SAFETY DATA SHEET
VLSE-191042
Date reviewed: 14/10/2020
Revision No.: 1

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1: Product Identifier

Trade name: VLSE-191042

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

Registered uses: Foliar applications for agricultural and horticultural crops
Uses advised against: None known

1.3: Details of the supplier of the safety data sheet

Company name: Verdesian Life Sciences Europe Limited
Address: 7 Rotherbrook Court
Bedford Road
Petersfield
GU32 3QG
United Kingdom
Telephone: +44(0) 1730 720 100
Homepage: www.vlsci.com

1.4: Emergency telephone number

Emergency telephone: +44 (0)1235 239670 (24hr)

Section 2: Hazards Identification

2.1 Classification of the substance or mixture

Classification under CLP: Eye Damage 1: H318
Aquatic Chronic 2: H411

2.2 Label Elements (In compliance with EC Regulation No. 1272/2008 (CLP), as amended)

Hazard pictograms:

Signal word: Danger

Hazard Statements

H318	Causes serious eye damage.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements

P102	Keep out of reach of children.
P273	Avoid
P280	Wear eye protection.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Immediately call a POISON CENTER/doctor.
P391	Collect spillage.
P501	Dispose of contents/container in accordance with local/national regulations.

2.3 Other hazards

None.

Section 3: Composition/information on ingredients

Product type: Proprietary multimineral mixture.

CAS No.	EC No.	Substance Name	Classification*	Concentration (%w/w)
10034-96-5	600-072-9	Manganese sulphate monohydrate	STOT RE 2 (H373) Aq Chron 2 (H411)	<5
7446-19-7	616-096-8	Zinc sulphate monohydrate	Acute Tox 4 (H302) Eye Dam 1 (H318) Aq Acute 1 (H400) Aq Chron 1 (H410)	<10
7758-99-8	231-847-6	Copper sulphate pentahydrate	Acute Tox 4 (H302) Eye Dam 1 (H318) Aq Acute 1 (H400) Aq Chron 1 (H410)	<5

*For full text of H statements see Section 16

Section 4: First Aid Measures

4.1 Description of first aid measures

Inhalation: Remove person to fresh air. If not breathing, give artificial respiration. If irritation persists, contact physician.

Skin contact: Wash thoroughly with soap and water.

Eye contact: Immediately flush with copious amounts of water for 15 minutes. If irritation persists, contact physician.

Ingestion: Give glass of water if the victim is conscious. Never give water to an unconscious person. Do not induce vomiting, unless told to do so by the Poison Control Centre or physician. If vomiting occurs naturally, rinse mouth and repeat administration of water. Contact physician or Poison Control Centre.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.

Skin contact: There may be irritation and redness at the site of contact.

Eye contact: There may be irritation and redness. The eyes may water profusely.

Ingestion: There may be soreness and redness of the mouth and throat. Nausea and stomach pain may occur. There may be vomiting.

Delayed/immediate effects: Immediate effects can be expected after short-term exposure.

4.3 Indication of any immediate medical attention and treatment needed

Immediate/special treatment: Not applicable. Treat symptomatically.

Section 5: Firefighting Measures

5.1 Extinguishing media

Suitable: Foam, dry powder, water spray jet, carbon dioxide.

Unsuitable: Not determined.

5.2 Special hazards arising from the substance or mixture

Exposure hazards: Risk of formation of toxic pyrolysis products: toxic fumes of metal and carbon oxides.

5.3 Advice for firefighters

Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin or eyes. Fire residues and contaminated firefighting water must be disposed of in accordance with local regulations.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Refer to Section 8 of the SDS. Use personal protective equipment. Avoid breathing vapours or mist. Ensure adequate ventilation.

6.2 Environmental Precautions

Environmental precautions: Prevent leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods for cleaning up

Clean-up procedures: Isolate spill area. Contain the spillage using bunding or dike to prevent spread over a wide area. Collect liquid portion if clean and re-use it. Absorb the residual product with an absorbent such as clay, sand, or soil. Use lime (calcium oxide) or soda ash (sodium carbonate) to form insoluble salts. Shovel, vacuum or sweep up the spilled material

including absorbent into a plastic container and dispose in accordance with applicable local regulations. Avoid contamination of water bodies (streams, lakes, etc.) and sewers during clean-up and disposal. Use protective clothing and gloves if skin or eye contact is possible. Wear approved respirator and eye protection if aerosol is generated. In case of spillage into water body, where possible remove containers with products from the water. Advise local authorities of spillage.

6.4 Reference to other sections

Reference to other sections: Refer to Section 8 of the SDS.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Handling: Avoid skin contact or ingestion of the product whilst handling. Wash hands after handling. Do not eat, drink or smoke while handling the product (see Section 8 for details).

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions: Keep out of reach of children. Do not store with food, feed, or other materials for human or animal consumption. Do not store in direct sunlight. Keep container tightly closed. Store at temperatures between freezing and 25°C.

Suitable packaging: Not applicable.

7.3 Specific end use(s)

Specific end use: See product use, Section 1.2.

Section 8: Exposure controls/personal protection

8.1 Control parameters

Workplace exposure limits: No data available.
DNEL/PNEC: No data available.

8.2 Exposure controls

Engineering measures: Not required under normal conditions. If eye or skin contact can occur, washing facility for eyes and skin should be available nearby.

