

**Vitalnova Links  
12067**

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

- 1.1 Product identifier:** Vitalnova Links  
12067
- Other means of identification:**  
Non-applicable
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**  
Relevant uses: Fertilizer. For professional 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:**  
Amega Sciences plc  
Unit 17 Lanchester Way  
NN11 8PH Daventry - Northamptonshire - United Kingdom  
Phone.: 44 1327 704444 - Fax: +44 (0) 1327 311 226  
admin@amega-sciences.com
- 1.4 Emergency telephone number:** +44 (0) 7802844234 (for Emergency ONLY)

**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
- 2.2 Label elements:**  
**CLP Regulation (EC) No 1272/2008:**  
**Hazard statements:**  
Aquatic Chronic 3: H412 - Harmful to aquatic life with long lasting effects.  
**Precautionary statements:**  
P273: Avoid release to the environment.  
P501: Dispose of contents/container in accordance with regulations on hazardous waste or packaging and packaging waste respectively.
- 2.3 Other hazards:**  
Product fails to meet PBT/vPvB criteria

\*\* Changes with regards to the previous version

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS \*\***

- 3.1 Substance:**  
Non-applicable
- 3.2 Mixture:**  
**Chemical description:** Miscellaneous 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	<b>Phosphoric acid<sup>(1)</sup></b> ATP CLP00 Regulation 1272/2008 Skin Corr. 1B: H314 - Danger	<b>1 - &lt;3 %</b>

<sup>(1)</sup> Substances presenting a health or environmental hazard which meet criteria laid down in Regulation (EU) No. 2015/830  
<sup>(2)</sup> Substance with a Union workplace exposure limit

\*\* Changes with regards to the previous version

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**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS \*\* (continued)**

Identification	Chemical name/Classification	Concentration
CAS: 7446-20-0 EC: 231-793-3 Index: 030-006-00-9 REACH: 01-2119474684-27-XXXX	<b>zinc sulphate · 7 H<sub>2</sub>O<sup>(1)</sup></b> ATP CLP00 Regulation 1272/2008 Acute Tox. 4: H302; Aquatic Acute 1: H400; Aquatic Chronic 1: H410; Eye Dam. 1: H318 - Danger	<1 %
CAS: 64-19-7 EC: 200-580-7 Index: 607-002-00-6 REACH: 01-2119475328-30-XXXX	<b>Acetic acid<sup>(2)</sup></b> ATP CLP00 Regulation 1272/2008 Flam. Liq. 3: H226; Skin Corr. 1A: H314 - Danger	<1 %
CAS: 10034-96-5 EC: 232-089-9 Index: Non-applicable REACH: 01-2119456624-35-XXXX	<b>manganese sulphate · (H<sub>2</sub>O)<sup>(2)</sup></b> Self-classified Regulation 1272/2008 Aquatic Chronic 2: H411; Eye Dam. 1: H318; STOT RE 2: H373 - Danger	<1 %

<sup>(1)</sup> Substances presenting a health or environmental hazard which meet criteria laid down in Regulation (EU) No. 2015/830

<sup>(2)</sup> 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	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
Acetic acid CAS: 64-19-7 EC: 200-580-7	% (w/w) >=90: Skin Corr. 1A - H314 25<= % (w/w) <90: 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

\*\* Changes with regards to the previous version

**SECTION 4: FIRST AID MEASURES**

**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:**

This product is not classified as hazardous when in contact with the skin. However, in case of skin contact it is recommended to remove contaminated clothes and shoes, rinse the skin or if necessary shower the affected person thoroughly with cold water and neutral soap. In case of serious reaction consult a doctor.

**By eye contact:**

Rinse eyes thoroughly with water for at least 15 minutes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, in which case removal could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS for 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:**

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,...) 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:

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.

