ROAM TECHNOLOGY
scientific by nature

Sili-Fert P+
Fertilizer

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

1.1 Product identifier: Sili-Fert P+
Fertilizer

Other means of identification:

Not relevant

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

Relevant uses: Fertilizer. For professional users only.

Uses advised against: All uses not specified in this section or in section 7.3

1.3 Details of the supplier of the safety data sheet:

NV Roam Technology
Geleenlaan 24
3600 Genk - EMEA - Belgium
Phone: +32 89 44 00 42
info@roamtechnology.com
https://www.roamtechnology.com/

1.4 Emergency telephone number: +32 89 44 00 42 (Mon - Fri, 8h - 16h)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

CLP Regulation (EC) No 1272/2008:

Classification of this product has been carried out in accordance with CLP Regulation (EC) No 1272/2008.

Aquatic Chronic 2: Hazardous to the aquatic environment, long-term hazard, Category 2, H411
Eye Dam. 1: Serious eye damage, Category 1, H318
Met. Corr. 1: Corrosive to metals, Category 1, H290
Repr. 1B: Reproductive toxicity, Category 1B, H360FD
Skin Irrit. 2: Skin irritation, Category 2, H315

2.2 Label elements:

CLP Regulation (EC) No 1272/2008:

Danger

Hazard statements:

Aquatic Chronic 2: H411 - Toxic to aquatic life with long lasting effects.
Eye Dam. 1: H318 - Causes serious eye damage.
Met. Corr. 1: H290 - May be corrosive to metals.
Repr. 1B: H360FD - May impair fertility. May damage the foetus.
Skin Irrit. 2: H315 - Causes skin irritation.

Precautionary statements:

P201: Obtain special instructions before use.
P280: Wear protective gloves/face protection/protective clothing/respiratory protection/protective footwear.
P302+P352: IF ON SKIN: Wash with plenty of water.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P501: Dispose of contents/container in accordance with regulations on hazardous waste or packaging and packaging waste respectively.

Additional Labelling:

Restricted to professional users

2.3 Other hazards:

Product does not meet PBT/vPvB criteria
Endocrine-disrupting properties: The product does not meet the criteria.

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance:

Non-applicable

3.2 Mixture:

Chemical description: Aqueous solution of inorganic acids

Components:

In accordance with Annex II of Regulation (EC) No 1907/2006 (point 3), the product contains:

Identification	Chemical name/Classification		Concentration
CAS: 10034-96-5 EC: 232-089-9 Index: Non-applicable REACH: 01-2119456624-35-XXXX	**manganese sulphate · (H2O)(1)**	Self-classified	**0,1 - <2,5 %**
	Regulation 1272/2008	Aquatic Chronic 2: H411; STOT RE 2: H373 - Warning	
CAS: 10125-13-0 EC: 231-210-2 Index: Non-applicable REACH: 01-2119970306-36-XXXX	**Copper(II) chloride dihydrate(1)**	Self-classified	**0,1 - <2,5 %**
	Regulation 1272/2008	Acute Tox. 4: H302; Aquatic Acute 1: H400; Aquatic Chronic 1: H410; Skin Corr. 1B: H314 - Danger	
CAS: 1312-76-1 EC: 215-199-1 Index: Non-applicable REACH: 01-2119456888-17-XXXX	**Silicic acid, potassium salt (2.6 < MR < 3.2)(1)**	Self-classified	**0,1 - <2,5 %**
	Regulation 1272/2008	Eye Irrit. 2: H319; Skin Irrit. 2: H315; STOT SE 3: H335 - Warning	
CAS: Non-applicable EC: 231-595-7 Index: 017-002-01-X REACH: 01-2119484862-27-XXXX	**Hydrochloric acid(1)**	Self-classified	**0,1 - <2,5 %**
	Regulation 1272/2008	Met. Corr. 1: H290; Skin Corr. 1B: H314; STOT SE 3: H335 - Danger	
CAS: 7646-85-7 EC: 231-592-0 Index: 030-003-00-2 REACH: 01-2119472431-44-XXXX	**zinc chloride(1)**	ATP CLP00	**0,1 - <2,5 %**
	Regulation 1272/2008	Acute Tox. 4: H302; Aquatic Acute 1: H400; Aquatic Chronic 1: H410; Skin Corr. 1B: H314 - Danger	
CAS: 10043-35-3 EC: 233-139-2 Index: 005-007-00-2 REACH: 01-2119486683-25-XXXX	**Boric acid(1)**	ATP ATP17	**0,1 - <2,5 %**
	Regulation 1272/2008	Repr. 1B: H360FD - Danger	

