Maxid Organic - A02616 - A02617 - A02618

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

1.1 Product identifier: Maxid Organic - A02616 - A02617 - A02618

Other means of identification:

Non-applicable

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

Relevant uses: Additive for fodder (animal feed). 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:

Indufarm N.V.
Leon Bekaertstraat 5
8770 Ingelmunster
Phone: +32 (0)51 62 42 45
info@indufarm.com
www.indufarm.com

1.4 Emergency telephone number: +32 (0)70 24 52 45 mo-su 24h

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

GB CLP Regulation:

Classification of this product has been carried out in accordance with GB CLP Regulation.

Acute Tox. 4: Acute toxicity if swallowed, Category 4, H302
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. 1B: Skin corrosion, Category 1B, H314
STOT SE 3: Respiratory tract toxicity, single exposure, Category 3, H335

2.2 Label elements:

GB CLP Regulation:

Danger

Hazard statements:

Acute Tox. 4: H302 - Harmful if swallowed.
Aquatic Chronic 3: H412 - Harmful to aquatic life with long lasting effects.
Skin Corr. 1B: H314 - Causes severe skin burns and eye damage.
STOT SE 3: H335 - May cause respiratory irritation.

Precautionary statements:

P280: Wear protective gloves/face protection/protective clothing/respiratory protection/protective footwear.
P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P501: Dispose of the contents and/or its container in line with regulations on dangerous waste or packaging and waste packaging respectively.

Supplementary information:

EUH071: Corrosive to the respiratory tract.

2.3 Other hazards:

Product fails to meet PBT/vPvB criteria

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS (continued)

3.1 Substance:

Non-applicable

3.2 Mixture:

Chemical description: Acid-based mixture of organic substances

Components:

In accordance with Annex II of The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020, the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 64-18-6	**Formic acid** Acute Tox. 3: H331; Acute Tox. 4: H302; Flam. Liq. 3: H226; Skin Corr. 1A: H314; EUH071 - Danger	**25 - <50 %**
CAS: 79-09-4	**propionic acid** Skin Corr. 1B: H314 - Danger	**10 - <25 %**
CAS: 64-19-7	**Acetic acid** Flam. Liq. 3: H226; Skin Corr. 1A: H314 - Danger	**5 - <10 %**
CAS: 79-33-4	**L-(+)-lactic acid** Eye Dam. 1: H318; Skin Irrit. 2: H315; EUH071 - Danger	**5 - <10 %**
CAS: 77-92-9	**Citric Acid** Eye Irrit. 2: H319; STOT SE 3: H335 - Warning	**2.5 - <5 %**
CAS: 7758-99-8	**Copper sulfate pentahydrate** Acute Tox. 4: H302; Aquatic Acute 1: H400; Aquatic Chronic 1: H410; Eye Dam. 1: H318 - Danger	**1 - <2.5 %**
CAS: 5970-45-6	**Zinc di(acetate) · 2H2O** Acute Tox. 4: H302; Aquatic Acute 1: H400; Aquatic Chronic 1: H410; Eye Irrit. 2: H319 - Warning	**<1 %**

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

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures:

Request medical assistance immediately, showing the SDS of this product.

By inhalation:

Remove the person affected from the area of exposure, provide with fresh air and keep at rest. In serious cases such as cardiorespiratory failure, artificial resuscitation techniques will be necessary (mouth to mouth resuscitation, cardiac massage, oxygen supply,etc.) requiring immediate medical assistance.

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:

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

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SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media:

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

Unsuitable extinguishing media:

IT IS RECOMMENDED NOT to use full jet water as an extinguishing agent.

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,...).

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. Evacuate the area and keep out those without protection. Personal protection equipment must be used against potential contact with the spilt product (See section 8). Above all prevent the formation of any vapour-air flammable mixtures, through either ventilation or the use of an inert medium. Destroy any source of ignition. Eliminate electrostatic charges by interconnecting all the conductive surfaces on which static electricity could form, and also ensuring that all surfaces are connected to the ground.

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.

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

Avoid the evaporation of the product as it contains flammable substances, which could form flammable vapour/air mixtures in the presence of sources of ignition. Control sources of ignition (mobile phones, sparks,...) and transfer at slow speeds to avoid the creation of electrostatic charges. Consult section 10 for 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.