Environmental: At recommended rates VLSE-191042 is not phytotoxic or harmful to the environment. Elements present in the product are essential for healthy growth of plants and are commonly applied to agricultural and horticultural crops. May be harmful to aquatic life in high concentrations due to presence of micronutrients.

Hand protection: Not required under normal working conditions. Recommended for repeated or prolonged skin contact and for workers with dermatitis.

Eye protection: Wear eye protection.

Skin protection: Not required under normal conditions. Use protective clothing to prevent repeated or prolonged skin contact.

Respiratory protection: General ventilation is sufficient for intended use. Use approved respirator if aerosol conditions exist and whenever workplace conditions warrant respirator use.

Thermal hazards: No data available. In the event of fire, the product may emit toxic fumes of metal and carbon oxides.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Form/state	Liquid	**Explosion limit**	No data available.
Colour	Brown	**Vapour pressure**	No data available.
Odour	Characteristic	**Vapour density**	No data available.
Odour threshold	No data available	**Relative density**	1.30 g/ml
pH	2.5 - 3.5	**Solubility in water**	Forms suspension in water.
Melting point	No data available.	**Part. Coeff. N-octanol/water**	No data available.
Freezing point	No data available.	**Auto-ignition temperature**	No data available.
Initial boiling point	No data available.	**Decomposition temperature**	No data available.
Boiling range	No data available.	**Viscosity**	No data available.
Flash point	No data available.	**Explosive properties**	No data available.
Evaporation rate	No data available.	**Oxidizing properties**	No data available.
Flammability	No data available.	**Specific Gravity**	No data available.

9.2 Other information

Other information: No data available.

Section 10: Stability and Reactivity

10.1 Reactivity

Reactivity: No dangerous reactions known if used as directed.

10.2 Chemical stability

Chemical stability: Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions: No data available.

10.4 Conditions to avoid

Conditions to avoid: Incompatible materials.

10.5 Incompatible materials

Materials to avoid: Avoid contact with strong alkaline materials and magnesium metal.

10.6 Hazardous decomposition products

Decomp. Products: In the event of fire, see Section 5.

Section 11: Toxicological Information

11.1 Acute toxicity

Acute Toxicity	Not determined
Eye damage/irritation:	Eye Damage 1 (based on mixture composition)
Skin corrosion/irritation:	Not determined
Respiratory or Skin sensitisation:	Mists may cause cough and irritation of nose and throat
STOT (single exposure):	Not determined
STOT (repeated):	Not determined
Germ cell mutagenicity:	Not determined
Carcinogenicity:	Not determined
Reproductive and lactation toxicity:	Not determined
Aspiration hazard:	Not determined

Section 12: Ecological Information

12.1 Toxicity

Ecological data on the complete product are not available.

12.2 Persistence and degradability

Persistence/biodegradability: No data available.

12.3 Bio accumulative potential

Bioaccumulative potential: No data available.

12.4 Mobility in soil

Mobility: No data available.

12.5 Results of PBT and vPvB assessment

PBT identification: This product has not been evaluated for PBT/vPvB characteristics.

12.6 Other adverse effects

May be harmful to aquatic life in high concentrations due to presence of micronutrients.

Section 13: Disposal Considerations

13.1 Waste treatment methods

Disposal procedure: Consult local guidelines for disposal regulations.
Recovery operations: Not applicable.
Disposal of packaging: Completely empty the container into the application equipment. Rinse with water and empty the rinsate into the application equipment. Then dispose of the container in a sanitary landfill or by incineration if allowed by local authorities.

Section 14: Transport Information

14.1 UN Number

UN number : 3082

14.2 UN proper shipping name

Shipping name: Environmentally hazardous substance, liquid, n.o.s. (Zinc sulphate monohydrate, Manganese sulphate monohydrate, Copper sulphate pentahydrate)

14.3 Transport hazard classes

Transport class: 9

Transport label:

14.4 Packing group

Packing group: III

14.5 Environmental hazards

Environmentally hazardous substance/marine pollutant

14.6 Special precautions for user

Classification code (ADR, RID, ADN): M7

Hazard identification number (ADR): 90

EmS code (IMDG): F-A, S-F

Emergency action code: 2Z

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable.

Section 15: Regulatory Information

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

Specific regulations: Not applicable.

15.2 Chemical Safety Assessment

A chemical safety assessment has not been carried out for the substances in this mixture.

Section 16: Other Information

Phrases in Sections 2-3:	H302	Harmful if swallowed
	H318	Causes serious eye damage
	H373	May cause damage to organs through prolonged or repeated exposure
	H400	Very toxic to aquatic life
	H410	Very toxic to aquatic life with long lasting effects
	H411	Toxic to aquatic life with long lasting effects
Other information:	This safety data sheet is prepared in accordance with Regulation (EC) No. 1907/2006 (REACH) and 1272/2008 (CLP) as amended in each case.	
Abbreviations:	CLP:	Classification, Labelling and Packaging.
	DNEL:	Derived No Effect Level.
	LD50:	Median lethal dose.
	PBT:	Persistent, Bioaccumulative and Toxic substance.
	PNEC:	Predicted No-Effect Concentration.
	REACH:	Registration, Evaluation, Authorisation and Restriction of Chemicals.
	vPvB:	Very Persistent and very Bioaccumulative.
Legal disclaimer:	The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The company shall not be held liable for any damage resulting from handling or from contact with the above product.	