(1) Substances presenting a health or environmental hazard which meet criteria laid down in Regulation (EU) No. 2020/878

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

Other information:

Identification	Specific concentration limit
Hydrochloric acid CAS: Non-applicable EC: 231-595-7	% (w/w) >=0,1: Met. Corr. 1 - H290 % (w/w) >=25: Skin Corr. 1B - H314 10<= % (w/w) <25: Skin Irrit. 2 - H315 % (w/w) >=25: Eye Dam. 1 - H318 10<= % (w/w) <25: Eye Irrit. 2 - H319 % (w/w) >=10: STOT SE 3 - H335
zinc chloride CAS: 7646-85-7 EC: 231-592-0	% (w/w) >=5: STOT SE 3 - H335

Acute toxicity estimate for the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or as determined in accordance with Annex I to that Regulation:

Identification	Acute toxicity		Genus
Copper(II) chloride dihydrate	LD50 oral	584 mg/kg	Rat
CAS: 10125-13-0	LD50 dermal	Not relevant	
EC: 231-210-2	LC50 inhalation	Not relevant	
zinc chloride	LD50 oral	528 mg/kg	Rat
CAS: 7646-85-7	LD50 dermal	Not relevant	
EC: 231-592-0	LC50 inhalation	Not relevant	

SECTION 4: FIRST AID MEASURES

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SECTION 4: FIRST AID MEASURES (continued)

4.1 Description of first aid measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:

This product is not classified as hazardous through inhalation. However, in case of intoxication symptoms it is recommended to remove the person affected from the area of exposure, provide clean air and keep at rest. Request medical attention if symptoms persist.

By skin contact:

Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection.

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, in which case this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

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

Acute and delayed effects are indicated in sections 2 and 11.

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

Not relevant

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media:

Product is non-flammable under normal conditions of storage, handling and use. In the case of combustion as a result of improper handling, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems.

Unsuitable extinguishing media:

Non-applicable

5.2 Special hazards arising from the substance or mixture:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Advice for firefighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and self-contained breathing apparatus (SCBA). Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...) in accordance with Directive 89/654/EC.

Additional provisions:

Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Eliminate all sources of ignition. In case of fire, cool the storage containers and tanks for products susceptible to combustion, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

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SECTION 6: ACCIDENTAL RELEASE MEASURES (continued)

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders:

Wear protective equipment. Keep unprotected persons away. See section 8.

6.2 Environmental precautions:

Avoid at all cost any type of spillage into an aqueous medium. Contain the product absorbed appropriately in hermetically sealed containers. Notify the relevant authority in case of exposure to the general public or the environment.

6.3 Methods and material for containment and cleaning up:

It is recommended:

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. For any concern related to disposal consult section 13.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.- General precautions for safe use

Comply with the current legislation concerning the prevention of industrial risks. Control spills and residues, destroying them with safe methods (section 6). Avoid leakages from the container. Maintain order and cleanliness where dangerous products are used. KEEP ONLY IN ORIGINAL PACKAGING.

B.- Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, handling and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.- Technical recommendations on general occupational hygiene

PREGNANT WOMEN SHOULD NOT BE EXPOSED TO THIS PRODUCT. Transfer in designated areas that comply with the necessary safety conditions (emergency showers and eyewash stations in close proximity), using personal protection equipment, especially on the hands and face (See section 8). Limit manual transfers to small amounts only. Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.- Technical recommendations to prevent environmental risks

Due to the danger of this product for the environment it is recommended to use it within an area containing contamination control barriers in case of spillage, as well as having absorbent material in close proximity.

