

Microcystin LR

Cat#: orb65803 (Safety Data Sheet)

Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

- 1.1 Product Code:** orb65803
Product Name: Microcystin LR
 cyclo[2,3-didehydro-N-methylalanyl-D-alanyl-L-leucyl-(3S)-3-methyl-D-.beta.-aspartyl-L-arginyl-(2S,3S,4E,6E,8S,9S)-3-amino-9-methoxy-2,6,8-trimethyl-10-phenyl-4,6-decadienoyl-D-.gamma.-glutamyl]; Cyanoginosin-LR; Toxin T 17 (Microcyst is aeruginosa);
- Synonyms:**

- Relevant identified uses of the substance or mixture and uses advised against:**
Relevant identified uses: For research use only, not for human or veterinary use.

- 1.3 Details of the Supplier of the Safety Data Sheet:**
Web site address: www.biorbyt.com
- 1.4 Emergency telephone number:**
Emergency Contact: **Phone:** +44 (0)1223 859 353
Fax: +44 (0)1223 280 240
Email: info@biorbyt.com

Section 2. Hazards Identification

- 2.1 Classification of the Substance or Mixture:**
- Acute Toxicity: Oral, Category 2**
Acute Toxicity: Skin, Category 2
Skin Corrosion/Irritation, Category 2
Serious Eye Damage/Eye Irritation, Category 2
Skin Sensitization, Category 1
Specific Target Organ Toxicity (single exposure), Category 3
- 2.2 Label Elements:**
GHS Signal Word: Danger

GHS Hazard Phrases:

- H300: Fatal if swallowed.
- H310: Fatal in contact with skin.
- H315: Causes skin irritation.
- H317: May cause an allergic skin reaction.
- H319: Causes serious eye irritation.
- H335: May cause respiratory irritation.

GHS Precaution Phrases:

- P261: Avoid breathing {dust/fume/gas/mist/vapours/spray}.
- P262: Do not get in eyes, on skin, or on clothing.
- P264: Wash {hands} thoroughly after handling.
- P272: Contaminated work clothing should not be allowed out of the workplace.
- P280: Wear {protective gloves/protective clothing/eye protection/face protection}.

GHS Response Phrases:

- P301+310: IF SWALLOWED: P310: Immediately call a POISON CENTER or doctor/physician.
- P302+352: IF ON SKIN: Wash with plenty of soap and water.
- P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P321: Specific treatment {see ... on this label}.
- P330: Rinse mouth.
- P332+313: If skin irritation occurs, get medical advice/attention.
- P333+313: If skin irritation or rash occurs, seek medical advice/attention.
- P337+313: If eye irritation persists, get medical advice/attention.
- P361+364: Take off immediately all contaminated clothing and wash it before reuse.
- P362+364: Take off contaminated clothing and wash it before reuse.

GHS Storage and Disposal Phrases:

2.3 Adverse Human Health Please refer to Section 7 for Storage and Section 13 for Disposal information.

Effects and Symptoms:

- Causes serious eye irritation.
- Causes skin irritation.
- Fatal if swallowed or in contact with skin.
- Material may be irritating to the mucous membranes and upper respiratory tract.
- May be harmful by inhalation.
- May cause an allergic skin reaction.
- May cause skin or respiratory system irritation.
- To the best of our knowledge, the toxicological properties have not been thoroughly investigated

Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
Orb65803	Microcystin-LR	100.0 %	NA NA	Acute Tox.(O) 2: H300 Acute Tox.(D) 2: H310 Skin Corr. 2: H315 Skin Sens. 1: H317 Eye Damage 2A: H319 STOT (SE) 3: H335 H336

Section 4. First Aid Measures

4.1 Description of First Aid Measures:

In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel.
Get immediate medical attention.

In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
Use water spray to cool fire-exposed containers.
Unsuitable Extinguishing Media: A solid water stream may be inefficient.

5.2 Flammable Properties and No data available.

Hazards:

No data available.

Flash Pt:

No data.

Explosive Limits:

LEL: No data.

UEL: No data.

Autoignition Pt:

No data.

Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand

5.3 (NIOSH approved or

equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

Avoid breathing vapors and provide adequate ventilation.

