

SAFETY DATA SHEET

according to Regulation 1907/2006 amended by
2020/878/EU

Product name: **NPK 12:12:17 + 2 % MgO + 14 % S + 0.02 % B + 0.01 % Zn (SOP)**
Creation date: **4.8.2020** · Revision: **24.2.2023** · Version: 1

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name

NPK 12:12:17 + 2 % MgO + 14 % S + 0.02 % B + 0.01 % Zn (SOP)

Product code

[ES NPK 12:12:17 (SOP) EZ.var II]



chemius.net/Pnb82

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

Relevant identified uses

MINERAL FERTILISER (PFC 1(C)(I)(a)(ii))

NPK (Mg,S) complex fertiliser 10-10-20 (+2+22,5)/10-4,4-16,6 (+1,2+9) with micro-nutrients.

Uses advised against

No information.

1.3. Details of the supplier of the safety data sheet

Manufacturer

ELIXIR ZORKA-MINERALNA ĐUBRIVA DOO in cooperation with ELIXIR PRAHOVO DOO

Address: Hajduk Veljkova 1, 15000 Šabac, Serbia

Phone: +381 15 352 707

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Only Representative

BENS consulting d.o.o.

Address: Bakovniška ulica 7, 1241 Kamnik, Slovenia

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Point of contact for safety info: Simona Miklavčič

1.4. Emergency telephone number

112

+381 15 352 707

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

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

According to the regulation, the product is not classified as hazardous.

2.2 Label elements

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

Pictograms not applicable according to Regulation 1272/2008.

2.2.2. Contains:

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2.2.3. Special provisions

Special hazards are not known or expected.

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2.3. Other hazards

The substances in the mixture are not classified as persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB).

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

For mixtures see 3.2.

3.2. Mixtures

Name	CAS EC Index	%	Classification according to Regulation (EC) No 1272/2008 (CLP)	Specific Conc. Limits	REACH Registration No.
ammonium sulphate	7783-20-2 231-984-1 -	34-44	not classified		01-2119455044-46
ammonium dihydrogenorthophosphate	7722-76-1 231-764-5 -	27-37	not classified		01-2119488166-29
potassium sulfate	7778-80-5 231-915-5 -	25-35	not classified		01-2119489441-34
magnesium oxide	1309-48-4 215-171-9 -	2,5-3,5	not classified		-
colemanite	12291-65-5 602-907-2 -	<0,5	not classified		-
zinc oxide	1314-13-2 215-222-5 030-013-00-7	<0,1	Aquatic Acute 1; H400 Aquatic Chronic 1; H410		01-2119463881-32

SECTION 4. FIRST AID MEASURES

4.1. Description of first aid measures

General notes

When in doubt or if feeling unwell seek medical assistance. Show the safety data sheet and label to the physician. Never give anything by mouth to an unconscious person. Place patient in recovery position and ensure airway patency.

Following inhalation

Remove patient to fresh air - move out of dangerous area. If symptoms develop and persist, seek medical attention. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Following skin contact

Take off all contaminated clothing. Wash affected skin areas thoroughly with plenty of water and soap. If symptoms develop and persist, seek medical attention.

Following eye contact

Immediately flush eyes with running water, keeping eyelids apart. Seek medical help.

Following ingestion

Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Do not induce vomiting! In case of doubt or if feeling unwell seek medical help. Show the physician the safety data sheet or label.

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

Inhalation

Breathing dust can irritate the respiratory tract.
Coughing, sneezing, nasal discharge, labored breathing.

Skin contact

Contact with skin may cause irritation (redness, itching).
Powder can cause localised skin irritation in folds of the skin or under tight clothing.

Eye contact

Contact with eyes can cause irritation (redness, tearing, pain).
Dust irritates the eyes (by mechanical means).

Ingestion

May cause abdominal discomfort.
May cause nausea/vomiting and diarrhea.

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

Treat symptomatically. Watch for pulmonary edema, which may develop in serious cases of poisoning even after 24-48 hours.