### 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. Avoid splashes and pulverizations. 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.: 3 °C  
Maximum Temp.: 30 °C  
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		
	WEL (8h)	WEL (15 min)	
manganese sulphate · (H2O) CAS: 10034-96-5 EC: 232-089-9			0.05 mg/m <sup>3</sup>
Phosphoric acid CAS: 7664-38-2 EC: 231-633-2	WEL (8h)		1 mg/m <sup>3</sup>
	WEL (15 min)		2 mg/m <sup>3</sup>
Acetic acid CAS: 64-19-7 EC: 200-580-7	WEL (8h)	10 ppm	25 mg/m <sup>3</sup>
	WEL (15 min)	20 ppm	50 mg/m <sup>3</sup>

**DNEL (Workers):**

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
Phosphoric acid CAS: 7664-38-2 EC: 231-633-2	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Inhalation	Non-applicable	2 mg/m <sup>3</sup>	10.7 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
zinc sulphate · 7 H2O CAS: 7446-20-0 EC: 231-793-3	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	8.3 mg/kg	Non-applicable
	Inhalation	Non-applicable	Non-applicable	1 mg/m <sup>3</sup>	Non-applicable
Acetic acid CAS: 64-19-7 EC: 200-580-7	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Inhalation	Non-applicable	25 mg/m <sup>3</sup>	Non-applicable	25 mg/m <sup>3</sup>

**DNEL (General population):**

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
Phosphoric acid CAS: 7664-38-2 EC: 231-633-2	Oral	Non-applicable	Non-applicable	0.1 mg/kg	Non-applicable
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Inhalation	Non-applicable	Non-applicable	4.57 mg/m <sup>3</sup>	0.36 mg/m <sup>3</sup>
zinc sulphate · 7 H2O CAS: 7446-20-0 EC: 231-793-3	Oral	Non-applicable	Non-applicable	0.83 mg/kg	Non-applicable
	Dermal	Non-applicable	Non-applicable	8.3 mg/kg	Non-applicable
	Inhalation	Non-applicable	Non-applicable	1.25 mg/m <sup>3</sup>	Non-applicable
Acetic acid CAS: 64-19-7 EC: 200-580-7	Oral	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Dermal	Non-applicable	Non-applicable	Non-applicable	Non-applicable
	Inhalation	Non-applicable	25 mg/m <sup>3</sup>	Non-applicable	25 mg/m <sup>3</sup>

**PNEC:**

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**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)**

Identification				
zinc sulphate· 7 H <sub>2</sub> O CAS: 7446-20-0 EC: 231-793-3	STP	0.1 mg/L	Fresh water	0.0206 mg/L
	Soil	35.6 mg/kg	Marine water	0.0061 mg/L
	Intermittent	Non-applicable	Sediment (Fresh water)	117.8 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	56.5 mg/kg
Acetic acid CAS: 64-19-7 EC: 200-580-7	STP	85 mg/L	Fresh water	3.058 mg/L
	Soil	0.47 mg/kg	Marine water	0.306 mg/L
	Intermittent	30.58 mg/L	Sediment (Fresh water)	11.36 mg/kg
	Oral	Non-applicable	Sediment (Marine water)	1.136 mg/kg

**8.2 Exposure controls:**

**A.- General security and hygiene measures in the work place**

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	Protective gloves against minor risks			Replace gloves in case of any sign of damage. For prolonged periods of exposure to the product for professional users/industrials, we recommend using CE III gloves in line with standards EN 420:2004+A1:2010 and EN ISO 374-1:2016+A1:2018

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	Panoramic glasses against splash/projections.		EN 166:2002 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
	Work clothing			Replace before any evidence of deterioration. For periods of prolonged exposure to the product for professional/industrial users CE III is recommended, in accordance with the regulations in EN ISO 6529:2013, EN ISO 6530:2005, EN ISO 13688:2013, EN 464:1994.
	Anti-slip work shoes		EN ISO 20347:2012	Replace before any evidence of deterioration. For periods of prolonged exposure to the product for professional/industrial users CE III is recommended, in accordance with the regulations in EN ISO 20345:2012 y EN 13832-1:2007

**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

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**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)**

**Volatile organic compounds:**

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

V.O.C. (Supply):	0.23 % weight
V.O.C. density at 20 °C:	2.92 kg/m <sup>3</sup> (2.92 g/L)
Average carbon number:	2
Average molecular weight:	60.1 g/mol

**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 °C:	Liquid
Appearance:	Characteristic
Colour:	 Brown
Odour:	Characteristic
Odour threshold:	Non-applicable *

**Volatility:**

Boiling point at atmospheric pressure:	Non-applicable *
Vapour pressure at 20 °C:	Non-applicable *
Vapour pressure at 50 °C:	12370.82 Pa (12.37 kPa)
Evaporation rate at 20 °C:	Non-applicable *