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SECTION 7: HANDLING AND STORAGE (continued)

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.: 0 ºC

Maximum Temp.: 40 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:

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

Identification	Occupational exposure limits		
Formic acid	WEL (8h)	5 ppm	9.6 mg/m³
CAS: 64-18-6	WEL (15 min)		
propionic acid	WEL (8h)	10 ppm	31 mg/m³
CAS: 79-09-4	WEL (15 min)	15 ppm	46 mg/m³
Acetic acid	WEL (8h)	10 ppm	25 mg/m³
CAS: 64-19-7	WEL (15 min)	20 ppm	50 mg/m³
Copper sulfate pentahydrate	WEL (8h)		1 mg/m³
CAS: 7758-99-8	WEL (15 min)		2 mg/m³

DNEL (Workers):

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
Formic acid	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 64-18-6	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
EC: 200-579-1	Inhalation	Non-applicable	Non-applicable	Non-applicable	9.5 mg/m³
Acetic acid	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 64-19-7	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
EC: 200-580-7	Inhalation	Non-applicable	25 mg/m³	Non-applicable	25 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 di(acetate) · 2H2O	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 5970-45-6	Dermal	Non-applicable	Non-applicable	1.338 mg/kg	Non-applicable
EC: 209-170-2	Inhalation	Non-applicable	Non-applicable	4.71 mg/m³	Non-applicable

DNEL (General population):

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
Formic acid	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 64-18-6	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
EC: 200-579-1	Inhalation	Non-applicable	Non-applicable	Non-applicable	3 mg/m³

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
Acetic acid	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
CAS: 64-19-7	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
EC: 200-580-7	Inhalation	Non-applicable	25 mg/m³	Non-applicable	25 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 di(acetate) · 2H2O	Oral	Non-applicable	Non-applicable	0.669 mg/kg	Non-applicable
CAS: 5970-45-6	Dermal	Non-applicable	Non-applicable	0.669 mg/kg	Non-applicable
EC: 209-170-2	Inhalation	Non-applicable	Non-applicable	1.16 mg/m³	Non-applicable

PNEC:

Identification				
Formic acid	STP	7.2 mg/L	Fresh water	2 mg/L
CAS: 64-18-6	Soil	1.5 mg/kg	Marine water	0.2 mg/L
EC: 200-579-1	Intermittent	1 mg/L	Sediment (Fresh water)	13.4 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	1.34 mg/kg
Acetic acid	STP	85 mg/L	Fresh water	3.058 mg/L
CAS: 64-19-7	Soil	0.47 mg/kg	Marine water	0.306 mg/L
EC: 200-580-7	Intermittent	30.58 mg/L	Sediment (Fresh water)	11.36 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	1.136 mg/kg
Citric Acid	STP	1000 mg/L	Fresh water	0.44 mg/L
CAS: 77-92-9	Soil	33.1 mg/kg	Marine water	0.044 mg/L
EC: 201-069-1	Intermittent	Non-applicable	Sediment (Fresh water)	34.6 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	3.46 mg/kg
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 di(acetate) · 2H2O	STP	0.009 mg/L	Fresh water	0.002 mg/L
CAS: 5970-45-6	Soil	0 mg/kg	Marine water	0 mg/L
EC: 209-170-2	Intermittent	0.021 mg/L	Sediment (Fresh water)	0.008 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	0.001 mg/kg

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 <<UKCA marking>>. 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	Remarks
 Mandatory respiratory tract protection	Filter mask for gases and vapours	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.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

C.- Specific protection for the hands

Pictogram	PPE	Remarks
 Mandatory hand protection	Chemical protective gloves (Material: Linear low-density polyethylene (LLDPE), Breakthrough time: > 480 min, Thickness: 0.062 mm)	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	Remarks
 Mandatory face protection	Face shield	Clean daily and disinfect periodically according to the manufacturer´s instructions. Use if there is a risk of splashing.

