

Safety Data Sheet

Liquid Manganese Sulphate Foliar Fertiliser



According to EC-Regulations 1907/2006 (REACH) & 1272/2008 (CLP)

1 Identification of the substance/mixture and of the company/undertaking

1.1 Product Identifier

Product/Trade name : Manganese 15% Mn weight/volume
Synonyms : Manganese 15% Mn weight/volume
EC No : not applicable as fertiliser is a mixture
CAS No. : not applicable as fertiliser is a mixture
REACH Registration Number. : not applicable as fertiliser is a mixture

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Fertilizer
Uses advised against : This mixture should be limited to use as a fertiliser.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Importer/Supplier : BrineFlow Properties and Handling Ltd
Address : South Denes Road, Great Yarmouth, Norfolk. NR30 3QD
Telephone number : 01493 809820

1.4 Emergency telephone number

Telephone number : 01493 809820

2 Hazards identification

2.1 Classification of the substance or mixture

Classification in accordance with Regulation 1272/2008 (CLP) : Human Health : Eye Dam. 1 - H318; STOT RE2 - H373
: Environment: Aquatic Chronic 2 - H411
Hazard Statement(s) : H319 - Causes serious eye irritation
Classification in accordance with Directive 67/548 (DSD) : Xn;R48/20/22. N;R51/53
Risk phrase(s) : R48/20/22: Danger of serious damage to health by prolonged exposure/Harmful by inhalation/Harmful if swallowed
: R51/52: Toxic to aquatic organisms/Harmful to aquatic organisms

2.2 Label elements

Contains : Manganese Sulphate

Hazard pictogram(s) :

Signal word : Danger

: H318 - Causes serious Eye Damage

Hazard Statement(s) : H373 - May cause damage to organs through prolonged or repeated exposure

: H411 - Toxic to aquatic life with long-lasting effects

Precautionary statements : Prevention • P260 - Do not breathe dust/fume/gas/mist/vapours/spray.

: P273 - Avoid release to the environment

: P280 - Wear eye/face protection.

2.2 Label elements cont.....

- : Response • P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- : P314 - Get medical advise/attention if you feel unwell.
- : Disposal • P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.
- : Supplementary • P310 - Immediately call a POISON CENTER or doctor/physician
- : P391 - Collect Spillage

2.3 Other hazards

Not a PBT or vPvB mixture based on ingredients.

3 Composition/information on ingredients

3.1 substance

Hazardous ingredients

Chemical name	CAS no.	EC no.	Generic REACH Registration No.	Classification Regulation (EC) No. 1272/2008 Directive 67/548 (DSD)	% (w/w)
Manganese Sulphate	10034-96-5	232-08909	01-2119456624-35-XXXX	 Eye Dam. 1, H318 Xn; R48/20/22 Aquatic Chronic 2, H411 N;R51/53	30-40%
Sulphuric Acid 60%	7664-93-9	231-639-5	01-2119458838-20-XXXX	 Skin Corr. 1A, H314	<0.5%
Mono Ethylene Glycol	107-21-1	203-473-3	01-2119456816-28-XXXX	 Acute Tox. 4, H302 STOT RE2 - H37 Xn; R22	<0.5%

Other Ingredients

Water	7732-18-5	231-791-2	N/A	none	Upto 70%
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EC no. means EINECS or ELINCS number.

4 First aid measures

4.1 Description of first aid measures

- General : Get medical attention if any discomfort continues
- Inhalation : Move the exposed person to fresh air at once. Get medical attention. Provide rest, warmth and fresh air. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen.
- Ingestion : Ingestion DO NOT INDUCE VOMITING! NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Remove victim immediately from source of exposure. Drink plenty of water. Get medical attention immediately! Provide rest, warmth and fresh air.
- Skin contact : Remove affected person from source of contamination. Get medical attention promptly if symptoms occur after washing. Remove contaminated clothes and rinse skin thoroughly with water.

4.1 Description of first aid measures cont....

Eye contact : Remove victim immediately from source of exposure. Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Get medical attention immediately. Continue to rinse.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation : Irritation of nose, throat and airway. Prolonged or frequent inhalation of vapours in high concentrations may cause permanent damage to the nervous system, including the brain.

Ingestion : May cause gastrointestinal irritation. Diarrhoea. Nausea, vomiting, brain.

Skin contact : May cause skin irritation/eczema. (The hazard is low for usual industrial handling).

Eye contact : May cause blurred vision and serious eye damage.

4.3 Indication of any immediate medical attention and special treatment needed

Note to physician : No specific first aid measures noted.