SECTION 5. FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

Water spray.

Unsuitable extinguishing media

Do not use chemical agents (CCl₄, CO₂, foam, powder) sand or water vapor.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

In case of a fire toxic gases can be generated; do not inhale gases/smoke.
Ammonia (NH₃).
Chlorine.
Hydrogen chloride (HCl).

5.3. Advice for firefighters

Protective actions

Extinguish the fire from where the wind blows. Keep adjacent containers cool by spraying them with water. Prevent spillage from the containers and place them in a safe place, if this does not endanger your health. In case of fire or heating do not breathe fumes/vapours.

Special protective equipment for firefighters

Firefighters should wear appropriate protective clothing for firefighters (including helmets, protective boots and gloves) (EN 469) and self-contained breathing apparatus (SCBA) with a full face-piece (EN 137).

Additional information

Contaminated firefighting water and fire residues must be disposed of in accordance with the local regulations.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment

Use personal protective equipment (Section 8).

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Emergency procedures

Ensure adequate ventilation. Avoid dust generation. No action shall be taken involving any personal risk or without suitable training. Avoid breathing dust. Avoid contact with skin, eyes and clothing.

6.1.2. For emergency responders

Use personal protective equipment.

6.2. Environmental precautions

Mechanical (with overlapping plastic film) to prevent dispersal in the environment. Do not allow product to reach water/drains/sewage systems or permeable soil. In case of release into the environment, inform the relevant authorities.

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

Prevent spillage - close holes on damaged container.

6.3.2. For cleaning up

Prevent dusting. Take up mechanically and collect in suitable container and dispose according to current regulations. Dispose in accordance with applicable regulations (see Section 13).

6.3.3. Other information

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6.4. Reference to other sections

See also Sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for safe handling

7.1.1. Protective measures

Measures to prevent fire

Ensure adequate ventilation. Dust and air can form explosive mixtures.

Measures to prevent aerosol and dust generation

Prevent dusting. Ensure adequate ventilation.

Measures to protect the environment

Avoid release to the environment.

7.1.2. Advice on general occupational hygiene

Do not eat, drink or smoke while working. Do not breathe dust. Use good personal hygiene practices – wash hands at breaks and when done working with material. Avoid contact with skin, eyes and clothes.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1. Technical measures and storage conditions

Store in accordance with local regulations. Keep in a cool, dry and well ventilated place. Keep away from moisture and water. Protect from direct sunlight. Keep away from food, drink and animal feeding stuffs. Keep unauthorized personnel away.

7.2.2. Packaging materials

Store only in original container. PE, PP/PE

7.2.3. Requirements for storage rooms and vessels

Close opened containers after use. Put the containers upright to prevent from leaking. Do not store in unlabelled containers.

7.2.4. Storage class

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7.2.5. Further information on storage conditions

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7.3. Specific end use(s)

Recommendations

Detailed instructions / recommendations for use are listed on the label on the package.

Industrial sector specific solutions

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limit values

Name (CAS)	Limit values		Short-term exposure limit		Remarks	Biological Tolerance Values
	ml/m ³ (ppm)	mg/m ³	ml/m ³ (ppm)	mg/m ³		
Magnesium oxide (as Mg) inhalable dust (1309-48-4)		10				
Magnesium oxide (as Mg) fume and respirable dust (1309-48-4)		4				
Product		4			dust - alveolar fraction	
Product		10			dust - inhalable fraction	

8.1.2. Information on monitoring procedures

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. BS EN 482:2021 Workplace exposure. Procedures for the determination of the concentration of chemical agents. Basic performance requirements.

