

Cayman Chemical Company
 1180 E. Ellsworth Rd.
 Ann Arbor, MI 48108



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

1.1 Product Code: 10007187
Product Name: Microcystin-LA
Synonyms: cyclo[2,3-didehydro-N-methylalanyl-D-alanyl-L-leucyl-(3S)-3-methyl-D-β-aspartyl-L-alanyl-(2S,3S,4E,6E,8S,9S)-3-amino-9-methoxy-2,6,8-trimethyl-10-phenyl-4,6-decadienoyl-D-γ-glu-tamyl]; Cyanoginosin-LA; Toxin BE4 (Microcystis aeruginosa);

1.2 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
Company Name: Cayman Chemical Company
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
Alternate Emergency Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887
Information: Cayman Chemical Company +1 (734)971-3335
Web site address: www.caymanchem.com

Section 2. Hazards Identification

GHS Classification	Placard	Key word	GHS hazard phrase
Flammable Liquids, Category 2	Flame	Danger	Highly flammable liquid and vapor
Acute Toxicity: Inhalation, Category 3	Skull and crossbones	Danger	Toxic if inhaled
Acute Toxicity: Oral, Category 3	Skull and crossbones	Danger	Toxic if swallowed
Acute Toxicity: Skin, Category 3	Skull and crossbones	Danger	Toxic in contact with skin
Target Organ Systemic Toxicity (single exposure), Category 1	Health hazard	Danger	Causes damage to organs {eyes}.

GHS Hazard Phrases:
 H225: Highly flammable liquid and vapor.
 H331: Toxic if inhaled.
 H301: Toxic if swallowed.
 H311: Toxic in contact with skin.
 H370: Causes damage to organs {eyes}.

GHS Precaution Phrases:
 P210: Keep away from {heat/sparks/open flames/hot surfaces}. - No smoking.
 P280: Wear {protective gloves/protective clothing/eye protection/face protection}.
 P261: Avoid breathing {dust/fume/gas/mist/vapours/spray}.
 P264: Wash {hands} thoroughly after handling.
 P361+364: Take off immediately all contaminated clothing and wash it before reuse.
 P260: Do not breathe {dust/fume/gas/mist/vapours/spray}.

GHS Response Phrases:
 P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
 P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P311: Call a {POISON CENTER/doctor/...}.
 P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 P330: Rinse mouth.
 P302+352: IF ON SKIN: Wash with plenty of soap and water.
 P312: Call a {POISON CENTER/doctor/...} if you feel unwell.
 P321: Specific treatment {see ... on this label}.

P307+311: IF exposed: Call a POISON CENTER or doctor/physician.

GHS Storage and Disposal Phrases:

Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.3 Adverse Human Health Effects and Symptoms:

Cannot be made nonpoisonous.
 Harmful vapors.
 Material may be irritating to the mucous membranes and upper respiratory tract.
 May be fatal or cause blindness if swallowed.
 May cause eye, skin, or respiratory system irritation.
 Toxic if swallowed, inhaled, or absorbed through the skin.
 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
 To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Target Organs:

Central nervous system, Eyes, Gastrointestinal System, Respiratory system, Skin.

LD 50 / LC 50:

Please refer to Section 11.

Medical Conditions Generally Aggravated By Exposure:

No data available.

Section 3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	EC#	Risk Phrases	RTECS #
1. Microcystin-LA	96180-79-9	0.095 %	NA	R23-27/28-36/37/38-43	GT2805000
2. Methanol	67-56-1	99.905 %	200-659-6	R11-23/24/25-39/23/24/25	PC1400000

Section 4. First Aid Measures

4.1 Description of First Aid Measures:
4.1.1 In Case of Inhalation:

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

4.1.2 In Case of Skin Contact:

Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

4.1.3 In Case of Eye Contact:

Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.

4.1.4 In Case of Ingestion:

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.

4.2 Important Symptoms and Effects, Both Acute and Delayed:

Overexposure may cause: confusion, dermatitis, headache, drowsiness, dizziness, gastrointestinal disturbance, optic nerve damage (blindness), nausea, unconsciousness, vomiting, visual disturbance, weakness.
 May cause convulsions.
 Once methanol is absorbed into the body, it is very slowly eliminated.

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

No data available.

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 Hazards:

Can release vapors that form explosive mixtures at temperatures at or above the flashpoint.
 Container explosion may occur under fire conditions.
 Emits toxic fumes under fire conditions.
 Sensitive to static discharge.
 Vapors can travel to a source of ignition and flash back.

Flash Pt:	11.00 C Method Used: Closed Cup
Autoignition Pt:	385.00 C
Explosive Limits:	LEL: 6.0% at 25.0 C UEL: 36.0% at 25.0 C
Hazardous Combustion Products:	No data available.
5.3 Fire Fighting Instructions:	As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes. Note: Flammable as diluted in methanol.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures:	Avoid breathing vapors and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
6.2 Environmental Precautions:	Take steps to avoid release into the environment, if safe to do so.
6.3 Methods and Material For Containment and Cleaning Up:	Contain spill and collect, as appropriate. 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 prolonged or repeated exposure. Keep away from sources of ignition. Take precautionary measures against static discharge.
7.2 Precautions To Be Taken in Storing:	Keep away from heat, sparks, and flame. Keep container tightly closed. Store in accordance with information listed on the product insert.
Hazard Label Information:	Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation. Wash thoroughly after handling.