7.2 Conditions for safe storage, including any incompatibilities:

A.- Technical measures for storage

Minimum Temp.:	5 ºC
Maximum Temp.:	30 ºC
Maximum time:	24 Months

B.- General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be monitored in the workplace:

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

EH40/2005 Workplace exposure limits, fourth edition, published 2020:

Identification	Occupational exposure limits		
manganese sulphate · (H2O) CAS: 10034-96-5 EC: 232-089-9	WEL (8h) WEL (15 min)		0,05 mg/m³
Copper(II) chloride dihydrate CAS: 10125-13-0 EC: 231-210-2	WEL (8h) WEL (15 min)		1 mg/m³ 2 mg/m³
zinc chloride CAS: 7646-85-7 EC: 231-592-0	WEL (8h) WEL (15 min)		1 mg/m³ 2 mg/m³

DNEL (Workers):

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
manganese sulphate · (H2O) CAS: 10034-96-5 EC: 232-089-9	Oral Dermal Inhalation	Not relevant Not relevant Not relevant	Not relevant Not relevant Not relevant	Not relevant 0,004 mg/kg Not relevant	Not relevant Not relevant Not relevant
Copper(II) chloride dihydrate CAS: 10125-13-0 EC: 231-210-2	Oral Dermal Inhalation	Not relevant Not relevant Not relevant	Not relevant Not relevant Not relevant	Not relevant 137 mg/kg 1 mg/m³	Not relevant Not relevant 1 mg/m³
Silicic acid, potassium salt (2.6 < MR < 3.2) CAS: 1312-76-1 EC: 215-199-1	Oral Dermal Inhalation	Not relevant Not relevant Not relevant	Not relevant Not relevant Not relevant	Not relevant 1,49 mg/kg 5,61 mg/m³	Not relevant Not relevant Not relevant
Hydrochloric acid CAS: Non-applicable EC: 231-595-7	Oral Dermal Inhalation	Not relevant Not relevant Not relevant	Not relevant Not relevant 15 mg/m³	Not relevant Not relevant Not relevant	Not relevant Not relevant 8 mg/m³
zinc chloride CAS: 7646-85-7 EC: 231-592-0	Oral Dermal Inhalation	Not relevant Not relevant Not relevant	Not relevant Not relevant Not relevant	Not relevant 8,3 mg/kg 1 mg/m³	Not relevant Not relevant Not relevant
Boric acid CAS: 10043-35-3 EC: 233-139-2	Oral Dermal Inhalation	Not relevant Not relevant Not relevant	Not relevant Not relevant Not relevant	Not relevant 392 mg/kg 8,3 mg/m³	Not relevant Not relevant Not relevant

DNEL (General population):

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
manganese sulphate · (H2O) CAS: 10034-96-5 EC: 232-089-9	Oral Dermal Inhalation	Not relevant Not relevant Not relevant	Not relevant Not relevant Not relevant	Not relevant 0,002 mg/kg 0,043 mg/m³	Not relevant Not relevant Not relevant
Copper(II) chloride dihydrate CAS: 10125-13-0 EC: 231-210-2	Oral Dermal Inhalation	0,082 mg/kg Not relevant Not relevant	Not relevant Not relevant Not relevant	0,041 mg/kg Not relevant Not relevant	Not relevant Not relevant Not relevant
Silicic acid, potassium salt (2.6 < MR < 3.2) CAS: 1312-76-1 EC: 215-199-1	Oral Dermal Inhalation	Not relevant Not relevant Not relevant	Not relevant Not relevant Not relevant	0,74 mg/kg 0,74 mg/kg 1,38 mg/m³	Not relevant Not relevant Not relevant
Hydrochloric acid CAS: Non-applicable EC: 231-595-7	Oral Dermal Inhalation	Not relevant Not relevant Not relevant	Not relevant Not relevant 15 mg/m³	Not relevant Not relevant Not relevant	Not relevant Not relevant 8 mg/m³
zinc chloride CAS: 7646-85-7 EC: 231-592-0	Oral Dermal Inhalation	Not relevant Not relevant Not relevant	Not relevant Not relevant Not relevant	0,83 mg/kg 8,3 mg/kg 1,25 mg/m³	Not relevant Not relevant Not relevant
Boric acid CAS: 10043-35-3 EC: 233-139-2	Oral Dermal Inhalation	0,98 mg/kg Not relevant Not relevant	Not relevant Not relevant Not relevant	0,98 mg/kg 196 mg/kg 4,15 mg/m³	Not relevant Not relevant Not relevant

PNEC:

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Identification				
manganese sulphate · (H2O)	STP	56 mg/L	Fresh water	0,03 mg/L
CAS: 10034-96-5	Soil	25,1 mg/kg	Marine water	0 mg/L
EC: 232-089-9	Intermittent	0,088 mg/L	Sediment (Fresh water)	0,011 mg/kg
	Oral	Not relevant	Sediment (Marine water)	0,001 mg/kg
Copper(II) chloride dihydrate	STP	0,23 mg/L	Fresh water	0,0078 mg/L
CAS: 10125-13-0	Soil	65 mg/kg	Marine water	0,0052 mg/L
EC: 231-210-2	Intermittent	Not relevant	Sediment (Fresh water)	87 mg/kg
	Oral	Not relevant	Sediment (Marine water)	676 mg/kg
Silicic acid, potassium salt (2.6 < MR < 3.2)	STP	348 mg/L	Fresh water	7,5 mg/L
CAS: 1312-76-1	Soil	Not relevant	Marine water	1 mg/L
EC: 215-199-1	Intermittent	7,5 mg/L	Sediment (Fresh water)	Not relevant
	Oral	Not relevant	Sediment (Marine water)	Not relevant
zinc chloride	STP	0,1 mg/L	Fresh water	0,0206 mg/L
CAS: 7646-85-7	Soil	35,6 mg/kg	Marine water	0,0061 mg/L
EC: 231-592-0	Intermittent	Not relevant	Sediment (Fresh water)	117,8 mg/kg
	Oral	Not relevant	Sediment (Marine water)	56,5 mg/kg
Boric acid	STP	10 mg/L	Fresh water	2,9 mg/L
CAS: 10043-35-3	Soil	5,7 mg/kg	Marine water	2,9 mg/L
EC: 233-139-2	Intermittent	13,7 mg/L	Sediment (Fresh water)	Not relevant
	Oral	Not relevant	Sediment (Marine water)	Not relevant

8.2 Exposure controls:

A.- Individual protection measures, such as personal protective equipment

As a preventative measure it is recommended to use basic Personal Protective Equipment, with the corresponding <<CE marking>> in accordance with Regulation (EU) 2016/425. For more information on Personal Protective Equipment (storage, use, cleaning, maintenance, class of protection,…) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

B.- Respiratory protection

Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory respiratory tract protection	Filter mask for gases and vapours	CE CAT III	EN 405:2002+A1:2010	Replace when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment.

C.- Specific protection for the hands

Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory hand protection	Chemical protective gloves (Material: Nitrile, Breakthrough time: > 480 min, Thickness: 0,11 mm)	CE CAT III	EN ISO 21420:2020	Replace the gloves at any sign of deterioration.

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

D.- Eye and face protection

Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory face protection	Face shield	CE CAT II	EN 166:2002 EN 167:2002 EN 168:2002 EN ISO 4007:2018	Clean daily and disinfect periodically according to the manufacturer´s instructions. Use if there is a risk of splashing.

E.- Body protection

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory complete body protection	Disposable clothing for protection against chemical risks	CE CAT III	EN 13034:2005+A1:2009 EN 168:2002 EN ISO 13982-1:2004/A1:2010 EN ISO 6529:2013 EN ISO 6530:2005 EN 464:1994	For professional use only. Clean periodically according to the manufacturer´s instructions.
 Mandatory foot protection	Safety footwear for protection against chemical risk	CE CAT III	EN ISO 20345:2011 EN 13832-1:2019	Replace boots at any sign of deterioration.

F.- Additional emergency measures

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

In accordance with the community legislation for the protection of the environment it is recommended to avoid environmental spillage of both the product and its container. For additional information see subsection 7.1.D

Volatile organic compounds:

With regard to Directive 2010/75/EU, this product has the following characteristics:

V.O.C. (Supply):	0 % weight
V.O.C. density at 20 ºC:	0 kg/m³ (0 g/L)
Average carbon number:	Not relevant
Average molecular weight:	Not relevant

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 20 ºC:	Liquid
Appearance:	Fluid
Colour:	Green
Odour:	Odourless
Odour threshold:	Not relevant *

Volatility:

Boiling point at atmospheric pressure:	100 ºC
Vapour pressure at 20 ºC:	2350 Pa
Vapour pressure at 50 ºC:	12381,01 Pa (12,38 kPa)
Evaporation rate at 20 ºC:	Not relevant *

Product description:

Density at 20 ºC:	>1123,8 kg/m³
Relative density at 20 ºC:	>1,124
Dynamic viscosity at 20 ºC:	Not relevant *
Kinematic viscosity at 20 ºC:	Not relevant *
Kinematic viscosity at 40 ºC:	Not relevant *

