FAE.000097
Talisman

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

1.1 Product identifier: FAE.000097
Talisman

Other means of identification:

UFI: S6S2-G0P2-D001-63TG

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

Relevant uses: Fertilizer. For professional users/industrial user 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:

Frontier Agriculture (Europe) B.V.
Kabelweg 57
1014 BA Amsterdam - The Netherlands
Phone: +44 (0) 7748 221144
admin@intracrop.co.uk

1.4 Emergency telephone number: +44 (0) 870 190 6777 (INTL) / + 353 (0) 18 092 166

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 3: Hazardous to the aquatic environment, long-term hazard, Category 3, H412
Eye Dam. 1: Serious eye damage, Category 1, H318
Skin Corr. 1: Skin corrosion, Category 1, H314

2.2 Label elements:

CLP Regulation (EC) No 1272/2008:

Danger

Hazard statements:

Aquatic Chronic 3: H412 - Harmful to aquatic life with long lasting effects.
Skin Corr. 1: H314 - Causes severe skin burns and eye damage.

Precautionary statements:

P264: Wash thoroughly after handling.
P280: Wear protective gloves/face protection/protective clothing/protective footwear.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER/doctor.
P501: Dispose of contents and / or containers in accordance with regulations on hazardous waste or packaging and packaging waste respectively.

Substances that contribute to the classification

Phosphoric acid; Pidolic acid

UFI: S6S2-G0P2-D001-63TG

2.3 Other hazards:

Product fails to meet PBT/vPvB criteria

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance:

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

Non-applicable

3.2 Mixture:

Chemical description: Mixture composed of chemical products

Components:

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

Identification	Chemical name/Classification		Concentration
CAS: 7664-38-2 EC: 231-633-2 Index: 015-011-00-6 REACH: 01-2119485924-24-XXXX	**Phosphoric acid**[1]	ATP CLP00	**5 - <10 %**
	Regulation 1272/2008	Skin Corr. 1B: H314 - Danger 	
CAS: 98-79-3 EC: 202-700-3 Index: Non-applicable REACH: 01-2120127172-69-XXXX	**Pidolic acid**[2]	Self-classified	**3 - <5 %**
	Regulation 1272/2008	Eye Dam. 1: H318 - Danger 	
CAS: 7758-99-8 EC: 231-847-6 Index: 029-023-00-4 REACH: 01-2119520566-40-XXXX	**Copper sulfate pentahydrate**[1]	ATP ATP17	**0.1 - <0.5 %**
	Regulation 1272/2008	Acute Tox. 4: H302; Aquatic Acute 1: H400; Aquatic Chronic 1: H410; Eye Dam. 1: H318 - Danger 	
CAS: 7446-20-0 EC: 231-793-3 Index: 030-006-00-9 REACH: 01-2119474684-27-XXXX	**zinc sulphate· 7 H2O**[1]	ATP CLP00	**0.1 - <0.5 %**
	Regulation 1272/2008	Acute Tox. 4: H302; Aquatic Acute 1: H400; Aquatic Chronic 1: H410; Eye Dam. 1: H318 - Danger 	
CAS: 10034-96-5 EC: 232-089-9 Index: Non-applicable REACH: 01-2119456624-35-XXXX	**manganese sulphate · (H2O)**[3]	Self-classified	**0.1 - <0.5 %**
	Regulation 1272/2008	Aquatic Chronic 2: H411; Eye Dam. 1: H318; STOT RE 2: H373 - 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 - <0.5 %**
	Regulation 1272/2008	Repr. 1B: H360FD - Danger 	

[1] Substances presenting a health or environmental hazard which meet criteria laid down in Regulation (EU) No. 2015/830
[2] Voluntarily-listed substance failing to meet any of the criteria set out in Regulation (EU) No. 2015/830
[3] Substance with a Union workplace exposure limit

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

Other information:

Identification	M-factor	
Copper sulfate pentahydrate CAS: 7758-99-8 EC: 231-847-6	Acute	10
	Chronic	1
zinc sulphate· 7 H2O CAS: 7446-20-0 EC: 231-793-3	Acute	1
	Chronic	1

Identification	Specific concentration limit
Phosphoric acid CAS: 7664-38-2 EC: 231-633-2	% (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

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures:

Request medical assistance immediately, 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:

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SECTION 4: FIRST AID MEASURES (continued)

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:

Request immediate medical assistance, showing the SDS of this product. Do not induce vomiting, because its expulsion from the stomach can be hazardous to the mucus of the main digestive tract, and also risk damage to the respiratory system through inhalation. Rinse out the mouth and throat, as they may have been affected during ingestion. In the case of loss of consciousness do not administer anything orally unless supervised by a doctor. Keep the person affected at rest.

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:

Non-applicable

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:

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:

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.

