SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878

EasyStart® TE-Max 11-48-0 BS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.10.2026	M0848	Date of first issue: 21.10.2026

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

1.1 Product identifier

Trade name : EasyStart® TE-Max 11-48-0 BS

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

Use of the Substance/Mixture : Fertiliser

1.3 Details of the supplier of the safety data sheet

Company : COMPO EXPERT GmbH
Krögerweg 10
D-48155 Münster

Telephone : +49 (0) 251 29 79 81 – 000

Telefax : +49 (0) 251 29 79 81 - 111

E-mail address of person responsible for the SDS : productsafety@compo-expert.com

1.4 Emergency telephone

GBK GmbH - Global Regulatory Compliance - 24h
Telephone:+49 (0) 6132 - 84463

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)

Hazard Statements : H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements :

Prevention:

P273 Avoid release to the environment.

Disposal:

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

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Inorganic fertiliser

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Ferrous sulfate monohydrate	17375-41-6 231-753-5 026-003-00-7 01-2119513203-57-XXXX	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Irrit. 2; H319 --- Acute toxicity estimate Acute oral toxicity: 300,03 mg/kg	>= 1 - < 10
zinc oxide	1314-13-2 215-222-5 030-013-00-7 01-2119463881-32-XXXX	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 1 - < 2,5
ammonium nitrate	6484-52-2 229-347-8 01-2119490981-27-0050	Ox. Sol. 3; H272 Eye Irrit. 2; H319	>= 1 - < 10
disodium tetraborate pentahydrate	12179-04-3 215-540-4 005-011-02-9 01-2119490790-32-XXXX	Eye Irrit. 2; H319 Repr. 1B; H360FD	>= 0,1 - < 0,3
Substances with a workplace exposure limit :			
Manganese sulfate	10034-96-5 232-089-9	Eye Dam. 1; H318 STOT RE 2; H373	>= 0,25 - < 1

	01-2119456624-35-XXXX	Aquatic Chronic 2; H411	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
If potential for exposure exists refer to Section 8 for specific personal protective equipment.

If inhaled : If breathed in, move person into fresh air.
If symptoms persist, call a physician.

In case of skin contact : Wash off with soap and water.

In case of eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If eye irritation persists, consult a specialist.

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:
Methaemoglobinemia

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water
Dry chemical
Water mist
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing : High volume water jet

media	Carbon dioxide (CO2) Foam Sand

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting	:	Thermal decomposition can lead to release of irritating gases and vapours. Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Nitrogen oxides (NOx) Carbon monoxide Carbon oxides Oxides of phosphorus Sulphur oxides

5.3 Advice for firefighters

Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. The product itself does not burn.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Use personal protective equipment. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before re-use. Avoid breathing dust. For personal protection see section 8. For disposal considerations see section 13.

6.2 Environmental precautions

Environmental precautions	:	Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Pick up and transfer to properly labelled containers.

6.4 Reference to other sections

For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Avoid contact with skin and eyes. Wear personal protective equipment. Keep away from combustible material. Keep away from heat and sources of ignition. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.
Advice on protection against fire and explosion	:	Provide appropriate exhaust ventilation at places where dust is formed. The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard.
Hygiene measures	:	Keep away from food, drink and animal feedingstuffs. Wash hands before eating, drinking, or smoking. Wash hands before breaks and at the end of workday.
Dust explosion class	:	No data available

7.2 Conditions for safe storage, including any incompatibilities

Further information on storage conditions	:	Keep away from sources of ignition - No smoking. Keep away from direct sunlight. Protect from moisture. Protect from contamination.
Advice on common storage	:	Keep away from combustible materials. Keep away from strong acids. Keep away from strong bases. Keep away from food, drink and animal feedingstuffs.
Storage class (TRGS 510)	:	13
Further information on storage stability	:	Protect from frost, heat and sunlight.

