EPSO Profitop®

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 03/02/2021 Revision date: 15/01/2024 Supersedes version of: 22/11/2023 Version: 21.2

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

1.1. Product identifier

Product form	:	Mixture
Trade name	:	EPSO Profitop®
UFI	:	JS00-Q0YT-X009-S7NN
Product code	:	K0089
Type of product	:	Fertilizer
Product group	:	Fertilizers

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

1.2.1. Relevant identified uses

Use of the substance/mixture	:	Fertilisers

1.2.2. Uses advised against

Restrictions on use	:	Any use other than those listed in section 1.2.1

1.3. Details of the supplier of the safety data sheet

Manufacturer
K+S Minerals and Agriculture GmbH
Bertha-von Suttner-Str., 7
DE– 34131 Kassel
Deutschland
T +49 561 9301- 0
info@k-plus-s.com - www.kpluss.com

1.4. Emergency telephone number

Emergency number	:	For Chemical Emergency Call : for incidents involving hazardous materials [or dangerous goods] spill, leak, fire, exposure or accident, call CHEMTREC 24hr/day 7days/week Within USA and Canada: +1 800 424 - 9300 Outside USA and Canada: +1 703 741 - 5970 (collect calls accepted)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Serious eye damage/eye irritation, Category 1	H318
Specific target organ toxicity – Repeated exposure, Category 2	H373
Hazardous to the aquatic environment – Acute Hazard, Category 1	H400
Hazardous to the aquatic environment – Chronic Hazard, Category 1	H410

Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

Causes serious eye damage. Toxic to aquatic life with long lasting effects. Very toxic to aquatic life. May cause damage to organs (brain) (if inhaled).

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS05 GHS08 GHS09

Signal word (CLP) : Danger
Contains : Manganese sulfate monohydrate; Zinc sulfate monohydrate; Copper sulfate pentahydrate
Hazard statements (CLP) : H318 - Causes serious eye damage.
H373 - May cause damage to organs (brain) through prolonged or repeated exposure (if inhaled).
H410 - Very toxic to aquatic life with long lasting effects.
Precautionary statements (CLP) : P260 - Do not breathe dust.
P273 - Avoid release to the environment.
P280 - Wear eye protection, 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 doctor, a POISON CENTER.
P314 - Get medical advice/attention if you feel unwell.

2.3. Other hazards

Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

Component	
Zinc sulfate monohydrate (7446-19-7)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Copper sulfate pentahydrate (7758-99-8)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Manganese sulfate monohydrate (Constituent) substance with a Community workplace exposure limit	CAS-No.: 10034-96-5 EC-No.: 232-089-9 EC Index-No.: 025-003-00-4 REACH-no: 01-2119456624-35	≥ 10 – < 20	Eye Dam. 1, H318 STOT RE 2, H373 Aquatic Chronic 2, H411
Zinc sulfate monohydrate (Constituent)	CAS-No.: 7446-19-7 EC-No.: 231-793-3 EC Index-No.: 030-006-00-9 REACH-no: 01-2119474684-27	≥ 5 – < 10	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Copper sulfate pentahydrate (Constituent)	CAS-No.: 7758-99-8 EC-No.: 231-847-6 EC Index-No.: 029-023-00-4 REACH-no: 01-2119520566-40	≥ 2.5 – < 5	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Get medical advice/attention if you feel unwell.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Wash skin with plenty of water.
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion : Rinse mouth with water. Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after eye contact : Serious damage to eyes.
Symptoms/effects after ingestion : Gastrointestinal complaints. Ingestion may cause nausea and vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire. Water spray. Dry powder. Foam.
Unsuitable extinguishing media : Strong water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released. Sulphur oxides. Metallic oxides.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Other information : Do not allow run-off from fire fighting to enter drains or water courses. Disposal must be done according to official regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.
Methods for cleaning up : Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. Avoid dust formation.

6.4. Reference to other sections

Information for safe handling. See Section 7. For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid dust formation. Avoid breathing spray, dust, fume. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool. Protect from moisture.

Incompatible materials : Metals. reducing agents.