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8.1.3. DNEL/DMEL values

For components

Name	Type	Exposure route	Exposure frequency	Value	Remark
ammonium sulphate (7783-20-2)	Worker	dermal	long term (systemic effects)	42,667 mg/kg	
ammonium sulphate (7783-20-2)	Worker	inhalation	long term (systemic effects)	11,167 mg/m ³	
ammonium sulphate (7783-20-2)	Consumer	dermal	long term (systemic effects)	12,8 mg/kg	
ammonium sulphate (7783-20-2)	Consumer	inhalation	long term (systemic effects)	1,667 mg/m ³	
ammonium sulphate (7783-20-2)	Consumer	oral	long term (systemic effects)	6,4 mg/kg	
ammonium dihydrogenorthophosphate (7722-76-1)	Worker	dermal	long term (systemic effects)	34,7 mg/kg	
ammonium dihydrogenorthophosphate (7722-76-1)	Worker	inhalation	long term (systemic effects)	6,1 mg/m ³	
ammonium dihydrogenorthophosphate (7722-76-1)	Consumer	dermal	long term (systemic effects)	20,8 mg/kg	
ammonium dihydrogenorthophosphate (7722-76-1)	Consumer	inhalation	long term (systemic effects)	1,8 mg/m ³	
ammonium dihydrogenorthophosphate (7722-76-1)	Consumer	oral	long term (systemic effects)	2,1 mg/kg	
potassium sulfate (7778-80-5)	Worker	inhalation	long term (systemic effects)	37,6 mg/m ³	
potassium sulfate (7778-80-5)	Worker	dermal	long term (systemic effects)	21,3 mg/kg bw/day	
potassium sulfate (7778-80-5)	Consumer	inhalation	long term (systemic effects)	11,1 mg/kg	
potassium sulfate (7778-80-5)	Consumer	dermal	long term (systemic effects)	12,8 mg/kg bw/day	
potassium sulfate (7778-80-5)	Consumer	oral	long term (systemic effects)	128 mg/kg bw/day	
zinc oxide (1314-13-2)	Worker	inhalation	long term (systemic effects)	5 mg/m ³	
zinc oxide (1314-13-2)	Worker	inhalation	long term (local effects)	0,5 mg/m ³	
zinc oxide (1314-13-2)	Worker	dermal	long term (systemic effects)	83 mg/kg bw/day	
zinc oxide (1314-13-2)	Consumer	inhalation	long term (systemic effects)	2,5 mg/m ³	
zinc oxide (1314-13-2)	Consumer	dermal	long term (systemic effects)	83 mg/kg bw/day	
zinc oxide (1314-13-2)	Consumer	oral	long term (systemic effects)	0,83 mg/kg bw/day	

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8.1.4. PNEC values

For components

Name	Exposure route	Value	Remark
ammonium sulphate (7783-20-2)	fresh water	0,312 mg/L	
ammonium sulphate (7783-20-2)	marine water	0,0312 mg/L	
ammonium sulphate (7783-20-2)	water, intermittent release	0,53 mg/L	
ammonium sulphate (7783-20-2)	fresh water sediment	0,063 mg/kg	
ammonium sulphate (7783-20-2)	soil	62,6 mg/kg	
ammonium sulphate (7783-20-2)	water treatment plant	16,18 mg/kg	
ammonium dihydrogenorthophosphate (7722-76-1)	fresh water	1,7 mg/L	
ammonium dihydrogenorthophosphate (7722-76-1)	marine water	0,17 mg/L	
ammonium dihydrogenorthophosphate (7722-76-1)	water, intermittent release	17 mg/L	
ammonium dihydrogenorthophosphate (7722-76-1)	water treatment plant	10 mg/L	
potassium sulfate (7778-80-5)	fresh water	0,68 mg/L	
potassium sulfate (7778-80-5)	water, intermittent release	6,8 mg/L	fresh water
potassium sulfate (7778-80-5)	marine water	0,068 mg/L	
potassium sulfate (7778-80-5)	water treatment plant	10 mg/L	
zinc oxide (1314-13-2)	fresh water	20,6 µg/l	
zinc oxide (1314-13-2)	marine water	6,1 µg/l	
zinc oxide (1314-13-2)	water treatment plant	100 µg/l	
zinc oxide (1314-13-2)	fresh water sediment	117,8 mg/kg	dry weight
zinc oxide (1314-13-2)	marine water sediment	56,5 mg/kg	dry weight
zinc oxide (1314-13-2)	soil	35,6 mg/kg	dry weight

8.2. Exposure controls

8.2.1. Appropriate engineering control

Substance/mixture related measures to prevent exposure during identified uses

Use good personal hygiene practices – wash hands at breaks and when done working with material. Do not breathe dust. Do not eat, drink or smoke while working. Avoid contact with skin, eyes and clothes.