7.3 Specific end use(s)

Specific use(s)	:	Not relevant

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
zinc oxide	1314-13-2	MAK (measured as the alveolate fraction)	0,1 mg/m3	DE DFG MAK
	Further information: Zinc chloride: peak limit I(1), Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed			
		MAK (inhalable fraction)	2 mg/m3	DE DFG MAK
	Further information: Zinc chloride: peak limit I(1), Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed			
Manganese sulfate	10034-96-5	AGW (Inhalable fraction)	0,2 mg/m3 (Manganese)	DE TRGS 900
	Peak-limit: excursion factor (category): 8;(II)			
	Further information: For Permanganates an excursion factor of 1(II) applies., When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
		AGW (Alveolate fraction)	0,02 mg/m3 (Manganese)	DE TRGS 900
	Peak-limit: excursion factor (category): 8;(II)			
	Further information: For Permanganates an excursion factor of 1(II) applies., When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
		MAK (measured as the alveolate fraction)	0,02 mg/m3	DE DFG MAK
	Further information: Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed, Permanganates: Peak limitation category I(1)			
		MAK (inhalable fraction)	0,2 mg/m3	DE DFG MAK
	Further information: Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed, Permanganates: Peak limitation category I(1)			
		TWA (inhalable fraction)	0,2 mg/m3 (Manganese)	2017/164/EU
	Further information: Indicative			
		TWA (Respirable fraction)	0,05 mg/m3 (Manganese)	2017/164/EU
	Further information: Indicative			
Lubricating oils; Baseoil — un-specified	74869-22-0	AGW (Vapour and aerosols)	5 mg/m3	DE TRGS 900
	Peak-limit: excursion factor (category): 4;(II)			

	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
disodium tetraborate pentahydrate	12179-04-3	MAK (inhalable fraction)	5 mg/m3	DE DFG MAK
	Further information: Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed			
		AGW (Inhalable fraction)	0,5 mg/m3 (Borate)	DE TRGS 900
	Peak-limit: excursion factor (category): 2;(I)			
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Routes of exposure	Potential health effects	Value
ammonium sulphate	Workers	Skin contact	Long-term systemic effects	42,667 mg/kg
	Workers	Inhalation	Long-term systemic effects	11,167 mg/m3
	Consumer use	Oral	Long-term systemic effects	6,4 mg/kg
	Consumer use	Skin contact	Long-term systemic effects	12,8 mg/kg
	Consumer use	Inhalation	Long-term systemic effects	1,667 mg/kg
ammonium nitrate	Workers	Inhalation	Long-term systemic effects	36 mg/m3
	Workers	Skin contact	Long-term systemic effects	5,12 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	2,56 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	8,9 mg/m3
	Consumers	Skin contact, Ingestion	Long-term systemic effects	2,56 mg/kg bw/day
disodium tetraborate pentahydrate	Workers	Inhalation	Long-term local effects	17,04 mg/m3
	Workers	Inhalation	Acute local effects	17,04 mg/m3
	Workers	Inhalation	Long-term systemic effects	9,8 mg/m3
	Consumers	Oral	Acute systemic effects	1,15 mg/kg bw/day
	Consumers	Inhalation	Long-term local effects	17,04 mg/m3
	Consumers	Oral	Long-term systemic effects	0,79 mg/m3
	Consumers	Inhalation	Long-term systemic effects	4,9 mg/m3
	Workers	Skin contact	Long-term systemic effects	316,4 mg/kg bw/day

	Consumers	Inhalation	Acute local effects	17,04 mg/m3
	Consumers	Skin contact	Long-term systemic effects	231,8 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
ammonium sulphate	Fresh water	0,312 mg/l
	Marine water	0,0312 mg/l
	Intermittent use/release	0,53 mg/l
	Soil	62,6 mg/kg
		16,12 mg/l
	Fresh water	0,063 mg/kg
zinc oxide	Sewage treatment plant	0,12 mg/l
	Fresh water	0,0245 mg/l
	Marine water	0,0096 mg/l
	Fresh water sediment	182,8 mg/kg dry weight (d.w.)
	Marine sediment	201,9 mg/kg dry weight (d.w.)
ammonium nitrate	Sewage treatment plant	16,9 mg/l
	Fresh water	16 mg/l
	Marine water	15,9 mg/l
	Fresh water sediment	77,7 mg/kg dry weight (d.w.)
	Marine sediment	77,2 mg/kg dry weight (d.w.)
	Air	
	Remarks:This information is not available.	
	Soil	
	Remarks:This information is not available.	
disodium tetraborate pentahydrate	Fresh water	2,9 mg/l
	Marine water	2,9 mg/l
	Soil	0,05 mg/kg
	Sewage treatment plant	10 mg/l

8.2 Exposure controls

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection : Safety glasses with side-shields conforming to EN166

Hand protection
- Material : Gloves
- Guideline : Equipment should conform to EN 374

Remarks : As the product is a mixture of several substances, the durability of the glove materials cannot be calculated in advance and has to be tested before use.

