

SAFETY DATA SHEET

Issue Date 30-10-2019	Revision Date 26-Jan-2024	Version	3.8	Page	1 / 13
	1. IDENTIFICATION				
Product identifier Product Name	Manganous Sulfate Powder Pillows				
<u>Other means of identification</u> Product Code(s)	107166				
Safety data sheet number	M00029				
UN/ID no	UN3077				
Recommended use of the che	emical and restrictions on use				
Recommended Use	Laboratory Use. Water Analysis.				
Uses advised against	None.				
Restrictions on use	None.				
Details of the supplier of the safety data sheet					
Manufacturer Address Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050					
Emergency telephone numbe	<u>r</u> .				

+1(303) 623-5716 - 24 Hour Service

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (repeated exposure)	Category 2
Chronic aquatic toxicity	Category 2

Hazards not otherwise classified (HNOC) Not applicable

Label elements

Signal word Danger

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Hazard statements

H318 - Causes serious eye damage

H373 - May cause damage to organs through prolonged or repeated exposure

H411 - Toxic to aquatic life with long lasting effects

Precautionary statements

P280 - Wear protective gloves, protective clothing, eye protection, and face protection

P305 + P351 + P338 - 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

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

- P501 Dispose of contents/ container to an approved waste disposal plant
- P273 Avoid release to the environment

P391 - Collect spillage

Other Hazards Known

May be harmful if swallowed

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical Name Chemical Family Formula CAS No Alternate CAS Number Alternate CAS Number Type Manganous Sulfate Inorganic salt. MnSO₄ 7785-87-7 10034-96-5 - Monohydrate 10101-68-5 - Tetrahydrate

Percent ranges are used where confidential product information is applicable.

Chemical name	CAS No	Percent Range	HMRIC #
Manganese(II) sulfate	7785-87-7	100%	-

4. FIRST AID MEASURES

Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.
Eye contact	Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.

Self-protection of the first aider Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms Burning sensation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat system

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	Caution: Use of water spray when fighting fire may be inefficient.
Specific hazards arising from the chemical	No information available.
Hazardous combustion products	This material will not burn. Sulfur oxides.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice	Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.
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Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas.		
Other Information	Refer to protective measures listed in Sections 7 and 8.		
Environmental precautions			
Environmental precautions	Prevent further leakage or spillage if safe to do so.		
Methods and material for containment and cleaning up			
Methods for containment	Prevent further leakage or spillage if safe to do so.		
Methods for cleaning up	Pick up and transfer to properly labeled containers.		
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.		
Reference to other sections	See section 8 for more information. See section 13 for more information.		

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Ensure adequat ventilation.		
Conditions for safe storage, includ	ing any incompatibilities		
Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.		
Flammability class	Not applicable		

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Manganese(II) sulfate	TWA: 0.02 mg/m ³ Mn	(vacated) Ceiling: 5 mg/m ³	IDLH: 500 mg/m ³ Mn
CAS#: 7785-87-7	respirable particulate matter	Ceiling: 5 mg/m ³	TWA: 1 mg/m ³ Mn
	TWA: 0.1 mg/m ³ Mn inhalable		STEL: 3 mg/m ³ Mn
Appropriate engineering controls	particulate matter		
Engineering Controls	Showers		
	Eyewash stations		
	Ventilation systems.		
Individual protection measures, suc	h as personal protective equi	pment	
Respiratory protection	No protective equipment is nee		ons. If exposure limits are
	exceeded or irritation is experie	enced, ventilation and evacuati	on may be required.
Hand Protection	Wear suitable gloves. Barrier creams may help to protect the exposed areas of skin. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016.		
Eye/face protection	Tight sealing safety goggles.		
Skin and body protection	Wear suitable protective clothing.		
General Hygiene Considerations	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.		
Environmental exposure controls	Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.		
Thermal hazards	None under normal processing.		
0			

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state		Solid		
Appearance	powder		Color	pink
Odor	Odorless		Odor threshold	No data available

Property	Values	Remarks • Method
Molecular weight	151.01 g/mole	
рН	3.7	5% @ 20°C
Melting point / freezing point	> 400 °C / 752 °F	
Initial boiling point and boiling range	850 °C / 1562 °F	
Evaporation rate	Not applicable	
Vapor pressure	Not applicable	
Relative vapor density	No data available	
Specific gravity - VALUE 1	3.25	
Partition coefficient	log Kow ~ 0	
Soil Organic Carbon-Water Partition Coefficient	log K _{oc} ~ 0	
Autoignition temperature	No data available	
Decomposition temperature	850 °C / 1562 °F	
Dynamic viscosity	Not applicable	
Kinematic viscosity	Not applicable	
Solubility(ies)		