Organisational measures to prevent exposure

Remove all contaminated clothes immediately and wash them before reuse.

Technical measures to prevent exposure

Provide good ventilation and local exhaust in areas with increased concentration. Keep away from food, drink and animal feeding stuffs.

8.2.2. Personal protective equipment

Eye and face protection

No requirements under normal use conditions. At strong dust raising wear tightly sealed safety glasses (EN 166).

Hand protection

No requirements under normal use conditions. In case of prolonged exposure, wear protective gloves (EN 374). (material: leather, rubber)

Skin protection

No requirements under normal use conditions. With excessive exposure wear protective working clothing (overalls and boots). Cotton protective clothing and shoes that cover the entire foot (EN ISO 20345).

Respiratory protection

Not needed under normal use and adequate ventilation. In case of high dust concentrations use a dust protection mask (EN 136) with filter P2 (EN 143). 'High/elevated concentrations' means that the occupational exposure limit values have been exceeded.

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Thermal hazards

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8.2.3. Environmental exposure controls

Technical measures to prevent exposure

Do not allow product to reach drains, sewage systems or ground water.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

-	Physical state:	solid; granules
-	Colour:	blue
-	Odour:	odourless

Important health, safety and environmental information

-	pH	6 – 7
-	Melting point/freezing point	130 – 210 °C
-	Initial boiling point/boiling range	No information.
-	Flash point	No information.
-	Evaporation rate	No information.
-	Flammability (solid, gas)	Not flammable.
-	Explosion limits (vol%)	No information.
-	Vapour pressure	No information.
-	Vapour density	No information.
-	Density	Bulk density: 0,9 – 1,05 g/cm ³
-	Solubility	Water: Soluble
-	Partition coefficient	No information.
-	Auto-ignition temperature	Not self-igniting.
-	Decomposition temperature	No information.
-	Viscosity	No information.
-	Explosive properties	Product is not explosive.
-	Oxidising properties	Not oxidising.
-	Particle characteristics	No information.

9.2. Other information

-	Remarks:	Hygroscopic.
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SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

Product is stable under normal conditions of use, recommended handling and storage conditions.

10.3. Possibility of hazardous reactions

Reacts with strong alkalis releasing ammonia. Dust may form explosive mixtures with air.

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10.4. Conditions to avoid

Strong heating. Avoid contact with incompatible materials.

10.5. Incompatible materials

Strong bases.
 Strong acids.

10.6. Hazardous decomposition products

Under normal use conditions no hazardous decomposition products are expected. In case of fire/explosion vapours/gases that pose a health hazard are released. Hazardous combustion products, see Section 5 of the safety data sheet.