Skin and body protection : Long sleeved clothing

Respiratory protection	:	In the case of dust or aerosol formation use respirator with an approved filter. Equipment should conform to EN 14387
Filter type	:	Filter type P
Protective measures	:	Handle in accordance with good industrial hygiene and safety practice. Wash contaminated clothing before re-use.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	solid
Color	:	beige
Odor	:	very faint
Melting point/range	:	not determined
Boiling point/boiling range	:	not determined
Flammability	:	Will not burn
Upper explosion limit / Upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Flash point	:	Not applicable
Autoignition temperature	:	No data available
Decomposition temperature	:	> 130 °C
pH	:	4,5 - 5,5 (20 °C) Concentration: 100 g/l

Solubility(ies)		
Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	Not applicable
Bulk density	:	780 - 980 kg/m3
Particle characteristics		
Particle Size Distribution	:	D50 = 1,2 mm Measurement technique: Optoelectronic measurement method

9.2 Other information

Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Self-ignition	:	not auto-flammable
Minimum explosible dust concentration	:	No data available
Dust explosion class	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	None reasonably foreseeable. Heating can release hazardous gases.

10.4 Conditions to avoid

Conditions to avoid	:	Hot surface(s) Direct sources of heat.

10.5 Incompatible materials

Materials to avoid : Strong bases
Organic materials
Powdered metals

10.6 Hazardous decomposition products

Hazardous decomposition products : Nitrogen oxides (NOx)
Oxides of phosphorus
Sulphur oxides
ammonia

SECTION 11: Toxicological information

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

Acute toxicity

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

Product:

Acute oral toxicity : Acute toxicity estimate: > 2.000 mg/kg
Method: Calculation method

Components:

Ferrous sulfate monohydrate:

Acute oral toxicity : LD50 (Rat): 300 - 2.000 mg/kg
Method: OECD Test Guideline 423
GLP: yes
Assessment: Harmful if swallowed.
Remarks: Based on data from similar materials

Acute inhalation toxicity : (Rat): > 1,1 mg/l
Exposure time: 4,0 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: no
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Based on data from similar materials

Acute dermal toxicity : > 2.000 mg/kg
Method: OECD Test Guideline 402
GLP: no
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

zinc oxide:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 5,7 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Assessment: The substance or mixture has no acute dermal toxicity

ammonium nitrate:

Acute oral toxicity : LD50 (Rat): = 2.950 mg/kg bw
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Data waiving: Study scientifically not necessary.

Acute dermal toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

disodium tetraborate pentahydrate:

Acute oral toxicity : LD50 (Rat): > 2.500 mg/kg
Method: OECD Test Guideline 401
GLP: yes
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: no
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg
Method: US EPA Test Guideline FIFRA
GLP: yes
Assessment: The substance or mixture has no acute dermal

toxicity

Manganese sulfate:

Acute oral toxicity	:	Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	:	Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

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

Components:

Ferrous sulfate monohydrate:

Exposure time	:	3 min
Assessment	:	Irritating to skin.
Method	:	OECD Test Guideline 404
GLP	:	yes
Remarks	:	Based on data from similar materials

zinc oxide:

Assessment	:	No skin irritation

ammonium nitrate:

Species	:	Rabbit
Exposure time	:	4 h
Assessment	:	No skin irritation
Method	:	OECD Test Guideline 404

disodium tetraborate pentahydrate:

Species	:	Rabbit
Exposure time	:	4 h
Assessment	:	No skin irritation
Method	:	US EPA Test Guideline FIFRA
Result	:	Not classified due to data which are conclusive although insufficient for classification.
GLP	:	yes

Manganese sulfate:

Assessment	:	No skin irritation

Serious eye damage/eye irritation

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

Components:

Ferrous sulfate monohydrate:

Assessment	:	Irritating to eyes.
Method	:	OECD Test Guideline 405
GLP	:	yes
Remarks	:	Based on data from similar materials

zinc oxide:

Assessment	:	No eye irritation

ammonium nitrate:

Species	:	Rabbit
Exposure time	:	24 h
Assessment	:	Irritating to eyes.
Method	:	OECD Test Guideline 405

disodium tetraborate pentahydrate:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Irritating to eyes.

Manganese sulfate:

Assessment	:	Risk of serious damage to eyes.

Respiratory or skin sensitization

Skin sensitization

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

Respiratory sensitization

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

Components:

Ferrous sulfate monohydrate:

Assessment	:	Does not cause skin sensitisation.
Assessment	:	Does not cause respiratory sensitisation.

zinc oxide:

Assessment	:	Does not cause skin sensitisation.
Assessment	:	Does not cause respiratory sensitisation.

ammonium nitrate:

Species	:	Mouse

Assessment	:	Does not cause skin sensitisation.
Method	:	OECD Test Guideline 429
Remarks	:	The product was not tested. The statement was derived from products of similar structure and composition.
Assessment	:	Does not cause respiratory sensitisation.

disodium tetraborate pentahydrate:

Assessment	:	Does not cause skin sensitisation.
Assessment	:	Does not cause respiratory sensitisation.