Water solubility

Water solubility classification	Water solubility	Water Solubility Temperature
Completely soluble	629000 mg/L	20 °C / 68 °F

Solubility in other solvents

Chemical Name	Solubility classification	<u>Solubility</u>	Solubility Temperature
Acids	Soluble	> 1000 mg/L	25 °C / 77 °F
Methanol	Slightly soluble	> 0.1 mg/L	25 °C / 77 °F
Ethyl alcohol	Insoluble	< 0.1 mg/L	25 °C / 77 °F
Ether	Insoluble	< 0.1 mg/L	25 °C / 77 °F

Other information

Metal Corrosivity

Steel Corrosion Rate Aluminum Corrosion Rate Not applicable 0.05 mm/yr / 0 in/yr

Volatile Organic Compounds (VOC) Content This Product is by Weight 100% an Individual Pure Chemical Substance

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Manganese(II) sulfate	7785-87-7	No data available	-

Explosive properties

Upper explosion limit Lower explosion limit

Flammable properties

Flash point

Flammability Limit in Air Upper flammability limit: Lower flammability limit:

Oxidizing properties

Bulk density

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No data available No data available

Not applicable

No data available No data available

No data available.

No data available

10. STABILITY AND REACTIVITY

Reactivity Not applicable.

<u>Chemical stability</u> Stable under normal conditions.

Explosion data Sensitivity to Mechanical Impact None. Sensitivity to Static Discharge None.

Possibility of hazardous reactions None under normal processing.

Hazardous polymerization

None under normal processing.

Conditions to avoid

None known based on information supplied.

Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

Hazardous decomposition products

Sulfur oxides. Manganese oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	No known effect based on information supplied.
Eye contact	Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause irreversible damage to eyes.
Skin contact	May cause irritation.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms

Redness. Burning. May cause blindness.

Acute toxicity

Based on available data, the classification criteria are not met

Mixture

If available, see ingredient data below.

Ingredient Acute Toxicity Data

No data available.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Manganese(II) sulfate	Rat	2150 mg/kg	None reported	None reported	IUCLID
(100%)	LD50				
CAS#: 7785-87-7					

Unknown Acute Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity.

Acute Toxicity Estimations (ATE)

Not applicable

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	No information available
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

Skin corrosion/irritation

May cause skin irritation.

Mixture

If available, see ingredient data below.

Ingredient Skin Corrosion/Irritation Data

No data available.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Manganese(II) sulfate (100%) CAS#: 7785-87-7	Standard Draize Test	Rabbit	500 mg	4 hours	Not corrosive or irritating to skin	ECHA

Serious eye damage/irritation

Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Mixture

If available, see ingredient data below.

Ingredient Eye Damage/Eye Irritation Data

No data available.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Manganese(II) sulfate (100%) CAS#: 7785-87-7	Standard Draize Test	Rabbit	80 mg	72 hours	Corrosive to eyes	ECHA

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Respiratory or skin sensitization

Based on available data, the classification criteria are not met.

Mixture

If available, see ingredient data below.

Ingredient Sensitization Data

No data available.

STOT - single exposure

Based on available data, the classification criteria are not met.

Mixture

If available, see ingredient data below.

Ingredient Specific Target Organ Toxicity Single Exposure Data No data available.

STOT - repeated exposure

May cause damage to organs.

Mixture

If available, see ingredient data below.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data No data available.

Carcinogenicity

Based on available data, the classification criteria are not met.

Mixture

If available, see ingredient data below.

Ingredient Carcinogenicity Data

No data available.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Manganese(II) sulfate	7785-87-7	-	-	-	-

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA	Does not apply

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Mixture invitro Data

If available, see ingredient data below.

Substance invitro Data

No data available.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Manganese(II) sulfate (100%) CAS#: 7785-87-7	Mutation in microorganisms	Salmonella typhimurium	1775 nmol/tubes	None reported	Positive test result for mutagenicity	RTECS

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Mixture invivo Data

If available, see ingredient data below.

Substance invivo Data

No data available.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Reproductive Toxicity Data

No data available.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Manganese(II) sulfate (100%) CAS#: 7785-87-7	Mouse TD⊾₀	15000 mg/kg	3 weeks	Effects on Fertility Post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants) Effects on Newborn Growth statistics (e.g. % reduced weight gain)	RTECS
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Manganese(II) sulfate (100%) CAS#: 7785-87-7	Rat TC∟₀	0.0005 mg/L	None reported	Effects on Newborn Metabolic effects	RTECS

Aspiration hazard

Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects.

Unknown aquatic toxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Mixture

Aquatic Acute Toxicity

If available, see ingredient data below.

Aquatic Chronic Toxicity

If available, see ingredient data below.

Substance

Aquatic Acute Toxicity No data available.