SECTION 11. TOXICOLOGICAL INFORMATION

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

(a) Acute toxicity

Name	Exposure route	Type	Species	Time	Value	Method	Remark
ammonium sulphate (7783-20-2)	oral	LD ₅₀	rat	7 days	4250 mg/kg bw	OECD 401	
ammonium sulphate (7783-20-2)	dermal	LD ₅₀	rat	14 days	2000 mg/kg bw	OECD 434	
ammonium sulphate (7783-20-2)	inhalation (dusts/mists)	LC ₅₀	rat	4 h	3,6 mg/l	OECD 433	
ammonium dihydrogenorthophosphate (7722-76-1)	oral	LD ₅₀	rat	14 days	> 2000 mg/kg bw	OECD 425	7-14 days
ammonium dihydrogenorthophosphate (7722-76-1)	dermal	LD ₅₀	rat	24 h	> 5000 mg/kg bw	OECD 402	
ammonium dihydrogenorthophosphate (7722-76-1)	inhalation (dusts/mists)	LC ₅₀	rat	4 h	> 5 mg/l	OECD 403	
potassium sulfate (7778-80-5)	oral	LD ₅₀	rat		> 2000 mg/kg bw	OECD 425	
potassium sulfate (7778-80-5)	dermal	LD ₅₀	rat	24 h	> 2000 mg/kg bw	OECD 402	
potassium sulfate (7778-80-5)	inhalation (dusts/mists)	LC ₅₀	rat		> 1,2 mg/l	OECD 433	
zinc oxide (1314-13-2)	oral	LD ₅₀	rat	14 days	5000 mg/kg bw	OECD 401	
zinc oxide (1314-13-2)	dermal	LD ₅₀	rat	24 h	2000 mg/kg bw	OECD 402	
zinc oxide (1314-13-2)	inhalation (dusts/mists)	LC ₅₀	rat	4 h	5700 mg/m ³	OECD 403	

Additional information: The product is not classified for acute toxicity.

(b) Skin corrosion/irritation

Name	Species	Time	Result	Method	Remark
ammonium sulphate (7783-20-2)	rabbit		Non-irritant.		
ammonium dihydrogenorthophosphate (7722-76-1)	rabbit	24 h	Dermal - erythema: score 0,25 (72h)	OECD 404	
potassium sulfate (7778-80-5)			Non-irritant.	EU Method B.46	

Additional information: The product is not classified as irritating to skin and eyes.

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(c) Serious eye damage/irritation

Name	Species	Time	Result	Method	Remark
ammonium sulphate (7783-20-2)	rabbit		Mild irritating.	BASF	24, 48, 72 h
ammonium dihydrogenorthophosphate (7722-76-1)	rabbit		Can cause mild irritation.	OECD 405	
potassium sulfate (7778-80-5)	rabbit		No irritant effect.	OECD 405	
zinc oxide (1314-13-2)	rabbit		Conjunctivitis.	OECD 405	

(d) Respiratory or skin sensitisation

Name	Exposure route	Species	Time	Result	Method	Remark
ammonium sulphate (7783-20-2)	dermal	guinea pig	48 h	The occurrence of erythema and mild edema.	EPA 540/9-82-025	24-48 h; 76.5 mg
ammonium dihydrogenorthophosphate (7722-76-1)	dermal	mouse		Non sensitising.	OECD 429; EU B.42	
potassium sulfate (7778-80-5)	dermal	mouse		Non sensitising.	OECD 429	
zinc oxide (1314-13-2)	dermal	Guinea pig (female)		Non sensitising.	EU B.6, OECD 406	2 %

Additional information: The product is not classified as sensitising.

(e) (Germ cell) mutagenicity

Name	Type	Species	Time	Result	Method	Remark
ammonium sulphate (7783-20-2)	in-vitro mutagenicity	rat (livers)		Negative with metabolic activation, negative without metabolic activation.	OECD 471	Salmonella typhimurium
ammonium sulphate (7783-20-2)	in-vivo mutagenicity	mouse (male)		Negative with metabolic activation, negative without metabolic activation.	OECD 471	Salmonella typhimurium
potassium sulfate (7778-80-5)	in-vitro mutagenicity	<i>Escherichia coli</i>		Negative.		
zinc oxide (1314-13-2)	in-vitro mutagenicity	rat (<i>Salmonella typhimurium</i>)		Negative with metabolic activation, negative without metabolic activation.	OECD 471	1000-5000 µg/petri dish
zinc oxide (1314-13-2)	in-vivo mutagenicity	mouse (<i>Salmonella typhimurium</i>)	24 h	Negative with metabolic activation, negative without metabolic activation.	OECD 474	15, 30, 60 mg/kg bw

(f) Carcinogenicity

Name	Exposure route	Type	Species	Time	Value	Result	Method	Remark
potassium sulfate (7778-80-5)						Animal testing did not show any carcinogenic effects.	OECD 453	