E.- Body protection

Pictogram	PPE	Remarks
 Mandatory complete body protection	Disposable clothing for protection against chemical risks	For professional use only. Clean periodically according to the manufacturer´s instructions.
 Mandatory foot protection	Safety footwear for protection against chemical risk	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

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:	Characteristic
Colour:	Blue
Odour:	Pungent
Odour threshold:	Non-applicable *

Volatility:

Boiling point at atmospheric pressure:	106 ºC
Vapour pressure at 20 ºC:	2776 Pa
Vapour pressure at 50 ºC:	12779.85 Pa (12.78 kPa)

*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)

Evaporation rate at 20 ºC:	Non-applicable *
Product description:	
Density at 20 ºC:	1121.6 kg/m³
Relative density at 20 ºC:	1.122
Dynamic viscosity at 20 ºC:	1.59 cP
Kinematic viscosity at 20 ºC:	1.42 mm²/s
Kinematic viscosity at 40 ºC:	Non-applicable *
Concentration:	Non-applicable *
pH:	Non-applicable *
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:	Non-applicable *
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *
Flammability:	
Flash Point:	>65 ºC
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	427 ºC
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 *
Refraction index:	Non-applicable *

*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

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SECTION 10: STABILITY AND REACTIVITY (continued)

Not applicable	Not applicable	Precaution	Precaution	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 (CO_2), 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 : The consumption of a considerable dose can cause irritation in the throat, abdominal pain, nausea and vomiting.
- 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. However, it contains 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):

- 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, as it does not 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:

Causes irritation in respiratory passages, which is normally reversible and limited to the upper respiratory passages.

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 contains substances classified as dangerous for inhalation. 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.

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SECTION 11: TOXICOLOGICAL INFORMATION (continued)

Other information:

Non-applicable

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
Formic acid	LD50 oral	730 mg/kg	Rat
CAS: 64-18-6	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	7.85 mg/L (4 h)	Rat
propionic acid	LD50 oral	3455 mg/kg	
CAS: 79-09-4	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	>20 mg/L	
Copper sulfate pentahydrate	LD50 oral	482 mg/kg	Rat
CAS: 7758-99-8	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	>5 mg/L	
Citric Acid	LD50 oral	5400 mg/kg	Rat
CAS: 77-92-9	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	>5 mg/L	
Acetic acid	LD50 oral	>5000 mg/kg	
CAS: 64-19-7	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	>20 mg/L	
L-(+)-lactic acid	LD50 oral	3543 mg/kg	Rat
CAS: 79-33-4	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	>5 mg/L	
Zinc di(acetate) · 2H2O	LD50 oral	794 mg/kg	Rat
CAS: 5970-45-6	LD50 dermal	>5000 mg/kg	
	LC50 inhalation	>5 mg/L	

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:

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SECTION 12: ECOLOGICAL INFORMATION (continued)

Identification	Concentration		Species	Genus
Formic acid	LC50	130 mg/L (96 h)	Brachydanio rerio	Fish
CAS: 64-18-6	EC50	365 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	Non-applicable		
Acetic acid	LC50	75 mg/L (96 h)	Lepomis macrochirus	Fish
CAS: 64-19-7	EC50	47 mg/L (24 h)	Daphnia magna	Crustacean
	EC50	Non-applicable		
L-(+)-lactic acid	LC50	320 mg/L (96 h)	Brachydanio rerio	Fish
CAS: 79-33-4	EC50	240 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	3.5 mg/L (70 h)	Selenastrum capricornutum	Algae
Citric Acid	LC50	1516 mg/L (96 h)	Lepomis macrochirus	Fish
CAS: 77-92-9	EC50	160 mg/L (48 h)	N/A	Crustacean
	EC50	Non-applicable		
Copper sulfate pentahydrate	LC50	0.81 mg/L (96 h)	Cyprinus carpio	Fish
CAS: 7758-99-8	EC50	Non-applicable		
	EC50	Non-applicable		
Zinc di(acetate) · 2H2O	LC50	0.55 mg/L (96 h)	Oncorhynchus mykiss	Fish
CAS: 5970-45-6	EC50	Non-applicable		
	EC50	Non-applicable		

Chronic toxicity:

Identification	Concentration		Species	Genus
Formic acid	NOEC	Non-applicable		
CAS: 64-18-6	NOEC	100 mg/L	Daphnia magna	Crustacean
Acetic acid	NOEC	57.2 mg/L	Oncorhynchus mykiss	Fish
CAS: 64-19-7	NOEC	80 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