Chemical name Exposure **Species** Endpoint Reported dose Key literature references and time sources for data type Manganese(II) sulfate 96 hours Oncorhynchus mykiss 3.17 mg/L PEEN LC50 (100%) CAS#: 7785-87-7 Species Key literature references and **Chemical name** Exposure Endpoint Reported dose time sources for data type 5.7 mg/L Manganese(II) sulfate 48 Hours Daphnia magna EC50 PEEN (100%)

CAS#: 7785-87-7 Aquatic Chronic Toxicity No data available.					
Persistence and degradability					
Mixture No data available.					
Mixture No data available.					
Partition coefficient		log Kow ~ 0			
<u>Mobility</u>					
Soil Organic Carbon-Water Partitio	n Coefficient	log K _{oc} ~ 0			
Other adverse effects No information available					
	13. DISPOSAL C	ONSIDERATI	ONS		
Waste treatment methods					
Waste from residues/unused products	Dispose of in accordance environmental legislation		ions. Dispose of	f waste in accorda	nce with
Contaminated packaging	Do not reuse empty conta	ainers.			
Special instructions for disposal	If permitted by regulation between 6 and 9 with an tap completely, slowly po Dispose of material in an	alkali, such as soc our the material to	da ash or sodiur the drain. Flush	n bicarbonate. Op system with plent	en cold water
	14. TRANSPOR	T INFORMATI	ON		
DOT UN/ID no Proper shipping name DOT Technical Name Transport hazard class(es) Packing Group	UN3077 Environmentally hazardo (Manganese sulfate) 9 III	us substances, so	lid, n.o.s.		
<u>TDG</u> UN/ID no Proper shipping name TDG Technical Name Transport hazard class(es) Packing Group	UN3077 Environmentally hazardo (Manganese sulfate) 9 III	us substances, so	lid, n.o.s.		
IATA UN number or ID number Proper shipping name IATA Technical Name Transport hazard class(es) Packing group	UN3077 Environmentally hazardo (Manganese sulfate) 9 III	us substances, so	lid, n.o.s.		

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IMDG	
UN number or ID number	UN3077
Proper shipping name	Environmentally hazardous substances, solid, n.o.s.
IMDG Technical Name	(Manganese sulfate)
Transport hazard class(es)	9
Packing Group	III
Marine pollutant	This material meets the definition of a marine pollutant
-	

Note:

No special precautions necessary.

Additional information

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies. If the item is part of a reagent set or kit the classification would change to the following: UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories	
TSCA	Complies
DSL/NDSL	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory **DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
TCSI	Complies
AICS	Complies
NZIoC	Complies

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

TCSI - Taiwan Chemical Substances Inventory

AICS - Australian Inventory of Chemical Substances

NZIOC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
Manganese(II) sulfate (CAS #: 7785-87-7)	1.0
SARA 311/312 Hazard Categories	
Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

EN / AGHS	Page

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations.

Chemical name	New Jersey	Massachusetts	Pennsylvania
Manganese(II) sulfate	X	-	Х
7785-87-7			

U.S. EPA Label Information

Chemical name	FIFRA	FDA
Manganese(II) sulfate	-	21 CFR 184.1461

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

Additional information

Global Automotive Declarable Substance List (GADSL) Not applicable NFPA and HMIS Classifications

NFPA	Health hazards - 3	Flammability - 0	Instability - 0	Physical and chemical properties -
HMIS	Health hazards - 3 - *	Flammability - 0	Physical hazards - 0	Personal protection - X - I

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
ATSDR	ATSDR (Agency for Toxic Substances and Disease Registry)
CCRIS	CCRIS (Chemical Carcinogenesis Research Information System)
CDC	CDC (Center for Disease Control)
CEPA	CEPA (Canadian Environmental Protection Agency)
CICAD	CICAD (Concise International Chemical Assessment Documents)
ECHA	ECHA (The European Chemicals Agency)
EEA	EEA (European Environment Agency)
EPA	EPA (Environmental Protection Agency)
ERMA	ERMA (New Zealands Environmental Risk Management Authority)
ECOSARS	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
FDA	FDA (Food & Drug Administration)
GESTIS	GESTIS (Information System on Hazardous Substances of the German Social Accident

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

None

TWA	TWA (time-weighted average)		STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration		Ceiling	Ceiling Limit Value
Х	Listed		Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.
SKN* RSP+ C M	Skin designation Respiratory sensitization Carcinogen mutagen		SKN+ ** R	Skin sensitization Hazard Designation Reproductive toxicant
Prepared By		Hach Product Compliance Department		
Issue Date		30-10-2019		
Revision Date		26-Jan-2024		

Revision Note

<u>Disclaimer</u>

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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End of Safety Data Sheet