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(g) Reproductive toxicity

Name	Reproductive toxicity type	Type	Species	Time	Value	Result	Method	Remark
ammonium sulphate (7783-20-2)	Reproductive toxicity	NOAEL	rat (oral)		1500 mg/kg/day		OECD 422	
potassium sulfate (7778-80-5)	Reproductive toxicity	NOAEL	rat		≥ 1500 mg/kg	Animal testing did not show any effects on fertility.	OECD 422	
potassium sulfate (7778-80-5)								
zinc oxide (1314-13-2)	Reproductive toxicity	NOAEL (P)	rat (oral)		7,5 mg/kg bw/day		OECD 416	
zinc oxide (1314-13-2)	Reproductive toxicity	NOAEL (F1)	rat (oral)		15 mg/kg bw/day		OECD 416	7.2 mg Zn/kg bw/dan

Summary of evaluation of the CMR properties

The product is not classified as carcinogenic, mutagenic or toxic for reproduction.

(h) STOT-single exposure

Additional information: STOT SE (single exposure): Not classified.

(i) STOT-repeated exposure

Name	Exposure route	Type	Species	Time	Organ	Value	Result	Method	Remark
ammonium sulphate (7783-20-2)	inhalation	LOEC	Guinea pig (male)			0,187 mg/m ³ air		OECD 422	6h/day
ammonium sulphate (7783-20-2)	oral	NOAEL	rat (male)			256 – 284 mg/kg	Weight increase of kidneys and spleen.	OECD 453	24 hours per day
ammonium dihydrogenorthophosphate (7722-76-1)	oral	NOAEL	rat			250 mg/kg		OECD 422	
potassium sulfate (7778-80-5)	oral	NOAEL	rat			256 mg/kg	Health injuries are not expected under normal use.	OECD 453	
zinc oxide (1314-13-2)	oral	NOAEL	rat (male/female)			31,52 mg/kg bw	Changes on the body.	OECD 408	24 hours per day
zinc oxide (1314-13-2)	inhalation	NOAEL	rat (male/female)			1,5 mg/m ³ air	The increase of lymphocytes.	OECD 413	6h/day
zinc oxide (1314-13-2)	dermal	NOAEL	rat (male/female)			75 mg/kg bw	Reduction of collagen content.	OECD 410	6h/day

Additional information: STOT RE (repeated exposure): Not classified.

(j) Aspiration hazard

Additional information: Aspiration hazard: Not classified.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

No information.

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11.2.2. Other information

No information.

SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1. Acute (short-term) toxicity

For components

Substance (CAS Nr.)	Type	Value	Exposure time	Species	Organism	Method	Remark
ammonium sulphate (7783-20-2)	LC ₅₀	53 mg/L	96 h	fish	<i>Oncorhynchus mykiss</i>	OECD 203	
	EC ₅₀	1605 mg/L	5 h	algae	<i>Chlorella vulgaris</i>	OECD 201	
	EC ₂₀	1050 mg/L	30 min	microorganisms	Activated sludge		respiration inhibiton
	EC ₅₀	1618 mg/L	30 min	microorganisms	Activated sludge		respiration inhibiton
	EC ₅₀	121,7 mg/L	48 h	crab	<i>Ceriodaphnia acanthina</i>	OECD 202	
ammonium dihydrogenorthophosphate (7722-76-1)	LL ₅₀	85,9 mg/L	96 h	fish	<i>Oncorhynchus mykiss</i>	OECD Guideline 203 (Fish, Acute Toxicity Test)	
	EC ₅₀	97,1 mg/L	72 h	algae	<i>Pseudokirchneriella subcapitata</i>	OECD 201	
	LC ₅₀	1790 mg/L	72 h	crustacea	<i>Daphnia carinata</i>	OECD 202	
potassium sulfate (7778-80-5)	LC ₅₀	680 mg/L	96 h	fish	<i>Pimephales promelas</i>	EPA 600/4-90/027	
	LC ₅₀	720 mg/L	48 h	crustacea	<i>Daphnia magna</i>	EPA 600/4-90/027	
zinc oxide (1314-13-2)	LC ₅₀	330 µg/l	96 h	fish		OECD 203	
	LC ₅₀	23,06 µg/l	84 h	fish		OECD 203	
	EC ₅₀	2,065 – 2,066 mg/L	84 h	fish		OECD 202	
	EC ₅₀	155 – 100000 µg/l	48 h	invertebrates			
	IC ₅₀	44 – 2050 mg/L	72 h	algae		OECD 201	
	NOEC	60 µg/l	72 h	algae		OECD 201	
	EC ₅₀	0,413 mg Zn/L	48 h	crustacea	<i>Ceriodaphnia dubia</i>	OECD 202	
	NOEC	100 µg/l	4 h	microorganisms	Activated sludge	OECD 209	
	NOEC	455 – 1770 mg/L	42 days	algae			