Section 8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TWA	Other Limits
1. Microcystin-LA	96180-79-9	No data.	No data.	No data.
2. Methanol	67-56-1	PEL: 200 ppm	TLV: 200 ppm STEL: 250 ppm	No data.
Hazardous Components (Chemical Name)	CAS #	Britain EH40	France VL	Europe
1. Microcystin-LA	96180-79-9	No data.	No data.	No data.
2. Methanol	67-56-1	TWA: 266 mg/m3 (200 ppm) STEL: 333 mg/m3 (250 ppm)	TWA: 260 mg/m3 (200 ppm) STEL: 1300 mg/m3 (1000 ppm)	TWA: 260 mg/m3

Protective Equipment Summary - Hazard Label Information:	Compatible chemical-resistant gloves Eye wash station in work area Lab coat Safety glasses Safety shower in work area Vent Hood
8.2.1 Engineering Controls (Ventilation etc.):	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.
8.2.2.1 Eye Protection:	Safety glasses
8.2.2.2 Protective Gloves:	Compatible chemical-resistant gloves
Other Protective Clothing:	Lab coat
8.2.2.3 Respiratory Equipment (Specify Type):	NIOSH approved respirator, as conditions warrant.
Work/Hygienic/Maintenance Practices:	Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling.

8.2.3 Environmental Exposure Controls: No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

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

Appearance and Odor: Solution

Melting Point: No data.

Boiling Point: No data.

Flash Pt: 11.00 C Method Used: Closed Cup

Evaporation Rate: No data.

Explosive Limits: LEL: 6.0% at 25.0 C UEL: 36.0% at 25.0 C

Vapor Pressure (vs. Air or mm Hg): 96 MM_HG at 20.0 C

Vapor Density (vs. Air = 1): No data.

Specific Gravity (Water = 1): No data.

Solubility in Water: No data.

Autoignition Pt: 385.00 C

Explosive Properties: No data available.

Oxidizing Properties: No data available.

9.2 Other Information

Percent Volatile: No data.

Formula: C₄₆H₆₇N₇O₁₂

Molecular Weight: 910.10

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.

10.2 Stability: Unstable [] Stable [X]

10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.

10.4 Conditions To Avoid: heat, flames and sparks

10.3 Polymerization: Will occur [] Will not occur [X]

10.5 Incompatibility - Materials To Avoid: acids
acid anhydrides
acid chlorides
alkali metals
oxidizing agents
reducing agents

10.6 Hazardous Decomposition Or Byproducts: carbon dioxide
carbon monoxide

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.

Microcystin-LA - Toxicity Data: Intraperitoneal LD50 (rat): 122 µg/kg; Intraperitoneal LD50 (mouse): 25 µg/kg;

Methanol - Toxicity Data: Oral LD50 (rat): 5,600 mg/kg; Oral LD50 (rabbit): 14,200 mg/kg; Inhalation LC50 (rat): 64,000 ppm (4h); Inhalation LC50 (mouse): 61,100 ppm (134 m); Skin LD50 (rabbit): 15,800 mg/kg; Oral LDLO (human): 143 mg/kg;

Methanol - Irritation Data: Skin (rabbit): 20 mg (24h) moderate; Eyes (rabbit): 40 mg moderate; Eyes (rabbit): 100 mg (24h) moderate;

Chronic Toxicological Effects: Methanol - Investigated as a mutagen 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.
 Methanol RTECS Number: PC1400000
 Microcystin-LA RTECS Number: GT2805000

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. Microcystin-LA	96180-79-9	n.a.	n.a.	n.a.	n.a.
2. Methanol	67-56-1	n.a.	n.a.	n.a.	n.a.

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

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 Methanol Solution
DOT Hazard Class: 3 (6.1)
DOT Hazard Label: FLAMMABLE LIQUID, POISON
UN/NA Number: 1230
Packing Group: II

14.1 LAND TRANSPORT (European ADR/RID)

ADR/RID Shipping Name Methanol Solution
UN Number: 1230
Hazard Class: 3 (6.1) - FLAMMABLE LIQUID, POISON
Packing Group: II

14.3 AIR TRANSPORT (ICAO/IATA)

ICAO/IATA Shipping Name Methanol Solution
UN Number: 1230
Hazard Class: 3 (6.1) - FLAMMABLE LIQUID, POISON
Packing Group: II
IATA Classification: 3, 6.1

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information

European Community Hazard Symbol codes F: Highly Flammable; T: Toxic

European Community Risk and Safety Phrases

- R11 - Highly flammable.
- R39/23/24/25 - Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
- S7 - Keep container tightly closed.
- S16 - Keep away from sources of ignition.
- S24/25 - Avoid contact with skin and eyes.
- S33 - Take precautionary measures against static discharges.
- S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.



SAFETY DATA SHEET

Microcystin-LA

- 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.

US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Microcystin-LA	96180-79-9	No	No	No	No
2. Methanol	67-56-1	No	Yes 5000 LB	Yes	No

Other US EPA or State Lists

Hazardous Components (Chemical Name)	CAS #	CAA HAP,ODC	CWA NPDES	TSCA	CA PROP.65
1. Microcystin-LA	96180-79-9	No	No	No	No
2. Methanol	67-56-1	HAP	No	Inventory	Yes

Regulatory Information Statement: This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

Section 16. Other Information

Revision Date: 08/14/2013

Company Policy or Disclaimer

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required