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SECTION 6: ACCIDENTAL RELEASE MEASURES (continued)

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.- Precautions for safe manipulation

Comply with the current legislation concerning the prevention of industrial risks. Keep containers hermetically sealed. 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.

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 to prevent ergonomic and toxicological risks

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.: 2 ºC

Maximum Temp.: 35 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:

2021 Code of Practice for the Chemical Agents Regulations:

Identification	Occupational exposure limits		
Phosphoric acid CAS: 7664-38-2 EC: 231-633-2	OEL (8h) OEL (15 min)		1 mg/m³ 2 mg/m³
Boric acid CAS: 10043-35-3 EC: 233-139-2	OEL (8h) OEL (15 min)		2 mg/m³
Disodium molybdate · 2H2O CAS: 10102-40-6 EC: Non-applicable	OEL (8h) OEL (15 min)		3 mg/m³
manganese sulphate · (H2O) CAS: 10034-96-5 EC: 232-089-9	OEL (8h) OEL (15 min)		0.2 mg/m³

DNEL (Workers):

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
Phosphoric acid	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 7664-38-2	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
EC: 231-633-2	Inhalation	Non-applicable	2 mg/m³	10.7 mg/m³	1 mg/m³
Copper sulfate pentahydrate	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 7758-99-8	Dermal	Non-applicable	Non-applicable	137 mg/kg	Non-applicable
EC: 231-847-6	Inhalation	Non-applicable	Non-applicable	1 mg/m³	1 mg/m³
zinc sulphate· 7 H2O	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 7446-20-0	Dermal	Non-applicable	Non-applicable	8.3 mg/kg	Non-applicable
EC: 231-793-3	Inhalation	Non-applicable	Non-applicable	1 mg/m³	Non-applicable
manganese sulphate · (H2O)	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 10034-96-5	Dermal	Non-applicable	Non-applicable	0.004 mg/kg	Non-applicable
EC: 232-089-9	Inhalation	Non-applicable	Non-applicable	Non-applicable	Non-applicable
Boric acid	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 10043-35-3	Dermal	Non-applicable	Non-applicable	392 mg/kg	Non-applicable
EC: 233-139-2	Inhalation	Non-applicable	Non-applicable	8.3 mg/m³	Non-applicable

DNEL (General population):

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
Phosphoric acid	Oral	Non-applicable	Non-applicable	0.1 mg/kg	Non-applicable
CAS: 7664-38-2	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
EC: 231-633-2	Inhalation	Non-applicable	Non-applicable	4.57 mg/m³	0.36 mg/m³
Copper sulfate pentahydrate	Oral	0.082 mg/kg	Non-applicable	0.041 mg/kg	Non-applicable
CAS: 7758-99-8	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
EC: 231-847-6	Inhalation	Non-applicable	Non-applicable	Non-applicable	Non-applicable
zinc sulphate· 7 H2O	Oral	Non-applicable	Non-applicable	0.83 mg/kg	Non-applicable
CAS: 7446-20-0	Dermal	Non-applicable	Non-applicable	8.3 mg/kg	Non-applicable
EC: 231-793-3	Inhalation	Non-applicable	Non-applicable	1.25 mg/m³	Non-applicable
manganese sulphate · (H2O)	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 10034-96-5	Dermal	Non-applicable	Non-applicable	0.002 mg/kg	Non-applicable
EC: 232-089-9	Inhalation	Non-applicable	Non-applicable	0.043 mg/m³	Non-applicable
Boric acid	Oral	0.98 mg/kg	Non-applicable	0.98 mg/kg	Non-applicable
CAS: 10043-35-3	Dermal	Non-applicable	Non-applicable	196 mg/kg	Non-applicable
EC: 233-139-2	Inhalation	Non-applicable	Non-applicable	4.15 mg/m³	Non-applicable

PNEC:

Identification				
Copper sulfate pentahydrate	STP	0.23 mg/L	Fresh water	0.0078 mg/L
CAS: 7758-99-8	Soil	65 mg/kg	Marine water	0.0052 mg/L
EC: 231-847-6	Intermittent	Non-applicable	Sediment (Fresh water)	87 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	676 mg/kg
zinc sulphate· 7 H2O	STP	0.1 mg/L	Fresh water	0.0206 mg/L
CAS: 7446-20-0	Soil	35.6 mg/kg	Marine water	0.0061 mg/L
EC: 231-793-3	Intermittent	Non-applicable	Sediment (Fresh water)	117.8 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	56.5 mg/kg
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	Non-applicable	Sediment (Marine water)	0.001 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)	Non-applicable
	Oral	Non-applicable	Sediment (Marine water)	Non-applicable

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

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

The use of protection equipment will be necessary if a mist forms or if the occupational exposure limits are exceeded.