Information on mixed storage : Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

Fertilisers.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Manganese sulfate monohydrate (10034-96-5)	
EU - Indicative Occupational Exposure Limit (IOEL)	
IOEL TWA	0.2 mg/m³ (Inhalable fraction) 0.05 mg/m³ (Respirable fraction)
Belgium - Occupational Exposure Limits	
OEL TWA	0.2 mg/m³ 0.05 mg/m³
France - Occupational Exposure Limits	
VME (OEL TWA)	0.05 mg/m³ 0.2 mg/m³
Netherlands - Occupational Exposure Limits	
TGG-8u (OEL TWA)	0.05 mg/m³ (respirabel, als mangaan) 0.2 mg/m³ (inhaleerbaar, als mangaan)
TGG-8u (OEL TWA) [ppm]	0.022 ppm (respirabel, als mangaan) 0.088 ppm (inhaleerbaar, als mangaan)
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	0.2 mg/m³ 0.05 mg/m³
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	0.1 mg/m³ (Inhalable fraction)

Copper sulfate pentahydrate (7758-99-8)	
Netherlands - Occupational Exposure Limits	
TGG-8u (OEL TWA)	0.1 mg/m³ (inhaleerbaar)

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Ensure good ventilation of the work station. Always wash hands after handling the product. Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):

8.2.2.1. Eye and face protection

Eye protection:
In case of dust production: protective goggles (EN 166)

8.2.2.2. Skin protection

Skin and body protection:
Wear suitable protective clothing. EN 340

Hand protection:
In case of repeated or prolonged contact wear gloves. Protective gloves against chemicals (EN 374). Nitrile rubber gloves. Please follow the instructions related to the permeability and the penetration time provided by the manufacturer. Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer. Gloves must be replaced after each use and whenever signs of wear or perforation appear

8.2.2.3. Respiratory protection

Respiratory protection:
Dust production: dust mask with filter type P2. Short term exposure. EN 143

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Colour	:	white.
Appearance	:	Crystalline powder.
Odour	:	odourless. none to slight.
Odour threshold	:	Not available
Melting point	:	> 48 °C
Freezing point	:	Not available
Boiling point	:	Not available
Flammability	:	Not available
Explosive properties	:	Product is not explosive.
Oxidising properties	:	Not oxidising.
Lower explosion limit	:	Not applicable
Upper explosion limit	:	Not applicable

Flash point	:	Not applicable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	> 700 °C
pH	:	≈ 3 (≤ 4)
pH solution concentration	:	5 % (25 °C)
Viscosity, kinematic	:	Not applicable
Solubility	:	Soluble in water. Water: ≥ 1000 g/l (20°C)
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	Not available
Vapour pressure at 50°C	:	Not available
Density	:	Not available
Relative density	:	Not available
Relative vapour density at 20°C	:	Not applicable
Particle size	:	< 1 mm 75 %

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

Bulk density : ≈ 1050 kg/m³

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

metals. reducing materials.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral)	:	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	:	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	:	Not classified (Based on available data, the classification criteria are not met)

Zinc sulfate monohydrate (7446-19-7)	
LD50 oral rat	1710 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male, Experimental value, Anhydrous form, Oral)

Copper sulfate pentahydrate (7758-99-8)	
LD50 oral rat	482 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Anhydrous form, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Anhydrous form, Dermal, 14 day(s))

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)
pH: ≈ 3 (≤ 4)

Manganese sulfate monohydrate (10034-96-5)	
pH	3 – 3.5 (5 %)

Zinc sulfate monohydrate (7446-19-7)	
pH	3.7 – 4.07 (Literature, 20 °C)

Copper sulfate pentahydrate (7758-99-8)	
pH	No data available in the literature

Serious eye damage/irritation : Causes serious eye damage.
pH: ≈ 3 (≤ 4)

Manganese sulfate monohydrate (10034-96-5)	
pH	3 – 3.5 (5 %)

Zinc sulfate monohydrate (7446-19-7)	
pH	3.7 – 4.07 (Literature, 20 °C)

Copper sulfate pentahydrate (7758-99-8)	
pH	No data available in the literature

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure : May cause damage to organs (brain) through prolonged or repeated exposure (if inhaled).

Manganese sulfate monohydrate (10034-96-5)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

Zinc sulfate monohydrate (7446-19-7)	
Viscosity, kinematic	Not applicable

Copper sulfate pentahydrate (7758-99-8)	
Viscosity, kinematic	Not applicable (solid)

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Toxic to aquatic life.
Hazardous to the aquatic environment, short–term (acute) : Very toxic to aquatic life.