Manganese sulfate:

Assessment	:	Does not cause skin sensitisation.
Assessment	:	Does not cause respiratory sensitisation.

Germ cell mutagenicity

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

Components:

Ferrous sulfate monohydrate:

Germ cell mutagenicity- Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

zinc oxide:

Germ cell mutagenicity- Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

ammonium nitrate:

Genotoxicity in vitro	:	Method: OECD Test Guideline 471 Result: negative
Germ cell mutagenicity- Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

disodium tetraborate pentahydrate:

Genotoxicity in vitro	:	Remarks: In vitro tests did not show mutagenic effects Based on data from similar materials
Germ cell mutagenicity- Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

Manganese sulfate:

Germ cell mutagenicity- Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

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

Components:

Ferrous sulfate monohydrate:

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

zinc oxide:

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

ammonium nitrate:

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

disodium tetraborate pentahydrate:

Remarks	:	Animal testing did not show any carcinogenic effects. Based on data from similar materials
Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

Manganese sulfate:

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

Reproductive toxicity

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

Components:

Ferrous sulfate monohydrate:

Reproductive toxicity - Assessment	:	No toxicity to reproduction
		No effects on or via lactation

zinc oxide:

Reproductive toxicity - Assessment	:	No toxicity to reproduction
		No effects on or via lactation

ammonium nitrate:

Effects on fetal development : Teratogenicity: NOAEL: 920 mg/kg body weight
Developmental Toxicity: NOAEL: 920 mg/kg body weight
Result: No adverse effects
Remarks: Based on data from similar materials

Reproductive toxicity - Assessment : No toxicity to reproduction

No effects on or via lactation

disodium tetraborate pentahydrate:

Effects on fertility : Test Type: reproductive and developmental toxicity study
Species: Rat
Application Route: Oral
Fertility: NOAEL: = 17,5 mg B/kg bw/day
Result: Embryotoxic effects and adverse effects on the offspring were detected.
Remarks: Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

Effects on fetal development : Developmental Toxicity: NOAEL: 9,6 mg B/kg bw/day
Symptoms: Skeletal and visceral variations, Reduced foetal weight

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

No effects on or via lactation

Manganese sulfate:

Reproductive toxicity - Assessment : No toxicity to reproduction

No effects on or via lactation

STOT-single exposure

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

Components:

Ferrous sulfate monohydrate:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

zinc oxide:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

ammonium nitrate:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

disodium tetraborate pentahydrate:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

Manganese sulfate:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure

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

Components:

Ferrous sulfate monohydrate:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

zinc oxide:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

ammonium nitrate:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

disodium tetraborate pentahydrate:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Manganese sulfate:

Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Repeated dose toxicity

Components:

ammonium nitrate:

Species : Rat
NOAEL : > 1.500 mg/kg

Application Route	:	Oral
Exposure time	:	28 d
Species	:	Rat
NOAEL	:	= 256 mg/kg
Application Route	:	Oral
Exposure time	:	52 w
Method	:	OECD Test Guideline 453
Species	:	Rat
NOAEL	:	>= 185 mg/kg
Application Route	:	inhalation (dust/mist/fume)
Exposure time	:	14 d
Method	:	OECD Test Guideline 412

Aspiration hazard

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

Components:

Ferrous sulfate monohydrate:

No aspiration toxicity classification

zinc oxide:

No aspiration toxicity classification

ammonium nitrate:

No aspiration toxicity classification

disodium tetraborate pentahydrate:

No aspiration toxicity classification

Manganese sulfate:

No aspiration toxicity classification

11.2 Information on other hazards

Endocrine disrupting properties

Not classified due to lack of data.

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Ferrous sulfate monohydrate:

Toxicity to fish	:	Remarks: Data waiving: Study scientifically not necessary.
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: Data waiving: Study scientifically not necessary.
Toxicity to algae/aquatic plants	:	Remarks: Data waiving: Study scientifically not necessary.

zinc oxide:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): = 1,793 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): = 1 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): = 7,25 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 GLP: yes
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,2 mg/l Exposure time: 30 d Species: Oncorhynchus mykiss (rainbow trout) Method: OECD Test Guideline 215
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	EC50: = 0,08 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

Ecotoxicology Assessment

Acute aquatic toxicity	:	Very toxic to aquatic life.
Chronic aquatic toxicity	:	Very toxic to aquatic life with long lasting effects.

ammonium nitrate:

Toxicity to fish	:	LC50 (Cyprinus carpio (Carp)): > 100 mg/l Exposure time: 48 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Ceriodaphnia sp. (Water Flea)): = 340 mg/l Exposure time: 48 h Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 1.048 mg/l Exposure time: 72 h GLP: yes
Toxicity to microorganisms	:	EC50 (activated sludge): 1.000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209

disodium tetraborate pentahydrate:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): = 79,7 mg B/kg Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Ceriodaphnia dubia (water flea)): = 91 mg B/kg
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): = 52,4 mg B/kg Exposure time: 72 h GLP: yes
Toxicity to fish (Chronic toxicity)	:	NOEC: 6,4 mg B/kg Species: Danio rerio (zebra fish)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: = 14,2 mg B/kg Species: Daphnia magna (Water flea)

Manganese sulfate:

Toxicity to fish (Chronic toxicity)	:	NOEC: 4.496,89 µg/l Exposure time: 30 d Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 10 µg/l Exposure time: 20 d

12.2 Persistence and degradability

Components:

ammonium nitrate:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Components:

Ferrous sulfate monohydrate:

Bioaccumulation : Remarks: Data waiving: Study scientifically not necessary.

zinc oxide:

Bioaccumulation : Remarks: Data waiving: Study scientifically not necessary.

ammonium nitrate:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.
Data waiving: Study scientifically not necessary.

Partition coefficient: n-octanol/water : log Pow: -3,1

disodium tetraborate pentahydrate:

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: -1,53 (22 °C)
Method: OECD Test Guideline 107

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Components:

Ferrous sulfate monohydrate:

Assessment : Substance is not persistent, bioaccumulative, and toxic (PBT). Substance is not very persistent and very bioaccumulative (vPvB).

zinc oxide:

Assessment : Substance is not persistent, bioaccumulative, and toxic (PBT). Substance is not very persistent and very bioaccumulative (vPvB).

ammonium nitrate:

Assessment : Substance is not persistent, bioaccumulative, and toxic (PBT). Substance is not very persistent and very bioaccumulative (vPvB).

disodium tetraborate pentahydrate:

Assessment : Substance is not persistent, bioaccumulative, and toxic (PBT). Substance is not very persistent and very bioaccumulative (vPvB).
Remarks: Not applicable

Manganese sulfate:

Assessment : Substance is not persistent, bioaccumulative, and toxic (PBT). Substance is not very persistent and very bioaccumulative (vPvB).

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Do not flush into surface water or sanitary sewer system.
Dispose of in accordance with local regulations.
Waste codes should be assigned by the user based on the application for which the product was used.

Contaminated packaging : Empty remaining contents.
Empty containers retain residue and can be dangerous.
Empty containers should be taken to an approved waste han-

dling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number or ID number

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.2 UN proper shipping name

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.3 Transport hazard class(es)

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA	:	Not regulated as a dangerous good

14.4 Packing group

ADN	:	Not regulated as a dangerous good
ADR	:	Not regulated as a dangerous good
RID	:	Not regulated as a dangerous good
IMDG	:	Not regulated as a dangerous good
IATA (Cargo)	:	Not regulated as a dangerous good
IATA (Passenger)	:	Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Regulatory basis	:	IMSBC Code
MHB	:	no
IMSBC Group	:	C

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Not applicable
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	disodium tetraborate pentahydrate
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors

This product is regulated by Regulation (EU) 2019/1148: all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.	ammonium nitrate (ANNEX I)
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	Not applicable

Water hazard class (Germany)	:	WGK 1 slightly hazardous to water Classification according to AwSV, Annex 1 (5.2)

15.2 Chemical Safety Assessment

Not relevant

SECTION 16: Other information

Full text of H-Statements

H272	:	May intensify fire; oxidizer.
H302	:	Harmful if swallowed.
H315	:	Causes skin irritation.
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.
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.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Ox. Sol.	:	Oxidizing solids
Repr.	:	Reproductive toxicity
Skin Irrit.	:	Skin irritation
STOT RE	:	Specific target organ toxicity - repeated exposure
2017/164/EU	:	Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values
DE DFG MAK	:	Germany. MAK BAT Annex IIa
DE TRGS 900	:	Germany. TRGS 900 - Occupational exposure limit values.
2017/164/EU / TWA	:	Limit Value - eight hours
DE DFG MAK / MAK	:	MAK value
DE TRGS 900 / AGW	:	Time Weighted Average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; BGW - Biological Limit Values; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardization; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organization for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Con-

centration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); LSPN - List of Hazardous Notified Substances (Chile); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:		**Classification procedure:**
Aquatic Chronic 3	H412	Calculation method

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.

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