*Not relevant due to the nature of the product, not providing information property of its hazards.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Concentration:	Not relevant *
pH:	Not relevant *
Vapour density at 20 ºC:	Not relevant *
Partition coefficient n-octanol/water 20 ºC:	Not relevant *
Solubility in water at 20 ºC:	Not relevant *
Solubility properties:	Not relevant *
Decomposition temperature:	Not relevant *
Melting point/freezing point:	Not relevant *
Flammability:	
Flash Point:	Non Flammable (>60 ºC)
Flammability (solid, gas):	Not relevant *
Autoignition temperature:	360 ºC
Lower flammability limit:	Not relevant *
Upper flammability limit:	Not relevant *
Particle characteristics:	
Median equivalent diameter:	Non-applicable

9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties:	Not relevant *
Oxidising properties:	Not relevant *
Corrosive to metals:	H290 May be corrosive to metals.
Heat of combustion:	Not relevant *
Aerosols-total percentage (by mass) of flammable components:	Not relevant *
Other safety characteristics:	
Surface tension at 20 ºC:	Not relevant *
Refraction index:	Not relevant *

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7 from Safety Data Sheet.

10.2 Chemical stability:

Chemically stable under the indicated conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Precaution	Not applicable	Avoid alkalis or strong bases

10.6 Hazardous decomposition products:

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SECTION 10: STABILITY AND REACTIVITY (continued)

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: Mixture based on inorganic substances.

SECTION 11: TOXICOLOGICAL INFORMATION

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

The experimental information related to the toxicological properties of the product itself is not available

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than the recommended occupational exposure limits, adverse effects on health may result, depending on the means of exposure:

A- Ingestion (acute effect):

- Acute toxicity: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met. However, it does contain substances classified as hazardous for this effect. For more information see section 3.

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Produces skin inflammation.
- Contact with the eyes: Produces serious eye damage after contact.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for the effects mentioned. For more information see section 3.
  IARC: Not relevant
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- Reproductive toxicity: May impair fertility. May damage the foetus

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous with sensitising effects. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met. However, it contains substances classified as hazardous for inhalation. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met. However, it does contain substances which are classified as dangerous due to repetitive exposure. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

H- Aspiration hazard:

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

Other information:

Not relevant

Specific toxicology information on the substances:

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SECTION 11: TOXICOLOGICAL INFORMATION (continued)

Identification	Acute toxicity		Genus
Silicic acid, potassium salt (2.6 < MR < 3.2)	LD50 oral	5700 mg/kg	Rat
CAS: 1312-76-1	LD50 dermal		
EC: 215-199-1	LC50 inhalation		
Boric acid	LD50 oral	4080 mg/kg	Rat
CAS: 10043-35-3	LD50 dermal		
EC: 233-139-2	LC50 inhalation		
Copper(II) chloride dihydrate	LD50 oral	584 mg/kg (ATEi)	Rat
CAS: 10125-13-0	LD50 dermal		
EC: 231-210-2	LC50 inhalation		
zinc chloride	LD50 oral	528 mg/kg (ATEi)	Rat
CAS: 7646-85-7	LD50 dermal		
EC: 231-592-0	LC50 inhalation		

11.2 Information on other hazards:

Endocrine disrupting properties

Endocrine-disrupting properties: The product does not meet the criteria.

Other information

Not relevant

SECTION 12: ECOLOGICAL INFORMATION

The experimental information related to the eco-toxicological properties of the product itself is not available

Toxic to aquatic life with long lasting effects.

12.1 Toxicity:

Acute toxicity:

Identification	Concentration		Species	Genus
manganese sulphate · (H2O)	LC50	>1 - 10 mg/L (96 h)		Fish
CAS: 10034-96-5	EC50	>1 - 10 mg/L (48 h)		Crustacean
EC: 232-089-9	EC50	>1 - 10 mg/L (72 h)		Algae
Copper(II) chloride dihydrate	LC50	0,9 mg/L (96 h)	Lepomis macrochirus	Fish
CAS: 10125-13-0	EC50	Not relevant		
EC: 231-210-2	EC50	Not relevant		
zinc chloride	LC50	18,18 mg/L (96 h)	Pimephales promelas	Fish
CAS: 7646-85-7	EC50	0,158 mg/L (48 h)	Daphnia magna	Crustacean
EC: 231-592-0	EC50	Not relevant		
Boric acid	LC50	447 mg/L (96 h)	Oncorhynchus mykiss	Fish
CAS: 10043-35-3	EC50	Not relevant		
EC: 233-139-2	EC50	Not relevant		