Hazardous to the aquatic environment, long–term (chronic) : Very toxic to aquatic life with long lasting effects.
Not rapidly degradable

Manganese sulfate monohydrate (10034-96-5)	
LC50 - Fish [1]	33.8 mg/l (96 h, Pimephales promelas, Anhydrous form)
EC50 - Crustacea [1]	8.28 mg/l (48 h, Daphnia magna, Anhydrous form)

Zinc sulfate monohydrate (7446-19-7)	
LC50 - Fish [1]	0.33 – 0.78 mg/l (96 h, Pimephales promelas, Static system, Fresh water, Experimental value, Anhydrous form)
EC50 - Crustacea [1]	1.13 mg/l (48 h, Ceriodaphnia dubia, Literature study, Monohydrate)
EC50 72h - Algae [1]	3.73 mg/l (Selenastrum capricornutum, Literature study, Monohydrate)

Copper sulfate pentahydrate (7758-99-8)	
LC50 - Fish [1]	193 µg/l (96 h, Pimephales promelas, Flow-through system, Fresh water, Read-across, Anhydrous form)
EC50 - Crustacea [1]	0.117 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Anhydrous form)
ErC50 algae	0.047 mg/l (OECD 201: Alga, Growth Inhibition Test, 96 h, Chlamydomonas reinhardtii, Flow-through system, Fresh water, Experimental value, Anhydrous form)

12.2. Persistence and degradability

EPSO Profitop®	
Persistence and degradability	Not applicable for inorganic substances.

Manganese sulfate monohydrate (10034-96-5)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Zinc sulfate monohydrate (7446-19-7)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

Copper sulfate pentahydrate (7758-99-8)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

12.3. Bioaccumulative potential

EPSO Profitop®	
Bioaccumulative potential	Not applicable for inorganic substances.

Zinc sulfate monohydrate (7446-19-7)	
BCF - Other aquatic organisms [1]	38 – 28960 (28 day(s), Palaemon elegans, Semi-static system, Salt water, Read-across, Fresh weight)

Zinc sulfate monohydrate (7446-19-7)	
Bioaccumulative potential	Bioaccumable.

Copper sulfate pentahydrate (7758-99-8)	
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

Zinc sulfate monohydrate (7446-19-7)	
Ecology - soil	No (test)data on mobility of the substance available.

Copper sulfate pentahydrate (7758-99-8)	
Surface tension	No data available in the literature
Ecology - soil	No (test)data on mobility of the substance available. Toxic to flora.

12.5. Results of PBT and vPvB assessment

Component	
Zinc sulfate monohydrate (7446-19-7)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Copper sulfate pentahydrate (7758-99-8)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional waste regulation : Disposal must be done according to official regulations.

Waste treatment methods : Must follow special treatment according to local regulation. Do not discharge into drains or the environment. Do not dispose of with domestic waste. European waste catalogue. Disposal must be done according to official regulations.

Sewage disposal recommendations : Do not discharge into drains or the environment.

Product/Packaging disposal recommendations : Entrust the uncontaminated packaging to a licensed waste contractor.

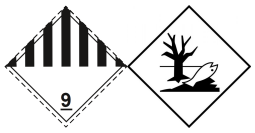
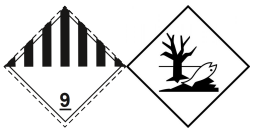
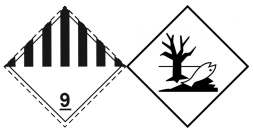
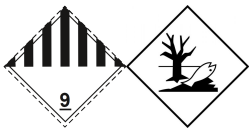
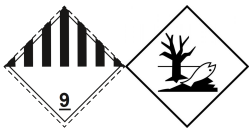
Ecology - waste materials : Recycle or dispose of in compliance with current legislation.

European List of Waste (LoW, EC 2000/532) : 02 01 08* - agrochemical waste containing dangerous substances

HP Code : HP5 - “Specific Target Organ Toxicity (STOT)/Aspiration Toxicity:” waste which can cause specific target organ toxicity either from a single or repeated exposure, or which cause acute toxic effects following aspiration.
HP4 - “Irritant – skin irritation and eye damage:” waste which on application can cause skin irritation or damage to the eye.
HP14 - “Ecotoxic:” waste which presents or may present immediate or delayed risks for one or more sectors of the environment

