do not breath dust/fume/gas/mist/vapours/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective. clothing/eye protection/face protection.
P302 + P352	IF ON SKIN: Was with plenty of water/...
P305 + 351 + 338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do, Continue rinsing
P310	Immediately call a Poison Center or doctor/physician.
P314	Get medical advice/attention if you feel unwell.
P321	Specific treatment (see supplemental first aid instructions on this label).
P333 + P313	If Skin irritation or rash occurs: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.

## Supplementary precautionary statement(s)

P391	Collect spillage.
P501	Dispose of conents/container to dispose of waste and residues in accordance with local authority requirements.

## HMIS Classification

Health hazard :	0
Chronic Health Hazard :	*
Flammability :	0
Physical hazards :	0

## Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical nature	Substance	CAS No	Weight-%
Chemical Name			
Manganese sulphate monohydrate		1003496 5	96 100

**4. FIRST AID MEASURES****Description of first aid measures**

General advice	Remove contaminated clothing and shoes. If symptoms persist, call a physician.
Inhalation	IF INHALED: Remove victim to fresh air and provide oxygen, If not breathing give artificial respiration. Seek medical attention if cough or other symptoms develop.
Skin Contact	Wash with soap and water. If skin irritation persists, call a physician.
Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Rinse mouth. Get medical attention. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Drink 1 or 2 glasses of water. Obtain medical attention.

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

No information available.

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

## 5. FIREFIGHTING MEASURES

### Extinguishing media

- |                                |   |
|--------------------------------|---|
| Suitable extinguishing media   | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable extinguishing media | No information available.   |

### Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors  
Oxides of sulfur , manganese oxides.

### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

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## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

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## 7. HANDLING AND STORAGE

### Precautions for safe handling

- Handle in accordance with good industrial hygiene and safety practice
- Ensure adequate ventilation, especially in confined areas
- Avoid generation of dust
- Do not breathe dust/fume/gas/mist/vapors/spray
- Avoid contact with skin, eyes or clothing
- Wash thoroughly after handling
- Use personal protection recommended in Section 8
- Take precautionary measures against static discharges
- Do not eat, drink or smoke when using this product

### Conditions for safe storage, including any incompatibilities

- Keep containers tightly closed in a dry, cool and well-ventilated place
- Keep away from heat

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Basis
Manganese Sulphate Monohydrate	10034-96-5	TWA	0.200000 mg/m <sup>3</sup>	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks				
		TWAEV	5.000000 mg/m <sup>3</sup>	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		TWA	0.200000 mg/m <sup>3</sup>	Canada. British Columbia OEL
	Adverse reproductive effect			
		TWAEV	0.200000 mg/m <sup>3</sup>	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		TWA	0.200000 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
		TWA	0.100000 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
		TWA	0.020000 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
		TWA	0.1 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
		TWA	0.02 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)

**Personal protective equipment****Respiratory protection**

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Full contact**

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

**Splash contact**

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

### Eye protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Specific engineering controls

Use mechanical exhaust or laboratory fumehood to avoid exposure.

### Specific engineering controls

- Showers
- Eyewash stations
- Ventilation systems

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Appearance	Solid, powder
Color	White to cream
Odor	Odorless
Odor Threshold	Not determined
pH	Not determined
Melting point/freezing point	700°C
Boiling point / boiling range	850°C
Flash point	Not applicable
Evaporation rate	Not determined
Flammability (solid, gas)	Not flammable
Flammability Limit in Air	Not determined
Vapor Pressure	Not applicable
Vapor density	Not determined
Density	2.95 g/m <sup>3</sup>
Water solubility	Not determined
Partition coefficient (LogPow)	Not determined
Autoignition temperature	Not determined
Decomposition temperature	Not determined
Kinematic viscosity	Not applicable
Dynamic viscosity	Not applicable
Explosive properties	Not an explosive
Oxidizing properties	No oxidizing properties

### Other information

No information available

## 10. STABILITY AND REACTIVITY

### Reactivity

Stable under recommended storage and handling conditions (see SECTION 7, handling and storage).

### Chemical stability

Stable under normal conditions

### Possibility of Hazardous Reactions

None under normal processing

### Conditions to avoid

Extremes of temperature and direct sunlight

### Incompatible materials

None known based on information supplied

### Hazardous Decomposition Products

None under normal use conditions

Thermal decomposition can lead to release of irritating and toxic gases and vapors

Oxides of sulfur

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

Harmful: danger of serious damage to health by prolonged exposure if swallowed.

#### Inhalation LC50

No data available

#### Dermal LD50

No data available

#### Other information on acute toxicity

No data available

### Skin corrosion/irritation

No data available

### Serious eye damage/eye irritation

No data available

### Respiratory or skin sensitisation

No data available

### Germ cell mutagenicity

No data available

### Genotoxicity in vitro - Hamster - ovary

Cytogenetic analysis

### Genotoxicity in vitro Hamster ovary

Sister chromatid exchange

Genotoxicity in vivo - Mouse - Oral  
Micronucleus test

Genotoxicity in vivo - Mouse - Oral  
Cytogenetic analysis

Genotoxicity in vivo Mouse Oral  
sperm

### Carcinogenicity

Carcinogenicity - Mouse - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Endocrine: Thyroid tumors.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

### Reproductive toxicity

Reproductive toxicity - Mouse - male - Oral

Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

No data available

### Teratogenicity

No data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

No data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available

### Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

### Signs and Symptoms of Exposure

Men exposed to manganese dusts showed a decrease in fertility. Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in the legs. A stolid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds. Prolonged or repeated inhalation may cause: Pneumonia  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

### Synergistic effects

No data available

### Additional Information

RTECS:OP0893500

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## 12. ECOLOGICAL INFORMATION

### Toxicity

No data available

### Persistence and degradability

No data available

### Bioaccumulative potential

No data available

### Mobility in soil

No data available

### PBT and vPvB assessment

No data available

### Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life with long lasting effects.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life.

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## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

Disposal of wastes

Disposal should be in accordance with applicable regional, national and local laws and regulations

Contaminated packaging

Dispose of in accordance with federal, state and local regulations

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## 14. TRANSPORT INFORMATION

### DOT (US)

Not dangerous goods

### TDG (CANADA)

Not dangerous goods

### IMDG

UN number: 3077 Class : 9

Packing group: III

EMS-No: F-A, S-F

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Manganese Sulphate Monohydrate)

Marine pollutant: Marine pollutant

### IATA

UN number : 3077 Class : 9

Packing group: III

Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Manganese Sulphate Monohydrate)

### Further information

EHS- Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.





**15. REGULATORY INFORMATION****International Inventories**

Component	AICS	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	TSCA
Manganese sulphate monohydrate 10034-96-5 ( 98 - 100 )	X	-	-	X	X	-	X	-

"-" *Not Listed*

"X" *Listed*

**16. OTHER INFORMATION****Key or legend to abbreviations and acronyms used in the safety data sheet**

TWA TWA (time weighted average)

STEL STEL (Short Term Exposure Limit)

Ceiling - Maximum limit value

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL Canadian Domestic Substances List/Non Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

**Disclaimer**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Pestell Nutrition and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.

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