5 Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media : Product not flammable - use fire extinguishing media for surrounding materials.

unsuitable extinguishing media : Extinguishers of the chlorinated hydrocarbon variety are not recommended as toxic products may be produced by the decomposition of the extinguishing medium when it comes into contact with hot manganese compounds.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : When heated and in case of fire, irritating vapours/gases may be formed. In case of fire, toxic gases may be formed.

5.3 Advice for firefighters

Special fire fighting procedures : Keep run-off water out of sewers and water sources. Dike for water control.

Special protective equipment for fire-fighters : Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep unauthorised personnel away.

Do not walk through spilled material.

Avoid exposure to vapours or sprays.

Wear appropriate personal protective equipment.

6.2 Environmental precautions

Prevent the contamination of watercourses and drains and sewage systems and inform the appropriate authority in case of accidental contamination of watercourses.

6.3 Methods and material for containment and cleaning up

Any spillage of fertilizer should be cleaned up promptly, swept up and placed in a clean labelled open container for safe disposal.

Stop flow of material if possible.

Absorb spillage with suitable absorbant material.

6.4 Reference to other sections

See section 1 for emergency contact information, section 8 for personal protective equipment and section 13 for waste disposal.

7 Handling and storage

7.1 Personal precautions, protective equipment and emergency procedures

Avoid inhalation of vapours or sprays and contact with skin and eyes.
 Carefully clean all equipment prior to maintenance and repair.
 When handling the product use appropriate personal protective equipment (see section 11).
 Carefully clean all equipment prior to maintenance and repair.

7.2 Conditions for safe storage, including any incompatibilities

Locate away from the sources of heat or fire.
 On farm, ensure that the fertilizer is not stored near water courses.
 Ensure high standard of housekeeping in the storage area.
 Any container used for the storage should be sound and kept sealed.
 Packaging materials: Plastic synthetic materials. Keep packaging sealed.

7.3 Specific end use(s)

Fertilizer

8 Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL)				
Components	Type	Route	Value	Form
Manganese Sulphate (10034-96-5)	Industrial	Dermal	4.14 µg/kg/day	Long-term - systemic effects
		Inhalation	0.2 mg/m ³	Long-term - systemic effects
	Consumer	Dermal	2.1 µg/kg/day	Long-term - systemic effects
		Inhalation	0.043 mg/m ³	Long-term - systemic effects
Predicted No effect Level Concentrations (PNECs)				
Components	Type	Route	Route	
Manganese Sulphate (10034-96-5)	Freshwater	n/a		0.0128 mg/l
	Marinewater	n/a		0.4 µg/l
	Spills (Freshwater)	n/a		30 µg/l
	sediment (Freshwater)	n/a		11.4 µg/l
	sediment (Marinewater)	n/a		1.4 µg/l
	Soil	n/a		25.1 mg/kg
	STP	n/a		56 mg/l

8.2 Exposure controls

- Appropriate engineering measures : Ventilate as needed to control vapour and spray.
 Hygienic measures : When handling the product do not eat, drink or smoke.
 : Wash hands after handling and before eating, smoking, using the lavatory and end of working
 : Remove and isolate contaminated clothing. Launder contaminated clothing before reuse.

Individual protection

8.2 Exposure controls cont....

- Respiratory system : use respiratory mask if vapour or spray present.
- Skin and body : Working clothes.
- Hands : Wear suitable gloves when handling the product if risk of skin contact.
- Eyes : Use vapour / spray safety goggles where there is danger of eye contact. (EN166)
- Environmental exposure controls : Inform the appropriate authority in case of accidental contamination of watercourses.
- : Do not flush into surface water or sanitary sewer system.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance : Clear pink liquid
- Odour : Slight
- Odour threshold : n/a
- pH : typically > 4.5
- Melting point/freezing point : -5°C
- Initial boiling point and boiling range : >100°C
- Flash point : n/a
- Flammability (solid, gas) : Non-combustible. Decomposes on heating. Toxic gases are generated.
- Upper/lower flammability or explosive limits : Not available
- Explosive properties : n/a
- Auto-ignition temperature : n/a
- Decomposition temperature : >100°C
- Minimum ignition energy : Not available
- Critical temperature : n/a
- Density : Typically 1.34 - 1.36 kg/litre
- Vapour pressure at 20°C : Not available
- Vapour density : Not available
- Partition coefficient : Not available
- Viscosity : Not available
- Water solubility : highly soluble
- Surface tension : Not available

10 Stability and reactivity

10.1 Information on basic physical and chemical properties

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

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

none known

10.4 Conditions to avoid

Avoid thermal decomposition

Toxic gases are generated when heated.

10.5 Incompatible materials

Strong acids. Strong oxidising agents. Powdered metals. Inorganic peroxides

10.6 Hazardous decomposition products

For fire situation: see section 5.