C.- Specific protection for the hands

Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory hand protection	Chemical protective gloves (Material: Linear low-density polyethylene (LLDPE), Breakthrough time: > 480 min, Thickness: 0.062 mm)	CE CAT III	EN 420:2004+A1:2010	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.- Ocular and facial 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

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:	Non-applicable
Average molecular weight:	Non-applicable

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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
Color:	Aquamarine
Odor:	Characteristic
Odour threshold:	Non-applicable *

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:	Non-applicable *

Product description:

Density at 20 ºC:	1219.1 kg/m³
Relative density at 20 ºC:	1.219
Dynamic viscosity at 20 ºC:	Non-applicable *
Kinematic viscosity at 20 ºC:	Non-applicable *
Kinematic viscosity at 40 ºC:	Non-applicable *
Concentration:	Non-applicable *
pH:	<2
Vapour density at 20 ºC:	Non-applicable *
Partition coefficient n-octanol/water 20 ºC:	Non-applicable *
Solubility in water at 20 ºC:	Non-applicable *
Solubility properties:	Completely miscible
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *

Flammability:

Flash Point:	Non Flammable (>60 ºC)
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	Non-applicable *
Lower flammability limit:	Non-applicable *
Upper flammability limit:	Non-applicable *

Particle characteristics:

Median equivalent diameter:	Non-applicable

9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *
Corrosive to metals:	Non-applicable *
Heat of combustion:	Non-applicable *
Aerosols-total percentage (by mass) of flammable components:	Non-applicable *

Other safety characteristics:

Surface tension at 20 ºC:	Non-applicable *

*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)

Refraction index: 39 - 43

*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.

10.2 Chemical stability:

Chemically stable under the 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
Not applicable	Not applicable	Precaution	Not applicable	Avoid alkalis or strong bases

10.6 Hazardous decomposition products:

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: carbon dioxide (CO2), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

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: Corrosive product, if it is swallowed causes burns destroying the tissues. For more information about secondary effects from skin contact see section 2.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Prolonged inhalation of the product is corrosive to mucous membranes and the upper respiratory tract

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

- Contact with the skin: Above all, skin contact may occur as fabrics of all thicknesses can be destroyed, resulting in burns. For more information on the secondary effects see section 2.
- Contact with the eyes: Produces serious eye damage after contact.

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

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SECTION 11: TOXICOLOGICAL INFORMATION (continued)

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for the effects mentioned. For more information see section 3.
  IARC: Non-applicable
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met. However, it does contain substances classified as dangerous for this effect. For more information see section 3.

E- Sensitizing effects:

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

Other information:

Non-applicable

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
Phosphoric acid	LD50 oral	3500 mg/kg	Rat
CAS: 7664-38-2	LD50 dermal	2470 mg/kg	Rabbit
EC: 231-633-2	LC50 inhalation	>5 mg/L	
Pidolic acid	LD50 oral	>2000 mg/kg	
CAS: 98-79-3	LD50 dermal	>2000 mg/kg	
EC: 202-700-3	LC50 inhalation	>5 mg/L	
Copper sulfate pentahydrate	LD50 oral	482 mg/kg	Rat
CAS: 7758-99-8	LD50 dermal	>2000 mg/kg	
EC: 231-847-6	LC50 inhalation	>5 mg/L	
zinc sulphate· 7 H2O	LD50 oral	1710 mg/kg	Rat
CAS: 7446-20-0	LD50 dermal	>2000 mg/kg	
EC: 231-793-3	LC50 inhalation	>5 mg/L	
manganese sulphate · (H2O)	LD50 oral	>2000 mg/kg	
CAS: 10034-96-5	LD50 dermal	>2000 mg/kg	
EC: 232-089-9	LC50 inhalation	>5 mg/L	
Boric acid	LD50 oral	>5000 mg/kg	Rat
CAS: 10043-35-3	LD50 dermal	>2000 mg/kg	
EC: 233-139-2	LC50 inhalation	>5 mg/L	

Acute Toxicity Estimate (ATE mix):

ATE mix		Ingredient(s) of unknown toxicity
Oral	>2000 mg/kg (Calculation method)	Non-applicable
Dermal	>2000 mg/kg (Calculation method)	Non-applicable
Inhalation	>20 mg/L (4 h) (Calculation method)	Non-applicable

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SECTION 12: ECOLOGICAL INFORMATION

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

12.1 Toxicity:

Acute toxicity:

Identification	Concentration		Species	Genus
Copper sulfate pentahydrate	LC50	0.81 mg/L (96 h)	Cyprinus carpio	Fish
CAS: 7758-99-8	EC50	Non-applicable		
EC: 231-847-6	EC50	Non-applicable		
zinc sulphate· 7 H2O	LC50	>0.1 - 1 (96 h)		Fish
CAS: 7446-20-0	EC50	>0.1 - 1 (48 h)		Crustacean
EC: 231-793-3	EC50	>0.1 - 1 (72 h)		Algae
manganese sulphate · (H2O)	LC50	>1 - 10 (96 h)		Fish
CAS: 10034-96-5	EC50	>1 - 10 (48 h)		Crustacean
EC: 232-089-9	EC50	>1 - 10 (72 h)		Algae
Boric acid	LC50	447 mg/L (96 h)	Oncorhynchus mykiss	Fish
CAS: 10043-35-3	EC50	Non-applicable		
EC: 233-139-2	EC50	Non-applicable		

