SAFETY DATA SHEET

R-Leaf®

Compilation date: 11/01/2022

Revision No: 1

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

1.1. Product identifier

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

Product name: R-Leaf®

Use of substance / mixture: Micronutrient foliar fertiliser

1.3. Details of the supplier of the safety data sheet

Company name: Crop Intellect Ltd
Riseholme College
Lincoln
LN2 2LG
United Kingdom

Tel: +44 (0) 7500 794140

Email: apostolos@cropintellect.co.uk

1.4. Emergency telephone number

Emergency tel: +44 (0) 7500 794140 or your local poisoning center
(office hours only)

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Classification under CLP: Eye Dam. 1: H318; Aquatic Chronic 3: H412

Most important adverse effects: Causes serious eye damage. Harmful to aquatic life with long lasting effects.

2.2. Label elements

Label elements:

Hazard statements: H318: Causes serious eye damage.
H412: Harmful to aquatic life with long lasting effects.

Hazard pictograms: GHS05: Corrosion

Signal words: Danger

Precautionary statements: P273: Avoid release to the environment.
P280: Wear eye protection, face protection.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501: Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

[cont...]

2.3. Other hazards

PBT: This product is not identified as a PBT/vPvB substance.

Section 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients:

MANGANESE DINITRATE

EINECS	CAS	PBT / WEL	CLP Classification	Percent
233-828-8	17141-63-8	-	Aquatic Chronic 3: H412; Skin Corr. 1C: H314; STOT RE 2: H373; Acute Tox. 4: H302; Ox. Sol. 3: H272	1-10%

ZINC OXIDE

-	1314-13-2	-	Aquatic Chronic 1: H410; Aquatic Acute 1: H400	1-10%

SODIUM N-LAUROYLSARCOSINATE

205-281-5	137-16-6	-	Acute Tox. 1: H330; Eye Dam. 1: H318; Skin Irrit. 2: H315	<1%

Section 4: First aid measures

4.1. Description of first aid measures

Skin contact: Remove all contaminated clothes and footwear immediately unless stuck to skin. Drench the affected skin with running water for 10 minutes or longer if substance is still on skin. If irritation persists seek medical attention.

Eye contact: Bathe the eye with running water for 15 minutes. Transfer to hospital for specialist examination.

Ingestion: Wash out mouth with water. Do not induce vomiting. Give 1 cup of water to drink every 10 minutes. If unconscious, check for breathing and apply artificial respiration if necessary. If unconscious and breathing is OK, place in the recovery position. Transfer to hospital as soon as possible.

Inhalation: Inhalation of product is unlikely Remove casualty to fresh air. If breathing difficulties persist seek medical attention.

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

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

Eye contact: Corneal burns may occur. May cause permanent damage.

Ingestion: There may be difficulty swallowing. Blood may be vomited. There may be bleeding from the mouth or nose.

Inhalation: There may be shortness of breath with a burning sensation in the throat. Exposure may cause coughing or wheezing.

[cont...]

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

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

Section 5: Fire-fighting measures

5.1. Extinguishing media

Immediate / special treatment: Eye bathing equipment should be available on the premises.

Extinguishing media: This product is not flammable and does not support combustion Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

5.2. Special hazards arising from the substance or mixture

Exposure hazards: Corrosive. In combustion emits toxic fumes.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Do not attempt to take action without suitable protective clothing - see section 8 of SDS. Turn leaking containers leak-side up to prevent the escape of liquid.

6.2. Environmental precautions

Environmental precautions: Do not discharge into drains or rivers. Contain the spillage using bunding.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Absorb into dry earth or sand. Transfer to a closable, labelled salvage container for disposal by an appropriate method.

6.4. Reference to other sections

Reference to other sections: Refer to section 8 of SDS.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: Shake container well before use Avoid direct contact with the substance. Usual hygiene practices apply. Ensure there is sufficient ventilation of the area. Do not handle in a confined space. Avoid the formation or spread of mists in the air.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a cool, well ventilated area. Keep container tightly closed.

Suitable packaging: Must only be kept in original packaging.

7.3. Specific end use(s)

Specific end use(s): No data available.

[cont...]

Section 8: Exposure controls/personal protection

8.1. Control parameters

Hazardous ingredients:

ZINC OXIDE

Workplace exposure limits: Respirable dust

State	8 hour TWA	15 min. STEL	8 hour TWA	15 min. STEL
UK	5 mg/m3	10 mg/m3	-	-

DNEL/PNEC Values

Hazardous ingredients:

SODIUM N-LAUROYLSARCOSINATE

Type	Exposure	Value	Population	Effect
DNEL	Oral	0.15mg/kg	General Population	Systemic
DNEL	Inhalation	5mg/m3	General Population	Systemic
PNEC	Fresh water	29.7ug/L	-	-
PNEC	Marine water	3ug/L	-	-

8.2. Exposure controls

Engineering measures: Ensure there is sufficient ventilation of the area.