SECTION 14: Transport information

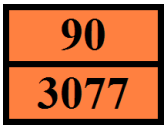
In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 3077	UN 3077	UN 3077	UN 3077	UN 3077
14.2. UN proper shipping name				
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulfate monohydrate ; copper sulfate, pentahydrate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulfate monohydrate ; copper sulfate, pentahydrate)	Environmentally hazardous substance, solid, n.o.s. (Zinc sulfate monohydrate ; copper sulfate, pentahydrate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulfate monohydrate ; copper sulfate, pentahydrate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulfate monohydrate ; copper sulfate, pentahydrate)
Transport document description				
UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulfate monohydrate ; copper sulfate, pentahydrate), 9, III, (-)	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulfate monohydrate ; copper sulfate, pentahydrate), 9, III, MARINE POLLUTANT	UN 3077 Environmentally hazardous substance, solid, n.o.s. (Zinc sulfate monohydrate ; copper sulfate, pentahydrate), 9, III	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulfate monohydrate ; copper sulfate, pentahydrate), 9, III	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulfate monohydrate ; copper sulfate, pentahydrate), 9, III
14.3. Transport hazard class(es)				
9	9	9	9	9
				
14.4. Packing group				
III	III	III	III	III
14.5. Environmental hazards				
Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes
No supplementary information available				

14.6. Special precautions for user

Overland transport

Classification code (ADR)	:	M7
Special provisions (ADR)	:	274, 335, 375, 601
Limited quantities (ADR)	:	5kg
Excepted quantities (ADR)	:	E1
Packing instructions (ADR)	:	P002, IBC08, LP02, R001
Special packing provisions (ADR)	:	PP12, B3
Mixed packing provisions (ADR)	:	MP10
Portable tank and bulk container instructions (ADR)	:	T1, BK1, BK2, BK3
Portable tank and bulk container special provisions (ADR)	:	TP33
Tank code (ADR)	:	SGAV, LGBV
Vehicle for tank carriage	:	AT
Transport category (ADR)	:	3
Special provisions for carriage - Packages (ADR)	:	V13
Special provisions for carriage - Bulk (ADR)	:	VC1, VC2
Special provisions for carriage - Loading, unloading and handling (ADR)	:	CV13
Hazard identification number (Kemler No.)	:	90

Orange plates	:	
Tunnel restriction code (ADR)	:	-
EAC code	:	2Z

Transport by sea

Special provisions (IMDG)	:	274, 335, 966, 967, 969
Limited quantities (IMDG)	:	5 kg
Excepted quantities (IMDG)	:	E1
Packing instructions (IMDG)	:	LP02, P002
Special packing provisions (IMDG)	:	PP12
IBC packing instructions (IMDG)	:	IBC08
IBC special provisions (IMDG)	:	B3
Tank instructions (IMDG)	:	BK1, BK2, BK3, T1
Tank special provisions (IMDG)	:	TP33
EmS-No. (Fire)	:	F-A
EmS-No. (Spillage)	:	S-F
Stowage category (IMDG)	:	A
Stowage and handling (IMDG)	:	SW23

Air transport

PCA Excepted quantities (IATA)	:	E1
PCA Limited quantities (IATA)	:	Y956
PCA limited quantity max net quantity (IATA)	:	30kgG
PCA packing instructions (IATA)	:	956
PCA max net quantity (IATA)	:	400kg
CAO packing instructions (IATA)	:	956
CAO max net quantity (IATA)	:	400kg
Special provisions (IATA)	:	A97, A158, A179, A197
ERG code (IATA)	:	9L

Inland waterway transport

Classification code (ADN)	:	M7
Special provisions (ADN)	:	274, 335, 375, 601
Limited quantities (ADN)	:	5 kg
Excepted quantities (ADN)	:	E1
Equipment required (ADN)	:	PP, A
Number of blue cones/lights (ADN)	:	0
Additional requirements/Remarks (ADN)	:	* Only in the molten state. ** For carriage in bulk see also 7.1.4.1. *** Only in the case of transport in bulk.

Rail transport

Classification code (RID)	:	M7
Special provisions (RID)	:	274, 335, 375, 601
Limited quantities (RID)	:	5kg
Excepted quantities (RID)	:	E1
Packing instructions (RID)	:	P002, IBC08, LP02, R001
Special packing provisions (RID)	:	PP12, B3
Mixed packing provisions (RID)	:	MP10
Portable tank and bulk container instructions (RID)	:	T1, BK1, BK2, BK3
Portable tank and bulk container special provisions (RID)	:	TP33
Tank codes for RID tanks (RID)	:	SGAV, LGBV
Transport category (RID)	:	3
Special provisions for carriage – Packages (RID)	:	W13
Special provisions for carriage – Bulk (RID)	:	VC1, VC2
Special provisions for carriage - Loading, unloading and handling (RID)	:	CW13, CW31
Colis express (express parcels) (RID)	:	CE11
Hazard identification number (RID)	:	90

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains no substance(s) listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.1.2. National regulations

Germany

Employment restrictions : Observe restrictions according Act on the Protection of Working Mothers (MuSchG).
Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG).