Chronic toxicity:

Identification	Concentration		Species	Genus
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:

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 fails to meet PBT/vPvB criteria

12.6 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	Dangerous

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

HP14 Ecotoxic, HP8 Corrosive

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). 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-dangerous residue. We do not recommended disposal down the drain. 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

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SECTION 13: DISPOSAL CONSIDERATIONS (continued)

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 2021 and RID 2021:

14.1	**UN number:**	UN3264
14.2	**UN proper shipping name:**	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid)
14.3	**Transport hazard class(es):**	8
	Labels:	8
14.4	**Packing group:**	II
14.5	**Environmental hazards:**	No
14.6	**Special precautions for user**	
	Special regulations:	274
	Tunnel restriction code:	E
	Physico-Chemical properties:	see section 9
	Limited quantities:	1 L
14.7	**Transport in bulk according to Annex II of Marpol and the IBC Code:**	Non-applicable

Transport of dangerous goods by sea:

With regard to IMDG 39-18:

14.1	**UN number:**	UN3264
14.2	**UN proper shipping name:**	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid)
14.3	**Transport hazard class(es):**	8
	Labels:	8
14.4	**Packing group:**	II
14.5	**Marine pollutant:**	No
14.6	**Special precautions for user**	
	Special regulations:	274
	EmS Codes:	F-A, S-B
	Physico-Chemical properties:	see section 9
	Limited quantities:	1 L
	Segregation group:	SGG1
14.7	**Transport in bulk according to Annex II of Marpol and the IBC Code:**	Non-applicable

Transport of dangerous goods by air:

With regard to IATA/ICAO 2021:

14.1	**UN number:**	UN3264
14.2	**UN proper shipping name:**	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid)
14.3	**Transport hazard class(es):**	8
	Labels:	8
14.4	**Packing group:**	II
14.5	**Environmental hazards:**	No
14.6	**Special precautions for user**	
	Physico-Chemical properties:	see section 9
14.7	**Transport in bulk according to Annex II of Marpol and the IBC Code:**	Non-applicable

SECTION 15: REGULATORY INFORMATION

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SECTION 15: REGULATORY INFORMATION (continued)

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

Candidate substances for authorisation under the Regulation (EC) No 1907/2006 (REACH): Boric acid

Substances included in Annex XIV of REACH ("Authorisation List") and sunset date: Non-applicable

Regulation (EC) No 1005/2009, about substances that deplete the ozone layer: Non-applicable

Article 95, REGULATION (EU) No 528/2012: Copper sulfate pentahydrate (Product-type 2) ; Boric acid (Product-type 8)

REGULATION (EU) No 649/2012, in relation to the import and export of hazardous chemical products: Non-applicable

Seveso III:

Non-applicable

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

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:

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:

Chemicals (Amendment) Act 2010 (No. 32 of 2010) as amended by S.I. No. 623/2015- Safety, Health and Welfare at Work (Chemical Agents) (Amendment) Regulations 2015
Chemicals Act 2008 (No. 13 of 2008)
Safety, Health and Welfare (chemical agents) (amendment) regulations 2021 (S.I. No. 232 of 2021) and associated Code of Practice
Chemical Agents Regulations (S.I. No. 619 of 2001)
European Communities (Waste Directive) Regulations, S.I. No. 126 of 2011
S.I. No. 315/2016 - European Union (Waste Directive) (Amendment) Regulations 2016.
S.I. No. 323/2020 - European Union (Waste Directive) Regulations 2020
Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015)
The Chemicals Act (CLP Regulation) Regulations 2011 (S.I. No. 102 of 2011)

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 (Regulation (EC) No 2015/830)

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

Non-applicable

Texts of the legislative phrases mentioned in section 2:

H318: Causes serious eye damage.
H412: Harmful to aquatic life with long lasting effects.
H314: Causes severe skin burns and eye damage.

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:

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SECTION 16: OTHER INFORMATION (continued)

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 Dam. 1: H318 - Causes serious eye damage.
Repr. 1B: H360FD - May damage fertility. May damage the unborn child.
Skin Corr. 1B: H314 - Causes severe skin burns and eye damage.
STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure.

Classification procedure:

Eye Dam. 1: Calculation method
Aquatic Chronic 3: Calculation method
Skin Corr. 1: Calculation method

Advice related to training:

Minimal 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:

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 -