6.1 Protective Precautions,

As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,

Protective Equipment and

and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

Emergency Procedures:

Take steps to avoid release into the environment, if safe to do so.

6.2 Environmental

Precautions:

Contain spill and collect, as appropriate.

6.3 Methods and Material For

Containment and cleaning

Transfer to a chemical waste container for disposal in accordance with local regulations.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling:

Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid exposure.

7.2 Precautions To Be Taken in Storing:

Keep container tightly closed. Store in accordance with information listed on the product insert.

Section 8. Exposure Controls/Personal Protection

8.2 Exposure Controls:

8.2.1 Engineering Controls

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne

(Ventilation etc.):

levels below recommended exposure limits.

8.2.2 Personal protection equipment:

Eye Protection:

Safety glasses

Protective Gloves:

Compatible chemical-resistant gloves

Other Protective Clothing:

Lab coat

Respiratory Equipment

NIOSH approved respirator, as conditions warrant.

(Specify Type):

Work/Hygienic/Maintenance

Do not take internally.

Practices:

Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
Wash thoroughly after handling.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [] Gas [] Liquid [X] Solid
A clear

Appearance and Odor: film

Solubility Notes: ~10 mg/ml in EtOH, DMSO, & DMF; water;

9.2 Other Information

Molecular Formula &

Weight: C49H74N10O12 995.2

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.

Unstable

10.2 Stability: [] Stable [X]

Stable if stored in accordance with information listed on the product insert.

10.3 Stability Note(s):

Will

Polymerization:

occur [] Will not occur [X]

10.4 Conditions To Avoid:

No data available.

10.5 Incompatibility - Materials

strong oxidizing agents

To Avoid:

10.6 Hazardous	carbon dioxide
Decomposition or	carbon monoxide
Byproducts:	nitrogen oxides

Section 11. Toxicological Information

11.1 Information on Toxicological Effects:

The toxicological effects of this product have not been thoroughly studied Microcystin-LR - Toxicity Data:
 Oral LD50 (rat): >5 mg/kg; Oral LD50 (mouse): 5 mg/kg; Intraperitoneal LD50 (rat): 50 ug/kg;
 Intraperitoneal LD50 (mouse): 32500 ng/kg;

Chronic Toxicological Effects: Microcystin-LR - Investigated as a hormone, mutagen, natural product, and reproductive effector Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information. Microcystin-LR RTECS Number: GT2810000

Carcinogenicity/Other Information: The International Agency for Research on Cancer (IARC) has determined that Microcystin-LR is possibly carcinogenic to humans (Group 2B).

Carcinogenicity NTP? No IARC Monographs? Yes OSHA Regulated? No

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
Orb65803	Microcystin-LR	n.a.	2B	n.a.	n.a.

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Toxic solids, organic, n.o.s. (Microcystin-LR)
DOT Hazard Class: 6.1 POISON
UN/NA Number: UN2811 **Packing Group:** II

14.2 LAND TRANSPORT (European ADR/RID):

ADR/RID Shipping Name: Toxic solids, organic, n.o.s. (Microcystin-LR)
UN Number: 2811 **Packing Group:** II
Hazard Class: 6.1 - POISON

14.3 AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Toxic solids, organic, n.o.s. (Microcystin-LR)
UN Number: 2811 **Packing Group:** II
Hazard Class: 6.1 - POISON **IATA Classification:** 6.1

Additional Transport Information: Transport in accordance with local, state, and federal regulations.
 When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10.
 Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.

Section 15. Regulatory Information

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
Orb65803	Microcystin-LR	No	No	No
CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists		
Orb65803	Microcystin-LR	CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No		

European Community Hazard Symbol codes:

European Community Risk and Safety Phrases:

- R11 Highly flammable.
- R36 Irritating to eyes.
- S16 Keep away from sources of ignition.
Avoid contact with skin and
- S24/25 eyes.
- S26 In case of contact with eyes, rinse immediately with plenty of water and seek
medical advice.
- S33 Take precautionary measures against static
discharges.
- S36/37/39 Wear suitable protective clothing, gloves and eye/face
protection.
- S45 In case of accident or if you feel unwell, seek medical advice immediately (show
the label whenever
possible.)
- S53 Avoid exposure - obtain special instructions
before use.

Regulatory Information Statement: This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.