Respiratory protection: Self-contained breathing apparatus must be available in case of emergency.

Hand protection: Impermeable gloves.

Eye protection: Tightly fitting safety goggles. Ensure eye bath is to hand.

Skin protection: Impermeable protective clothing.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

State: Liquid

Colour: Cream

Odour: Characteristic odour

Evaporation rate: Negligible

Oxidising: Non-oxidising (by EC criteria)

Solubility in water: Miscible in all proportions

Viscosity: Viscous

Kinematic viscosity: 500cps

Viscosity test method: Brookfield

Boiling point/range°C: >95

Melting point/range°C: No data available.

Flammability limits %: lower: Not applicable.

upper: Not applicable.

Flash point°C: >93

Part.coeff. n-octanol/water: Not applicable.

Autoflammability°C: Not applicable.

[cont...]

Vapour pressure: Not applicable.

Relative density: 1.4 - 1.6

pH: 6 - 8

VOC g/l: 0

9.2. Other information

Section 10: Stability and reactivity

10.1. Reactivity

Other information: No data available.

Reactivity: Stable under recommended transport or storage conditions.

10.2. Chemical stability

10.3. Possibility of hazardous reactions

Chemical stability: Stable under normal conditions.

Hazardous reactions: Hazardous reactions will not occur under normal transport or storage conditions.

Decomposition may occur on exposure to conditions or materials listed below.

10.4. Conditions to avoid

Conditions to avoid: Heat.

10.5. Incompatible materials

10.6. Hazardous decomposition products

Materials to avoid: Oxidising agents. Acids.

Haz. decomp. products: In combustion emits toxic fumes.

Section 11: Toxicological information

11.1. Information on toxicological effects

Hazardous ingredients:

ZINC OXIDE

DUST/MIST	RAT	4H LC50	5.7	mg/l
IPR	RAT	LD50	240	mg/kg
ORAL	RAT	LD50	>8437	mg/kg
ORL	MUS	LD50	7950	mg/kg

SODIUM N-LAUROYLSARCOSINATE

DUST/MIST	RAT	4H LC50	0.05-0.5	mg/l
ORAL	RAT	LD50	>5000	mg/kg

[cont...]

Relevant hazards for product:

Hazard	Route	Basis
Serious eye damage/irritation	OPT	Hazardous: calculated

Symptoms / routes of exposure

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

Eye contact: Corneal burns may occur. May cause permanent damage.

Ingestion: There may be difficulty swallowing. Blood may be vomited. There may be bleeding from the mouth or nose.

Inhalation: There may be shortness of breath with a burning sensation in the throat. Exposure may cause coughing or wheezing.

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

Section 12: Ecological information

12.1. Toxicity

Hazardous ingredients:

ZINC OXIDE

ALGAE	72H ErC50	0.17	mg/l
BLUEGILL (Lepomis macrochirus)	96H LC50	>320	mg/l
Daphnia magna	48H EC50	24.6	mg/l

SODIUM N-LAUROYLSARCOSINATE

Daphnia magna	48H EC50	29.7	mg/l
GREEN ALGA (Selenastrum capricornutum)	72H ErC50	79	mg/l
ZEBRAFISH (Brachydanio rerio)	96H LC50	107	mg/l

12.2. Persistence and degradability

Persistence and degradability: Biodegradable.

12.3. Bioaccumulative potential

12.4. Mobility in soil

Bioaccumulative potential: No bioaccumulation potential.

Mobility: Readily absorbed into soil.

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

PBT identification: This product is not identified as a PBT/vPvB substance.

Other adverse effects: Negligible ecotoxicity.

[cont...]

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal operations: Transfer to a suitable container and arrange for collection by specialised disposal company.

Recovery operations: Not applicable.

Disposal of packaging: Triple rinse and puncture the empty container Do not reuse the container for any purpose Dispose of waste and residues in accordance with local authority requirements

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

Section 14: Transport information

Transport class: This product does not require a classification for transport.

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

Chemical safety assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

Section 16: Other information

Other information

Other information: according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

* indicates text in the SDS which has changed since the last revision.

Phrases used in s.2 and s.3: H272: May intensify fire; oxidiser.

H302: Harmful if swallowed.

H314: Causes severe skin burns and eye damage.

H315: Causes skin irritation.

H318: Causes serious eye damage.

H330: Fatal if inhaled.

H373: May cause damage to organs through prolonged or repeated exposure.

H410: Very toxic to aquatic life with long lasting effects.

H412: Harmful to aquatic life with long lasting effects.

Legal disclaimer: The product should not be used for other purposes than those specified under section

Attention of users is drawn to the possible risks incurred when the product is used for purposes other than those for which it was designed. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. The company shall not be held liable for any damage resulting from handling or from contact with the above product.