**Product description:**

Density at 20 °C:	1250 - 1270 kg/m <sup>3</sup>
Relative density at 20 °C:	1.25 - 1.27
Dynamic viscosity at 20 °C:	Non-applicable *
Kinematic viscosity at 20 °C:	Non-applicable *
Kinematic viscosity at 40 °C:	Non-applicable *
Concentration:	Non-applicable *
pH:	4 - 6
Vapour density at 20 °C:	Non-applicable *
Partition coefficient n-octanol/water 20 °C:	Non-applicable *
Solubility in water at 20 °C:	
Solubility properties:	Miscible
Decomposition temperature:	Non-applicable *
Melting point/freezing point:	Non-applicable *
Explosive properties:	Non-applicable *
Oxidising properties:	Non-applicable *

**Flammability:**

Flash Point:	Non Flammable (>60 °C)
Heat of combustion:	Non-applicable *
Flammability (solid, gas):	Non-applicable *
Autoignition temperature:	Non-applicable *
Lower flammability limit:	Non-applicable *
Upper flammability limit:	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)**

**Explosive:**

Lower explosive limit: Non-applicable \*

Upper explosive limit: Non-applicable \*

**9.2 Other information:**

Surface tension at 20 °C: 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
Not applicable	Not applicable	Precaution	Precaution	Not applicable

**10.5 Incompatible materials:**

Acids	Water	Oxidising materials	Combustible materials	Others
Not applicable	Not applicable	Avoid direct impact	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<sub>2</sub>), 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: 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.

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: 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.

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

\*\* Changes with regards to the previous version

**SECTION 11: TOXICOLOGICAL INFORMATION \*\* (continued)**

- Contact with the skin: Based on available data, the classification criteria are not met. However, it contains substances classified as dangerous for skin contact. For more information see section 3.
- Contact with the eyes: 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.
- 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:
 

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 CAS: 7664-38-2 EC: 231-633-2	LD50 oral	3500 mg/kg	Rat
	LD50 dermal	2470 mg/kg	Rabbit
	LC50 inhalation	>5 mg/L (4 h)	
zinc sulphate · 7 H <sub>2</sub> O CAS: 7446-20-0 EC: 231-793-3	LD50 oral	1710 mg/kg	Rat
	LD50 dermal	>2000 mg/kg	
	LC50 inhalation	>5 mg/L	
Acetic acid CAS: 64-19-7 EC: 200-580-7	LD50 oral	2500 mg/kg	Rat
	LD50 dermal	>2000 mg/kg	
	LC50 inhalation	>20 mg/L	
manganese sulphate · (H <sub>2</sub> O) CAS: 10034-96-5 EC: 232-089-9	LD50 oral	>2000 mg/kg	
	LD50 dermal	>2000 mg/kg	
	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

\*\* Changes with regards to the previous version

\*\* Changes with regards to the previous version

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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:**

Identification	Acute toxicity		Species	Genus
zinc sulphate · 7 H <sub>2</sub> O CAS: 7446-20-0 EC: 231-793-3	LC50	>0.1 - 1 mg/L (96 h)		Fish
	EC50	>0.1 - 1 mg/L (48 h)		Crustacean
	EC50	>0.1 - 1 mg/L (72 h)		Algae
Acetic acid CAS: 64-19-7 EC: 200-580-7	LC50	75 mg/L (96 h)	Lepomis macrochirus	Fish
	EC50	47 mg/L (24 h)	Daphnia magna	Crustacean
	EC50	Non-applicable		
manganese sulphate · (H <sub>2</sub> O) CAS: 10034-96-5 EC: 232-089-9	LC50	>1 - 10 mg/L (96 h)		Fish
	EC50	>1 - 10 mg/L (48 h)		Crustacean
	EC50	>1 - 10 mg/L (72 h)		Algae

**12.2 Persistence and degradability:**

Identification	Degradability		Biodegradability	
Acetic acid CAS: 64-19-7 EC: 200-580-7	BOD5	Non-applicable	Concentration	100 mg/L
	COD	Non-applicable	Period	14 days
	BOD5/COD	Non-applicable	% Biodegradable	74 %

**12.3 Bioaccumulative potential:**

Identification	Bioaccumulation potential	
Acetic acid CAS: 64-19-7 EC: 200-580-7	BCF	3
	Pow Log	-0.71
	Potential	Low

