EPSO Microtop®

Version: 5.0 Revision Date: 19.12.2012

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

1.1 Product identifier

Trade name : EPSO Microtop®

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

Use of the Substance/Mixture : Fertilizer

1.3 Details of the supplier of the safety data sheet

Company : K+S KALI GmbH
Bertha-von-Suttner-Str. 7
34131 Kassel
Germany
Telephone : +49-(0)561-9301-0
Telefax : +49-(0)561-9301-1753
E-mail address : info@kali-gmbh.com

1.4 Emergency telephone number

Giftinformationszentrale Nord, Göttingen, Germany
Telephone:+49 (0)551 19240

2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Eye irritation, Category 2	H319: Causes serious eye irritation.
Chronic aquatic toxicity, Category 3	H412: Harmful to aquatic life with long lasting effects.

Classification(67/548/EEC,1999/45/EC)

R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2 Label elements

Labelling(REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Warning

Hazard statements :	H319	Causes serious eye irritation.
	H412	Harmful to aquatic life with long lasting effects.
Precautionary statements :	**Prevention:**	
	P280	Wear protective gloves/ eye protection/

face protection.

P264 Wash hands thoroughly after handling.

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.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Labelling according to EC Directives (1999/45/EC)

R-phrase(s)	:	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrase(s)	:	S60	This material and its container must be disposed of as hazardous waste.

2.3 Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

3. Composition/information on ingredients

3.2 Mixtures

Chemical nature : Mixture of micro-nutrients

Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Concentration [%]
manganese sulphate	7785-87-7 232-089-9 01-2119456624-35-XXXX	Xn; R48/20/22 N; R51-R53 Xi; R41	Eye Dam. 1; H318 STOT RE 2; H373 Aquatic Chronic 2; H411	2,8
boric acid, crude natural, containing not more than 85 per cent of H3BO3 calculated on the dry weight	11113-50-1 234-343-4 01-2119486683-25-0000	Repr.Cat.2; R60-R61	Repr. 1B; H360FD	5,1

For the full text of the R-phrases mentioned in this Section, see Section 16.
For the full text of the H-Statements mentioned in this Section, see Section 16.

4. First aid measures

4.1 Description of first aid measures

General advice	:	Remove and wash contaminated clothing before re-use. If you feel unwell, seek medical advice (show the label where possible).
If inhaled	:	If breathed in, move person into fresh air.
In case of skin contact	:	Rinse with water.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. Obtain medical attention.
If swallowed	:	Clean mouth with water and drink afterwards plenty of water. Obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	Ingestion may provoke the following symptoms: Diarrhoea

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	For specialist advice physicians should contact the Poisons Information Service.

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	The product is not flammable. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	none

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Heating or fire can release toxic gas.

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Wear self contained breathing apparatus for fire fighting if necessary.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Avoid breathing dust. Ensure adequate ventilation.

6.2 Environmental precautions

Environmental precautions : Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Use mechanical handling equipment.
Use a suitable vacuum cleaner.

6.4 Reference to other sections

For personal protection see section 8.

7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid dust formation.

Advice on protection against fire and explosion : The product is not flammable.
No special precautions required.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in original container.
Keep in a dry place.

Advice on common storage : Keep away from food, drink and animal feedingstuffs.

German storage class : 13 Non Combustible Solids

Other data : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

: Not relevant

8. Exposure controls/personal protection

8.1 Control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
manganese sulphate (1:1)	7785-87-7	AGW	0,5 mg/m3	2009-02-16	DE TRGS 900
Further information	:	DFG: Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission). The threshold value is based on the element content of the corresponding metal.			
Boric acid	11113-50-1	AGW	0,5 mg/m3		DE TRGS 900
Further information	:	(Expressed as: Boron) DFG: Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission). The threshold value is based on the element content of the corresponding metal.			