Chronic toxicity:

Identification	Concentration		Species	Genus
zinc chloride	NOEC	0,172 mg/L	Cottus bairdi	Fish
CAS: 7646-85-7 EC: 231-592-0	NOEC	0,031 mg/L	Daphnia magna	Crustacean
Boric acid	NOEC	11,2 mg/L	Pimephales promelas	Fish
CAS: 10043-35-3 EC: 233-139-2	NOEC	25,9 mg/L	Hyalella azteca	Crustacean

12.2 Persistence and degradability:

Not available

12.3 Bioaccumulative potential:

Substance-specific information:

- CONTINUED ON NEXT PAGE -

SECTION 12: ECOLOGICAL INFORMATION (continued)

Identification	Bioaccumulation potential	
Boric acid	BCF	0
CAS: 10043-35-3	Pow Log	-0,76
EC: 233-139-2	Potential	Low

12.4 Mobility in soil:

Not available

12.5 Results of PBT and vPvB assessment:

Product does not meet PBT/vPvB criteria

12.6 Endocrine disrupting properties:

Endocrine-disrupting properties: The product does not meet the criteria.

12.7 Other adverse effects:

Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

Code	Description	Waste class (Regulation (EU) No 1357/2014)
06 10 02*	wastes containing hazardous substances	Hazardous

Type of waste (Regulation (EU) No 1357/2014):

HP14 Ecotoxic, HP10 Toxic for reproduction

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations in accordance with Annex 1 and Annex 2 (Directive 2008/98/EC, The Waste Regulations 2011, 2011 No. 988). As under 15 01 (2014/955/EU) of the code and in case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-hazardous residue. Waste should not be disposed of to drains. See paragraph 6.2.

Regulations related to waste management:

In accordance with Annex II of Regulation (EC) No 1907/2006 (REACH) the community or state provisions related to waste management are stated

Community legislation: Directive 2008/98/EC, 2014/955/EU, Regulation (EU) No 1357/2014

SECTION 14: TRANSPORT INFORMATION **

Transport of dangerous goods by land:

With regard to ADR 2023 and RID 2023:

14.1 UN number or ID number: Not relevant
14.2 UN proper shipping name: Not relevant
14.3 Transport hazard class(es): Not relevant
Labels: Not relevant
14.4 Packing group: Not relevant
14.5 Environmental hazards: No
14.6 Special precautions for user
Special regulations: Not relevant
Tunnel restriction code: Not relevant
Physico-Chemical properties: see section 9
Limited quantities: Not relevant
14.7 Maritime transport in bulk according to IMO instruments: Not relevant

Transport of dangerous goods by sea:

*** Changes with regards to the previous version*

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SECTION 14: TRANSPORT INFORMATION ** (continued)

With regard to IMDG 41-22:

14.1	**UN number or ID number:**	Not relevant
14.2	**UN proper shipping name:**	Not relevant
14.3	**Transport hazard class(es):**	Not relevant
	Labels:	Not relevant
14.4	**Packing group:**	Not relevant
14.5	**Marine pollutant:**	No
14.6	**Special precautions for user**	
	Special regulations:	Not relevant
	EmS Codes:	
	Physico-Chemical properties:	see section 9
	Limited quantities:	Not relevant
	Segregation group:	Not relevant
14.7	**Maritime transport in bulk according to IMO instruments:**	Not relevant

Transport of dangerous goods by air:

With regard to IATA/ICAO 2024:

14.1	**UN number or ID number:**	Not relevant
14.2	**UN proper shipping name:**	Not relevant
14.3	**Transport hazard class(es):**	Not relevant
	Labels:	Not relevant
14.4	**Packing group:**	Not relevant
14.5	**Environmental hazards:**	No
14.6	**Special precautions for user**	
	Physico-Chemical properties:	see section 9
14.7	**Maritime transport in bulk according to IMO instruments:**	Not relevant