When strongly heated, it evaporates and concentrates and may decompose releasing toxic fumes.

Sulphurous gases (Sox). Oxides of Manganese.

See also Sections 2 and 9.

11 Toxicological information

11.1 Information on toxicological effects

Acute toxicity	Type	Species	result
Manganese Sulphate (10034-96-5)	Oral LD50	Rat	2150 mg/kg
	Dermal LD50	Rat	not determined
	Inhalation LC50	Rat	>4.45 mg/l

Local effects

- Skin irritation : Not Irritating. Test method OECD 404
- Eye irritation : Irritating. Test method OECD 405. Irritating score 36/110
- Sensitisation : not sensitising.
- Mutagenicity : Negative.
- Reproductive toxicity : Suspected reproductive toxicant based on limited evidence.
- Carcinogenicity : NOAEL male 615 mg/kg Oral Rat, female 715 mg/kg Oral Rat.

remarks : the above local effects are based on Manganese Sulphate

12 Ecological information

12.1 Information on toxicological effects

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

Aquatic	Type	Species	result
Manganese Sulphate (10034-96-5)	LC50	Rainbow Trout	14.5 mg/l 96 hours
	LC50	Daphnia	9.8 mg/l 48 hours
	EC50	Algae	61 mg/l 72 hours

12.2 Persistence and degradability

- Degradability : The product contains persistent (not readily degradable) substances.
- Phototransformation : Not applicable.
- Biodegradation : Not Applicable - inorganic chemical
- Hydrolysis : not applicable

12.3 Bioaccumulative potential

Octanol-water partition coefficient (Kow) : scientifically unjustified

Bioconcentration factor (BCF) : Low potential for bioaccumulation (based on main ingredient properties).

12.4 Mobility in soil

An adsorption / desorption study on Manganese (2+) has been conducted in 35 soils following the OECD sorption guideline. Data for 100 day incubations show that, as expected, the sorption is pH sensitive. A median Kd value of 1355 ml/g has been determined for all soils (pH range 3.0-8.5).

12.5 Results of PBT and vPvB assessment

Not a PBT or vPvB mixture based on ingredients.

12.6 Other adverse effects

none known

13 Disposal considerations

13.1 Waste Treatment Methods

- Container : Containers should be cleaned by appropriate method and then re-used or disposed by landfill or incineration as appropriate, in accordance with local and national regulations.
- : Do not remove label until container is thoroughly cleaned.
- Methods of disposal : Depending on degree and nature of contamination dispose of by use as fertilizer on farm, as raw material for liquid fertilizer, or to an authorised waste facility.
- : Do not empty into drains; dispose of this material and its container in a safe way and in accordance with all applicable local and national regulations.

14 Disposal considerations

14.1 Un Number

- ADR/RID : 3082
- ADN/ADNR : 3082
- IMDG : 3082
- ICAO/IATA : 3082

14.2 UN Proper shipping name

- ADR/RID : Environmentally hazardous substance, Liquid n.o.s (manganese sulphate)
- ADN/ADNR : Environmentally hazardous substance, Liquid n.o.s (manganese sulphate)
- IMDG : Environmentally hazardous substance, Liquid n.o.s (manganese sulphate)
- ICAO/IATA : Environmentally hazardous substance, Liquid n.o.s (manganese sulphate)

14.3 Transport hazard class(es)

- ADR/RID : III
- ADN/ADNR : III
- IMDG : III
- ICAO/IATA : III

14.4 Packing group and label

- ADR/RID :
- ADN/ADNR :
- IMDG :
- ICAO/IATA :



14.5 Environmental hazards

Environmentally Hazardous Substance/Marine Pollutant



14.6 Special Precautions for user

see section 8

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not applicable

15 Regulatory information

15.1 Safety, health and environmental regulation/legislation specific for the substance or mixture

This product is classified and labelled in accordance with Regulation (EC) 1272/2008 - CLP Regulation.
This Safety Data Sheet complies with the requirements of Regulation No 1907/2006 - REACH

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out - see attached exposure scenario

16 Regulatory information

Abbreviations and acronyms

IMDG	:	International Maritime Code for Dangerous Goods
ADR	:	European Agreement for the Carriage of Dangerous Goods by Road
RID	:	European Agreement for the Carriage of Dangerous Goods by Rail
ICAO	:	International Civil Aviation Organisation
IATA	:	International Air Transport Association
REACH	:	Registration, Evaluation, Authorisation and Restriction of Chemicals
CLP	:	Classification, Labelling and Packaging
CAS	:	Chemical Abstracts Service
vPvB	:	Very persistent and very Bioaccumulative

Disclaimer

The information provided in this safety data sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any proceed, unless specified in the text.