**12.4 Mobility in soil:**

Identification	Absorption/desorption		Volatility	
Acetic acid CAS: 64-19-7 EC: 200-580-7	Koc	Non-applicable	Henry	Non-applicable
	Conclusion	Non-applicable	Dry soil	Non-applicable
	Surface tension	2.699E-2 N/m (25 °C)	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

\*\* Changes with regards to the previous version

**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

**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-dangerous residue. We do not recommend 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

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

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**SECTION 14: TRANSPORT INFORMATION**

**Transport of dangerous goods by land:**

With regard to ADR 2019 and RID 2019:

- |   |                |
|---|----------------|
| <b>14.1 UN number:</b>  | Non-applicable |
| <b>14.2 UN proper shipping name:</b>  | Non-applicable |
| <b>14.3 Transport hazard class(es):</b>   | Non-applicable |
| Labels:   | Non-applicable |
| <b>14.4 Packing group:</b>  | Non-applicable |
| <b>14.5 Environmental hazards:</b>  | No             |
| <b>14.6 Special precautions for user</b>  |                |
| Special regulations:  | Non-applicable |
| Tunnel restriction code:  | Non-applicable |
| Physico-Chemical properties:  | see section 9  |
| Limited quantities:   | Non-applicable |
| <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code:</b> | Non-applicable |

**Transport of dangerous goods by sea:**

With regard to IMDG 39-18:

- |   |                |
|---|----------------|
| <b>14.1 UN number:</b>  | Non-applicable |
| <b>14.2 UN proper shipping name:</b>  | Non-applicable |
| <b>14.3 Transport hazard class(es):</b>   | Non-applicable |
| Labels:   | Non-applicable |
| <b>14.4 Packing group:</b>  | Non-applicable |
| <b>14.5 Marine pollutant:</b>   | No             |
| <b>14.6 Special precautions for user</b>  |                |
| Special regulations:  | Non-applicable |
| EmS Codes:  |                |
| Physico-Chemical properties:  | see section 9  |
| Limited quantities:   | Non-applicable |
| Segregation group:  | Non-applicable |
| <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code:</b> | Non-applicable |

**Transport of dangerous goods by air:**

With regard to IATA/ICAO 2020:

- |   |                |
|---|----------------|
| <b>14.1 UN number:</b>  | Non-applicable |
| <b>14.2 UN proper shipping name:</b>  | Non-applicable |
| <b>14.3 Transport hazard class(es):</b>   | Non-applicable |
| Labels:   | Non-applicable |
| <b>14.4 Packing group:</b>  | Non-applicable |
| <b>14.5 Environmental hazards:</b>  | No             |
| <b>14.6 Special precautions for user</b>  |                |
| Physico-Chemical properties:  | see section 9  |
| <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code:</b> | Non-applicable |

**SECTION 15: REGULATORY INFORMATION**

**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): Non-applicable  
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

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**SECTION 15: REGULATORY INFORMATION (continued)**

Article 95, REGULATION (EU) No 528/2012: Non-applicable

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 ....):**

Non-applicable

**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 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

**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.:**

COMPOSITION/INFORMATION ON INGREDIENTS (SECTION 3, SECTION 11, SECTION 12):

- New declared substances
  - Acetic acid (64-19-7)
  - Phosphoric acid (7664-38-2)
  - manganese sulphate · (H<sub>2</sub>O) (10034-96-5)
  - zinc sulphate · 7 H<sub>2</sub>O (7446-20-0)
- Removed substances
  - sulphuric acid (7664-93-9)
  - iron (II) sulfate · 7(H<sub>2</sub>O) (7782-63-0)

CLP Regulation (EC) No 1272/2008 (SECTION 2, SECTION 16):

- Pictograms
- Hazard statements
- Precautionary statements

**Texts of the legislative phrases mentioned in section 2:**

H412: Harmful 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 Dam. 1: H318 - Causes serious eye damage.  
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.  
STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure.

**Classification procedure:**

\*\* Changes with regards to the previous version

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**SECTION 16: OTHER INFORMATION \*\* (continued)**

Aquatic Chronic 3: 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: 5-day biochemical oxygen demand

BCF: Bioconcentration factor

LD50: Lethal Dose 50

LC50: Lethal Concentration 50

EC50: Effective concentration 50

Log-POW: Octanol-water partition coefficient

Koc: Partition coefficient of organic carbon

*\*\* Changes with regards to the previous version*

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation at European and state level, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product, it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within our awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

- END OF SAFETY DATA SHEET -