8.2 Exposure controls

Engineering measures

Local exhaust

Personal protective equipment

Respiratory protection	:	Effective dust mask.
Hand protection	:	Protective gloves
Eye protection	:	Safety glasses
Skin and body protection	:	Protective suit
Hygiene measures	:	When using do not eat, drink or smoke. Wash hands before breaks and at the end of workday.
Protective measures	:	Avoid contact with skin, eyes and clothing. Do not breathe dust.

Environmental exposure controls

General advice	:	Do not let product enter drains.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	crystalline
Colour	:	white
Odour	:	very faint
pH	:	ca. 5, at 25 °C, Aqueous solution
Melting point/range	:	> 48 °C
Flash point	:	Not applicable
Density	:	Not applicable
Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	Not applicable
Ignition temperature	:	Not applicable
Thermal decomposition	:	> 700 °C
Explosive properties	:	Not explosive
Oxidizing properties	:	Not applicable

9.2 Other information

Burning number	:	1

Bulk density	:	ca. 1.000 kg/m³

10. Stability and reactivity

10.1 Reactivity

Stable

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	None known.

10.4 Conditions to avoid

Conditions to avoid	:	None known.

10.5 Incompatible materials

Materials to avoid	:	None known.

10.6 Hazardous decomposition products

Hazardous decomposition products	:	Heating or fire can release toxic gas.

11. Toxicological information

11.1 Information on toxicological effects

Product

Acute oral toxicity	:	The substance or mixture has no acute oral toxicity, Calculation method, REGULATION (EC) No 1272/2008
Acute inhalation toxicity	:	The substance or mixture has no acute inhalation toxicity, Calculation method, REGULATION (EC) No 1272/2008
Acute dermal toxicity	:	The substance or mixture has no acute dermal toxicity, Calculation method, REGULATION (EC) No 1272/2008
Skin corrosion/irritation	:	Result: No skin irritation, Calculation method, REGULATION (EC) No 1272/2008
Serious eye damage/eye irritation	:	Result: Eye irritation, Calculation method, REGULATION (EC) No 1272/2008
Respiratory or skin sensitization	:	Result: Does not cause skin sensitization., Calculation method, REGULATION (EC) No 1272/2008
	:	Result: Does not cause respiratory sensitization., Calculation method, REGULATION (EC) No 1272/2008
Carcinogenicity	:	Contains no ingredient listed as a carcinogen
Reproductive toxicity	:	This product contains one or more substances which are classified in the EU as carcinogenic, mutagenic and/or reprotoxic.
Teratogenicity	:	This product contains one or more substances which are classified in the EU as carcinogenic, mutagenic and/or reprotoxic.

STOT - single exposure	:	Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure. Remarks: Calculation method, REGULATION (EC) No 1272/2008
STOT - repeated exposure	:	Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure. Remarks: Calculation method, REGULATION (EC) No 1272/2008

Components:

manganese sulphate :

Acute oral toxicity	:	LD50: 2.150 mg/kg, rat, anhydrous substance
Acute inhalation toxicity	:	LC50: 4,45 mg/l, 4 h, rat, OECD Test Guideline 403, anhydrous substance
Acute dermal toxicity	:	no data available
Skin corrosion/irritation	:	rabbit, Result: No skin irritation, OECD Test Guideline 404
Serious eye damage/eye irritation	:	rabbit, Result: Serious eye damage, OECD Test Guideline 405
Respiratory or skin sensitization	:	Result: Does not cause skin sensitization., Information derived from practical experience.
Germ cell mutagenicity		
Genotoxicity in vitro	:	Result: negative, OECD Test Guideline 471
Genotoxicity in vivo	:	mouse, Mutagenicity (micronucleus test), Result: negative
Assessment	:	Did not show mutagenic effects in animal experiments.
STOT - repeated exposure	:	rat(male), Oral, NOAEL: 200 mg/kg, anhydrous substance
STOT - repeated exposure	:	rat(female), Oral, NOAEL: 230 mg/kg, anhydrous substance

boric acid, crude natural, containing not more than 85 per cent of H3BO3 calculated on the dry weight :

Acute oral toxicity	:	LD50: 3.500 - 4.100 mg/kg, rat
Acute inhalation toxicity	:	LC50: > 2 mg/l, rat
Acute dermal toxicity	:	LD50: > 2.000 mg/kg, rat
Skin corrosion/irritation	:	Result: No skin irritation
Serious eye damage/eye irritation	:	Result: No eye irritation, Human experience
Respiratory or skin sensitization	:	Result: Does not cause skin sensitization.
Teratogenicity	:	rat, NOAEL: 9,6 mg/kg Assessment: Experiments have shown reproductive toxicity effects on laboratory animals.

12. Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	no data available
Toxicity to daphnia and other aquatic invertebrates	:	no data available
Toxicity to algae	:	no data available
Toxicity to bacteria	:	no data available

Components:

manganese sulphate :

Toxicity to fish	:	LC50: 137,2 mg/l, 96 h, Sea Trout, Brown Trout, anhydrous substance
Toxicity to daphnia and other aquatic invertebrates	:	LC50: 8,2 - 37,7 mg/l, 96 h, Other, anhydrous substance
Toxicity to algae	:	EC50: 167,7 mg/l, 72 h, Desmodesmus subspicatus (green algae), OECD Test Guideline 201, anhydrous substance
Toxicity to bacteria	:	> 2.749 mg/l, 3 h, activated sludge, OECD Guideline 209, anhydrous substance
Toxicity to fish (Chronic toxicity)	:	NOEC: 1,6 mg/l, 120 d, Oncorhynchus mykiss (rainbow trout), anhydrous substance

boric acid, crude natural, containing not more than 85 per cent of H3BO3 calculated on the dry weight :

Toxicity to fish	:	LC50: 571,9 mg/l, 32 d, Oncorhynchus mykiss (rainbow trout)
Toxicity to daphnia and other aquatic invertebrates	:	EC50: 760,7 mg/l, 48 h, Daphnia magna (Water flea)
Toxicity to algae	:	EC10: 137,3 mg/l, 96 h, Desmodesmus subspicatus (green algae)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 34,3 mg/l, 21 d, Daphnia magna (Water flea)

12.2 Persistence and degradability

Product:

Biodegradability	:	Not applicable

12.3 Bioaccumulative potential

Product:

Bioaccumulation	:	Not applicable

12.4 Mobility in soil

Product:

Physico-chemical	:	Not applicable

removability

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects

Product:

Adsorbed organic bound halogens (AOX)	:	Not applicable

13. Disposal considerations

13.1 Waste treatment methods

Product	:	Dispose of in accordance with local regulations.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

14.1 Land transport

ADR

Remarks	:	Not classified as dangerous in the meaning of transport regulations.
Tunnel restriction code	:	Not relevant

14.2 Sea transport

ADNR

Remarks	:	Not classified as dangerous in the meaning of transport regulations.

IMDG

Remarks	:	Not classified as dangerous in the meaning of transport regulations.

14.3 Air transport

IATA-DGR

Remarks	:	Not classified as dangerous in the meaning of transport regulations.

14.4 Special precautions for user

Not relevant

14.5 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

15. Regulatory information

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

Major Accident Hazard Legislation	:	Does not fall under the German StörfallV.
Water contaminating class (Germany)	:	WGK 1 slightly water endangering

Notification status

REACH	:	This mixture contains only ingredients which have been registered, or are exempt from registration, according to Regulation (EC) No. 1907/2006 (REACH). This product contains an ingredient according to the candidate list of Annex XIV of the REACH Regulation1907/2006/EC.

15.2 Chemical Safety Assessment

Not relevant

16. Other information

Full text of R-phrases referred to under sections 2 and 3

R41	Risk of serious damage to eyes.
R48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
R51	Toxic to aquatic organisms.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53	May cause long-term adverse effects in the aquatic environment.
R60	May impair fertility.
R61	May cause harm to the unborn child.

Full text of H-Statements referred to under sections 2 and 3.

H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H360FD	May damage fertility. May damage the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

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 a 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 process, unless specified in the text.