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12.1.2. Chronic (long-term) toxicity

For components

Substance (CAS Nr.)	Type	Value	Exposure time	Species	Organism	Method	Remark
ammonium sulphate (7783-20-2)	EC ₁₀	5,29 mg/l	30 days	fish	<i>Lepomis macrochirus</i>	BASF test	
	EC ₁₀	3,12 mg/l	10 weeks	crustacea	<i>Daphnia magna</i>	BASF test	
zinc oxide (1314-13-2)	NOEC	0,019 mg/l	72 h	algae	<i>Selenastrum capricornutum</i>	OECD 201	
	NOEC	100 µg/L	7 months	invertebrates			
	NOEC	1,071 mg/l	16 days	algae and cyanobacteria			

12.2. Persistence and degradability

12.2.1. Abiotic degradation, physical- and photo-chemical elimination

No information.

12.2.2. Biodegradation

No information.

Additional information

Nitrogen is biodegradable. Phosphorus can form insoluble iron/aluminum phosphates or is incorporated into soil organic matter. Potassium is mainly adsorbed on clay minerals or remains in solution. Biodegradable products that follow the natural cycle of nitrification/denitrification of nitrogen which is the basis for plant nutrition.

12.3. Bioaccumulative potential

12.3.1. Partition coefficient

No information.

12.3.2. Bioconcentration factor (BCF)

No information.

Additional information

No bioaccumulation expected.

12.4. Mobility in soil

12.4.1. Known or predicted distribution to environmental compartments

No information.

12.4.2. Surface tension

No information.

12.4.3. Adsorption/Desorption

No information.

Additional information

Partly soluble in water. The NH₄⁺ ion is absorbed by soil particles. Phosphorus enters shortly into soil solution, but is soon bound to soil components and becomes immobile. The dissolved K⁺ ion in the soil solution is absorbed by clay minerals and only in light soils where these are absent can part of the potassium be leached.

12.5. Results of PBT and vPvB assessment

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

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12.6. Endocrine disrupting properties

Prevent spreading in groundwater, watercourses, water supply or sewage system. No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation, endocrine disruption, global warming) are expected.

12.7. Additional information

For product

Product is not classified as dangerous for environment.

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

13.1.1. Product / Packaging disposal

Waste chemical

Dispose of in accordance with applicable waste disposal regulation. Waste should be handled in accordance with local or national regulations. Dispose the product to an authorised collector/remover of waste/company performing waste recovery.

Packaging

Dispose of in accordance with applicable waste disposal regulation. Deliver completely emptied containers to approved waste disposal authorities.

Waste codes / waste designations according to LoW

15 01 02 - plastic packaging

15 01 03 - wooden packaging

13.1.2. Waste treatment-relevant information

Disposal in accordance with the Rules on the management of waste.

13.1.3. Sewage disposal-relevant information

-

13.1.4. Other disposal recommendations

-

SECTION 14. TRANSPORT INFORMATION

14.1. UN number or ID number

Not applicable.

14.2. UN proper shipping name

ADR, RID, IMDG, ADN, IATA: Not dangerous according to transport regulations.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

NO.

