



# SAFETY DATA SHEET

## 1. Product and Company Information

<b>Product name</b>	Mixed analytical standard Microcystins RR-YR-LR (from <i>Microcystis aeruginosa</i> )
<b>Synonym</b>	MCYST-RR-YR-LR,
<b>Chemical formula</b>	C <sub>49</sub> H <sub>75</sub> N <sub>13</sub> O <sub>12</sub> (MCYST-RR) - C <sub>52</sub> H <sub>72</sub> N <sub>10</sub> O <sub>13</sub> (MCYST-YR) - C <sub>49</sub> H <sub>74</sub> N <sub>10</sub> O <sub>12</sub> (MCYST-LR)
<b>Supplier</b>	Cyano Biotech GmbH, Magnusstrasse 11, D-12489 Berlin, Germany Phone: +49 30 6392 4481 Fax: +49 30 6392 4488 E-mail: info@cyano-biotech.com

## 2. Hazards Identification

<b>Special indications of hazards</b>	<b>Risk advice to man and the environment</b>
	Highly flammable. Toxic by inhalation, in contact with skin and if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

## 3. Composition / Information on Ingredients

<b>Product</b>	Solution of 5 µg/ml of each Microcystin-RR, -YR and -LR in MeOH, approx. 0.001 %
<b>CAS Number</b>	None
<b>EC Number</b>	None
<b>Ingredient name</b>	Methanol, > 99,9 %
<b>CAS Number</b>	67-56-1
<b>EC Number</b>	200-659-6
<b>Symbols</b>	F, T
<b>R-Phrases</b>	11-23/24/25-39/23/24/25

## 4. First Aid Measures

<b>General advice</b>	Consult a physician. Show this safety data sheet to the doctor in attendance.
<b>Inhalation</b>	If inhaled, move person into fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
<b>Ingestion</b>	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
<b>Skin Contact</b>	In case of skin contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
<b>Eye Contact</b>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Check for and remove any contact lenses. Assure adequate flushing by separating the eyelids with fingers. Get medical attention.

## 5. Fire-Fighting Measures

<b>Extinguishing media</b>	Suitable: Water spray, carbon dioxide, dry chemical powder, or appropriate foam.
<b>Special risks</b>	Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions. Explosion Hazards: Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.
<b>Special protective equipment for fire fighters</b>	Wear self-contained breathing apparatus and protective clothing if necessary to prevent contact with skin and eyes.

## 6. Accidental Release Measures

<b>Personal precautions</b>	Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
<b>Methods for cleaning up</b>	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite). Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

## 7. Handling and Storage

<b>Handling</b>	Do not breathe vapor or mist. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Do not use if skin is cut or scratched. Wash thoroughly after handling. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
<b>Storage</b>	Store in cool place not above -20°C (-4°F). Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks, and open flame.

## 8. Exposure Controls/Personal Protection

<b>Respiratory protection</b>	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH(US) or CEN (EU).
<b>Skin and body protection</b>	Choose body protection according to the amount and concentration of the dangerous substance at the work place.
<b>Hand protection</b>	The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.
<b>Eye protection</b>	Chemical safety goggles  Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

## 9. Physical and Chemical Properties

<b>Physical state</b>	liquid
<b>Color</b>	colorless
<b>pH</b>	no data available
<b>Melting point</b>	-98,0 °C
<b>Boiling point</b>	64,0 - 65,0 °C
<b>Flash point</b>	11,0 °C - closed cup
<b>Ignition temperature</b>	455 °C
<b>Lower explosion limit</b>	6 %(V)
<b>Upper explosion limit</b>	36 %(V)
<b>Vapour pressure</b>	546,6 hPa at 50,0 °C 130,3 hPa at 20,0 °C
<b>Density</b>	0,79 g/cm <sup>3</sup>
<b>Water solubility</b>	completely miscible
<b>Partition coefficient:</b>	log Pow: -0,77 (n-octanol/water)

## 10. Stability and Reactivity

<b>Stability</b>	Stable under recommended storage conditions.
<b>Conditions to avoid</b>	Heat, flames and sparks.
<b>Materials to avoid</b>	Acids, acid chlorides, acid anhydrides, oxidizing agents, alkali metals, reducing agents.
<b>Hazardous Decomposition Products</b>	Hazardous decomposition products formed under fire conditions. - Carbon oxides
<b>Hazardous Polymerization</b>	Will not occur.