National regulations : Employment prohibitions for the protection of young people at work according to § 22 section 1(6) JArbSchG have to be observed.
Regulation (EC) No 2003/2003 of the European Parliament and of the Council of 13 October 2003 relating to fertilisers.

National Rules and Recommendations : TRGS 400: Risk Assessment for Activities involving Hazardous Substances.
TRGS 402: Identification and Assessment of the Risks from Activities involving Hazardous Substances: Inhalation Exposure.
TRGS 420: Process- and substance-specific criteria (VSK) for identifying and assessing inhalation exposure.
TRGS 510: Storage of hazardous substances in non-stationary containers.
TRGS 520: Construction and operation of collection points and temporary storage for small amounts of hazardous waste.
TRGS 900: Occupational Exposure Limits.

Water hazard class (WGK) : WGK 3, Highly hazardous to water (Classification according to AwSV, Annex 1).

Storage class (LGK, TRGS 510) : LGK 13 - Non-combustible solids.

Joint storage table :

LGK 1	LGK 2A	LGK 2B	LGK 3	LGK 4.1A
LGK 4.1B	LGK 4.2	LGK 4.3	LGK 5.1A	LGK 5.1B
LGK 5.1C	LGK 5.2	LGK 6.1A	LGK 6.1B	LGK 6.1C
LGK 6.1D	LGK 6.2	LGK 7	LGK 8A	LGK 8B
LGK 10	LGK 11	LGK 12	LGK 13	LGK 10-13

Joint storage not permitted for : LGK 1, LGK 6.2, LGK 7.

Joint storage with restrictions permitted for : LGK 4.1A, LGK 5.1C.
Joint storage permitted for : LGK 2A, LGK 2B, LGK 3, LGK 4.1B, LGK 4.2, LGK 4.3, LGK 5.1A, LGK 5.1B, LGK 5.2, LGK 6.1A, LGK 6.1B, LGK 6.1C, LGK 6.1D, LGK 8A, LGK 8B, LGK 10, LGK 11, LGK 12, LGK 13, LGK 10-13.
Hazardous Incident Ordinance (12. BImSchV) : Listed in the 12. BImSchV (Annex I) under: 1.3.1
- Quantity threshold for operational area under § 1 para. 1
  - Sentence 1 :100000 kg
  - Sentence 2 :200000 kg

Netherlands

ABM category : A(1) - highly toxic for aquatic organisms, may have longterm hazardous effects in aquatic environment
SZW-lijst van kankerverwekkende stoffen : Manganese sulfate monohydrate is listed
SZW-lijst van mutagene stoffen : Manganese sulfate monohydrate is listed
SZW-lijst van reprotoxische stoffen – Borstvoeding : None of the components are listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : None of the components are listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling : None of the components are listed

Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

Switzerland

Swiss National Regulations : Article 13 Order on the protection of maternity (RS 822.111.52):
Pregnant women and breastfeeding mothers cannot come into contact with this product (this substance/this preparation) when working except where it has been established, on the basis of a risk analysis performed in accordance with Art. 63 OLT 1 (RS 822.111), that there is no concrete threat to the health of the mother or baby or that said threat can be excluded thanks to the suitable protection measures taken.
Article 4, subparagraph 4 Order on the protection of young workers (OLT 5, RS 822.115) and Article 1, letter f Order of the DEFR on dangerous works for young workers (822.115.2):
Young workers undergoing initial professional training cannot work with this product (this substance/this preparation) except where envisaged in the order of professional training to achieve the training purposes and if the training plan conditions and applicable age limits are respected. Young workers who do not undergo initial professional training cannot work with this product (this substance/this preparation). Workers of either sex aged under 18 years old are considered as young.
Observe the Chemical Risk Reduction Ordinance (SR 814.81).
Storage class (LK) : LK 6.1 - Toxic materials
Accident Ordinance (StFV, SR 814.012) : Annex 1, number 4
Threshold quantity: 2000 kg

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Indication of changes

Section	Changed item	Change	Comments
	Revision date	Modified	
	Supersedes version of	Modified	

Full text of H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1

Full text of H- and EUH-statements:	
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2

The classification complies with : ATP 12

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.