Identification	Degradability		Biodegradability	
Formic acid	BOD5	Non-applicable	Concentration	18 mg/L
CAS: 64-18-6	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	97 %
Acetic acid	BOD5	Non-applicable	Concentration	100 mg/L
CAS: 64-19-7	COD	Non-applicable	Period	14 days
	BOD5/COD	Non-applicable	% Biodegradable	74 %
Citric Acid	BOD5	Non-applicable	Concentration	10 mg/L
CAS: 77-92-9	COD	Non-applicable	Period	28 days
	BOD5/COD	Non-applicable	% Biodegradable	97 %

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SECTION 12: ECOLOGICAL INFORMATION (continued)

12.3 Bioaccumulative potential:

Identification	Bioaccumulation potential	
Formic acid	BCF	3.2
CAS: 64-18-6	Pow Log	
	Potential	Low
Acetic acid	BCF	3
CAS: 64-19-7	Pow Log	-0.71
	Potential	Low
Citric Acid	BCF	3
CAS: 77-92-9	Pow Log	-1.55
	Potential	Low

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
Formic acid	Koc	31	Henry	1.9E-2 Pa·m³/mol
CAS: 64-18-6	Conclusion	Very High	Dry soil	Non-applicable
	Surface tension	3.862E-2 N/m (25 ºC)	Moist soil	Non-applicable
propionic acid	Koc	Non-applicable	Henry	Non-applicable
CAS: 79-09-4	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	2.62E-2 N/m (25 ºC)	Moist soil	Non-applicable
Acetic acid	Koc	Non-applicable	Henry	Non-applicable
CAS: 64-19-7	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	2.699E-2 N/m (25 ºC)	Moist soil	Non-applicable
Citric Acid	Koc	Non-applicable	Henry	Non-applicable
CAS: 77-92-9	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	2.045E-2 N/m (350.93 ºC)	Moist soil	Non-applicable

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
20 01 14*	Acids	Dangerous

Type of waste:

HP14 Ecotoxic, HP5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity, HP6 Acute Toxicity, HP8 Corrosive

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations in accordance The Waste Regulations 2011, 2011 No. 988. As under 15 01 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 UK REACH the provisions related to waste management are stated:

UK legislation: The Waste Regulations 2011.

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SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land:

With regard to ADR 2021 and RID 2021:

14.1	**UN number:**	UN3265
14.2	**UN proper shipping name:**	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Formic 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

Transport of dangerous goods by sea:

With regard to IMDG 39-18:

14.1	**UN number:**	UN3265
14.2	**UN proper shipping name:**	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Formic 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 2022:

14.1	**UN number:**	UN3265
14.2	**UN proper shipping name:**	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Formic 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

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

Substances listed in UK REACH Authorisation List (Annex 14): Non-applicable
Substances listed in UK candidate list of substances of very high concern (SVHCs): Non-applicable

The Control of Major Accident Hazards Regulations 2015:

Non-applicable

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

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SECTION 15: REGULATORY INFORMATION (continued)

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:

The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020.
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2020.
Control of Substances Hazardous to Health Regulations 2002 (as amended)
EH40/2005 Workplace exposure limits.

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:
This safety data sheet has been designed in accordance with ANNEX II-The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020.

Texts of the legislative phrases mentioned in section 2:
H314: Causes severe skin burns and eye damage.
H318: Causes serious eye damage.
H335: May cause respiratory irritation.
H412: Harmful to aquatic life with long lasting effects.
H302: Harmful if swallowed.

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

GB CLP Regulation:
Acute Tox. 3: H331 - Toxic if inhaled.
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.
Eye Dam. 1: H318 - Causes serious eye damage.
Eye Irrit. 2: H319 - Causes serious eye irritation.
Flam. Liq. 3: H226 - Flammable liquid and vapour.
Skin Corr. 1A: H314 - Causes severe skin burns and eye damage.
Skin Corr. 1B: H314 - Causes severe skin burns and eye damage.
Skin Irrit. 2: H315 - Causes skin irritation.
STOT RE 1: H372 - Causes damage to organs through prolonged or repeated exposure (Inhalation).
STOT SE 3: H335 - May cause respiratory irritation.

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:

- 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 -