14.6. Special precautions for user

Not applicable.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable.

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SECTION 15. REGULATORY INFORMATION

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

- Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (including last amendment Commission Regulation (EU) 2020/878)
- Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

15.1.1. Information according 2004/42/EC about limitation of emissions of volatile organic compounds (VOC-guideline)

Not applicable.

15.2. Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16. OTHER INFORMATION

Indication of changes

-

Abbreviations and acronyms

ATE - Acute Toxicity Estimate
ADR - Agreement concerning the International Carriage of Dangerous Goods by Road
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
CEN - European Committee for Standardisation
C&L - Classification and Labelling
CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
CAS# - Chemical Abstracts Service number
CMR - Carcinogen, Mutagen, or Reproductive Toxicant
CSA - Chemical Safety Assessment
CSR - Chemical Safety Report
DMEL - Derived Minimal Effect Level
DNEL - Derived No Effect Level
DPD - Dangerous Preparations Directive 1999/45/EC
DSD - Dangerous Substances Directive 67/548/EEC
DU - Downstream User
EC - European Community
ECHA - European Chemicals Agency
EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS)
EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway)
EEC - European Economic Community
EINECS - European Inventory of Existing Commercial Substances
ELINCS - European List of notified Chemical Substances
EN - European Standard
EQS - Environmental Quality Standard
EU - European Union
Euphrac - European Phrase Catalogue
EWC - European Waste Catalogue (replaced by LoW – see below)
GES - Generic Exposure Scenario
GHS - Globally Harmonized System
IATA - International Air Transport Association
ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG - International Maritime Dangerous Goods
IMSBC - International Maritime Solid Bulk Cargoes
IT - Information Technology
IUCLID - International Uniform Chemical Information Database
IUPAC - International Union for Pure Applied Chemistry
JRC - Joint Research Centre
Kow - octanol-water partition coefficient

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LC₅₀ - Lethal Concentration to 50 % of a test population
LD₅₀ - Lethal Dose to 50% of a test population (Median Lethal Dose)
LE - Legal Entity
LoW - List of Wastes (see <http://ec.europa.eu/environment/waste/framework/list.htm>)
LR - Lead Registrant
M/I - Manufacturer / Importer
MS - Member States
MSDS - Material Safety Data Sheet
OC - Operational Conditions
OECD - Organization for Economic Co-operation and Development
OEL - Occupational Exposure Limit
OJ - Official Journal
OR - Only Representative
OSHA - European Agency for Safety and Health at work
PBT - Persistent, Bioaccumulative and Toxic substance
PEC - Predicted Effect Concentration
PNEC(s) - Predicted No Effect Concentration(s)
PPE - Personal Protection Equipment
(Q)SAR - Qualitative Structure Activity Relationship
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
RIP - REACH Implementation Project
RMM - Risk Management Measure
SCBA - Self-Contained Breathing Apparatus
SDS - Safety data sheet
SIEF - Substance Information Exchange Forum
SME - Small and Medium sized Enterprises
STOT - Specific Target Organ Toxicity
(STOT) RE - Repeated Exposure
(STOT) SE - Single Exposure
SVHC - Substances of Very High Concern
UN - United Nations
vPvB - Very Persistent and Very Bioaccumulative

Key literature references and sources for data

-

List of relevant H phrases

H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.



- ☒ Provided correct labelling of the product
- ☒ Compliance with the local legislation
- ☒ Provided correct classification of the product
- ☒ Provided adequate transport data

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The information of this SDS is based on the present state of our knowledge and meets the requirements of EU and national laws. The user's working conditions however, are beyond our knowledge and control. The product is not to be used for purposes other than those specified under Section 1 without a written permission. It remains the responsibility of the user to ensure that the necessary steps are taken to meet the laws and regulations. Handling of the product may only be done by people above 18 years of age, who are satisfactorily informed of how to do the work, the hazardous properties and necessary safety precautions. The information given in this SDS is to describe the product only in terms of health and safety requirements and should not, therefore, be construed as guaranteeing specific properties.