*** Changes with regards to the previous version*

SECTION 15: REGULATORY INFORMATION

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

- Article 95, REGULATION (EU) No 528/2012: *Hydrochloric acid (Non-applicable) - PT: (2)* ; *Boric acid (10043-35-3) - PT: (8)*
- Candidate substances for authorisation under the Regulation (EC) No 1907/2006 (REACH): *Boric acid (10043-35-3)*
- Regulation (EC) No 1005/2009, about substances that deplete the ozone layer: Not relevant
- REGULATION (EU) No 649/2012, in relation to the import and export of hazardous chemical products: Not relevant
- Substances included in Annex XIV of REACH ("Authorisation List") and sunset date: Not relevant

Seveso III:

Section	Description	Lower-tier requirements	Upper-tier requirements
E2	ENVIRONMENTAL HAZARDS	200	500

Limitations to commercialisation and the use of certain dangerous substances and mixtures (Annex XVII REACH, etc ....):

Product classified hazardous under the CMR. Sale and distribution to the general public is prohibited. Due to its CMR category, it is essential to apply the specific measures for workplace hazard prevention covered in articles 4 and 5 of the 2004/37/EC Directive and later modifications.
Shall not be used in:
—ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
—tricks and jokes,
—games for one or more participants, or any article intended to be used as such, even with ornamental aspects.

Specific provisions in terms of protecting people or the environment:

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SECTION 15: REGULATORY INFORMATION (continued)

It is recommended to use the information included in this safety data sheet as a basis for conducting workplace-specific risk assessments in order to establish the necessary risk prevention measures for the handling, use, storage and disposal of this product.

Other legislation:

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG 2009), SI 2009 No 1348
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment (Amendment) Regulations 2011, 2011 No. 1885
Control of Substances Hazardous to Health Regulations 2002 (as amended)
EH40/2005 Workplace exposure limits
The Waste Regulations 2011, 2011 No. 988

Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019 laying down rules on the making available on the market of EU fertilising products.

15.2 Chemical safety assessment:

The supplier has not carried out evaluation of chemical safety.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with ANNEX II-Guide to the compilation of safety data sheets of Regulation (EC) No 1907/2006 (COMMISSION REGULATION (EU) 2020/878)

Modifications related to the previous Safety Data Sheet which concerns the ways of managing risks.:

TRANSPORT INFORMATION (SECTION 14):
- UN number
- Packing group

Texts of the legislative phrases mentioned in section 2:

H315: Causes skin irritation.
H318: Causes serious eye damage.
H290: May be corrosive to metals.
H360FD: May impair fertility. May damage the foetus.
H411: Toxic to aquatic life with long lasting effects.

Texts of the legislative phrases mentioned in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

CLP Regulation (EC) No 1272/2008:

Acute Tox. 4: H302 - Harmful if swallowed.
Aquatic Acute 1: H400 - Very toxic to aquatic life.
Aquatic Chronic 1: H410 - Very toxic to aquatic life with long lasting effects.
Aquatic Chronic 2: H411 - Toxic to aquatic life with long lasting effects.
Eye Irrit. 2: H319 - Causes serious eye irritation.
Met. Corr. 1: H290 - May be corrosive to metals.
Repr. 1B: H360FD - May impair fertility. May damage the foetus.
Skin Corr. 1B: H314 - Causes severe skin burns and eye damage.
Skin Irrit. 2: H315 - Causes skin irritation.
STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure.
STOT SE 3: H335 - May cause respiratory irritation.

Classification procedure:

Skin Irrit. 2: Calculation method
Eye Dam. 1: Calculation method
Repr. 1B: Calculation method
Aquatic Chronic 2: Calculation method

Advice related to training:

Training is recommended in order to prevent industrial risks for staff using this product and to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

http://echa.europa.eu
http://eur-lex.europa.eu

Abbreviations and acronyms:

- CONTINUED ON NEXT PAGE -

SECTION 16: OTHER INFORMATION (continued)

ADR: European agreement concerning the international carriage of dangerous goods by road
IMDG: International maritime dangerous goods code
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
COD: Chemical Oxygen Demand
BOD5: 5day biochemical oxygen demand
BCF: Bioconcentration factor
LD50: Lethal Dose 50
LC50: Lethal Concentration 50
EC50: Effective concentration 50
LogPOW: Octanolwater partition coefficient
Koc: Partition coefficient of organic carbon
UFI: unique formula identifier
IARC: International Agency for Research on Cancer

- END OF SAFETY DATA SHEET -