## 11. Toxicological Information

<b>Acute toxicity</b>	LD50 Oral - rat - 5.628 mg/kg LC50 Inhalation - rat - 4 h - 64000 ppm LD50 Dermal - rabbit - 15.800 mg/kg
<b>Irritation and corrosion</b>	Skin - rabbit - Skin irritation - 24 h Eyes - rabbit - Eye irritation - 24 h
<b>Sensitisation</b>	no data available
<b>Chronic exposure</b>	No component of this product present at levels greater than or equal to 0,1% is identified as probable, possible or confirmed human carcinogen by IARC.
<b>Signs and symptoms of exposure</b>	Nausea, headache, and vomiting. Gastrointestinal disturbances. Dizziness. Weakness. Confusion. Drowsiness. Unconsciousness. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Ingestion can cause: Methyl alcohol may be fatal or cause blindness if swallowed. Cannot be made non-poisonous.
<b>Route of exposure</b>	Skin Contact: May cause skin irritation. Skin Absorption: Toxic if absorbed through skin. Eye Contact: May cause eye irritation. Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. Toxic if inhaled. Ingestion: Toxic if swallowed.
<b>Target organ information</b>	Eyes. Kidney. Liver. Heart. Central nervous system.

## 12. Ecological Information

### Ecotoxicological effects

<b>Toxicity to fish</b>	LC50 - <i>Oncorhynchus mykiss</i> (rainbow trout) - 19.000,00 mg/l - 96 h LC50 - <i>Cyprinus carpio</i> (Carp) - 36.000,00 mg/l - 48 h
<b>Toxicity to daphnia and other aquatic invertebrates.</b>	EC50 - <i>Daphnia magna</i> (Water flea) - 24.500,00 mg/l - 48 h EC100 - <i>Daphnia magna</i> (Water flea) - 10.000,00 mg/l - 24 h

## 13. Disposal Considerations

<b>Substance disposal</b>	Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.
<b>Contaminated packaging</b>	Dispose of as unused product.

## 14. Transport Information

### RID/ADR

**UN#** 1992  
**Class** 3  
**PG** II  
**Subrisk** 6.1  
**Proper Shipping Name** Methanol solution

### IMDG

**UN#** 1992  
**Class** 3  
**PG** II  
**Subrisk** 6.1  
**Proper Shipping Name** Methanol solution  
**Marine Pollutant** No  
**Severe Marine Pollutant** No

### IATA

**UN#** 1992  
**Class** 3  
**PG** II  
**Subrisk** 6.1  
**Proper Shipping Name** Methanol solution  
**Inhalation Packing Group I** No

## 15. Regulatory Information

Classification and labeling according to EU directives.

### **Labeling according to EC Directives**

#### **EC Label**

#### **Hazard symbols**

F Highly flammable  
T Toxic

#### **R-phrases(s)**

R11 Highly flammable.  
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.  
R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

#### **S-phrases(s)**

S 7 Keep container tightly closed.  
S16 Keep away from sources of ignition - No smoking.  
S36/37 Wear suitable protective clothing and gloves.  
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

## 16. Other Information

### **Warranty**

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 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. Cyano Biotech GmbH shall not be held liable for any damage resulting from handling or from contact with the above product.

### **Disclaimer**

For R&D use only. Not for drug, household or other uses.

### **Date updated**

15<sup>th</sup> of July 2009