


 Safety Data Sheet: [Microcystin RR from Fermentek](#)
**1. Identification of the substance/mixture and of the Company**
**1.1. Product identifiers**

Product name	<i>Microcystin-RR</i>	Formula	$C_{49}H_{75}N_{13}O_{12}$
Product Code	MCRR	RTECS	N.A.
CAS #	111755-37-4	Molecular weight	1037.60
EC Number #	621-470-9	Substance? Mixture?	Substance
Synonyms	• <i>Microcystin LA, 3-L-arginine-5-L-arginine-</i> • <i>Cyanoginosin RR</i>		
		• <i>Cyanoviridin RR</i>	• <i>Toxin T17</i>
Source	<i>Microcystis aeruginosa</i>	Date of version	30 May, 2021

**1.2. Intended uses of the substance or mixture and uses advised against**

<b>1.2.1. Intended use:</b>	<b>1.2.2. Uses advised against:</b>
<ul style="list-style-type: none"> <li>• Research and development.</li> <li>• Laboratory reagent.</li> <li>• To be used by professionals only</li> </ul>	<ul style="list-style-type: none"> <li>• Not for drug,</li> <li>• Not to be used in humans or animals.</li> <li>• Not food additive</li> </ul>

**1.3. Details of the supplier of the safety data sheet**
**FERMENTEK Ltd**  
 4 Yatziv street, POB 47120  
 Jerusalem 97800,  
 Israel

 Tel: +972 2 5853953  
 Fax: +972 2 5853943  
 eMail:  
 Fermentek@Fermentek.com  
 Website: WWW.Fermentek.com

**1.4. Emergency Telephone number**

 For chemical emergency spill, leak, fire, exposure, or accident calls CHEMTREC day or night:  
 Within USA and Canada: 1-800-424-9300. Outside USA and Canada: +1 703-527-3887

This company is the manufacturer of the product, and the supplier of the safety data sheet

**1.5. Reach:**

See section 15

**2. Hazards' identification**
**2.1. Classification of the substance or mixture**
**2.1.1. GHS Classification According to EU Reg. 1272/2008 and US OSHA 1910.1200)**

Acute Toxicity, Ingestion	Category 2	H300	Fatal if swallowed
Acute Toxicity, Skin contact	Category 1	H310	Fatal in contact with skin.
Acute Toxicity, inhalation	Category 1	H330	Fatal if inhaled (dust, mist)
Skin Irritation	Category 2	H315	Causes skin irritation
Eye irritation	Category 2	H319	Causes serious eye irritation.
Skin sens.	Category 1	H317	May cause an allergic skin reaction.
STOT SE	Category 3	H335	May cause respiratory irritation

**2.2. GHS Label elements, including precautionary statements**
**2.2.1. Pictogram:**

**2.2.2. Signal word: {Danger}**
**2.2.3. Hazard Statements**

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H300+H310+H330	Fatal if swallowed, in contact with skin or if inhaled.
H315	Causes skin irritation
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction
H335	May cause respiratory irritation.

#### 2.2.4. GHS Precautionary Statements

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapours/spray
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P320	Specific treatment is urgent
P330	Rinse mouth
P264	Wash face, hands and any exposed skin thoroughly after handling
P270	Do not eat, drink or smoke when using this product.
P301+P310+P330	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.
	IF INHALLED: Move to fresh air. Call a physician or poison control center immediately
P308 + P313	IF exposed or concerned: Get medical advice/ attention.

### 3. Composition/information on ingredients

Substance	
Substance name:	Microcystin-RR
Concentration	<=100%
CAS Registry#:	111755-37-4
EC#:	621-470-9
Molecular Formula:	C <sub>49</sub> H <sub>75</sub> N <sub>13</sub> O
Molecular Weight:	1037.60
Classification	Acute Tox. 2; H300 Eye Irrit. 2; H319
Mixture?	Substance.

### 4. First Aid Measures

#### 4.1. Description of First Aid Measures

<b>General advice:</b>	Immediate medical attention is required.
<b>Eye contact:</b>	Immediately flush with plenty of water. After initial flushing, remove any contact lenses continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Call a physician immediately.
<b>Skin Contact:</b>	Wash immediately off with soap and plenty of water. Consult a physician immediately.
<b>Ingestion:</b>	Never give anything by mouth to an unconscious person. Wash out mouth with water. Do not induce vomiting. Transfer to hospital as soon as possible. Immediately consult a physician.
<b>Inhalation:</b>	Immediate medical attention is required. Remove to fresh air. If not breathing, give artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

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

<b>General symptoms</b>	Symptoms include shivering, and rapid, deep breathing, progressing to twitching, convulsions, gasping respirations, and death. Shock and death occur within a matter of hours.
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#### 4.3. Indication of any immediate medical attention and special treatment needed

<b>Note to physicians</b>	<i>Treat symptomatically.</i>
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### 5. Fire-fighting measures

#### 5.1. Extinguishing media

<b>Suitable extinguishing media</b>	<i>Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.</i>
<b>Unsuitable extinguishing media</b>	<i>None known</i>

#### 5.2. Other information

<b>Hazardous combustion products</b>	<i>Carbon oxides, Nitrogen oxides (NOx).</i>
<b>Advice for firefighters</b>	<i>Wear self-contained breathing apparatus for fire fighting if necessary. Wear protective suit.</i>

### 6. Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

<b>Personal precautions</b>	<i>Use personal protective equipment as required. Keep people away from and upwind of spill/leak.</i>
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#### 6.2. Environmental precautions

<b>Environmental precautions</b>	<i>Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.</i>
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#### 6.3. Methods and material for containment and cleaning up

<b>Methods for containment:</b>	<i>Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.</i>
<b>Methods for cleaning up:</b>	<i>Clean-up should be dealt with only by qualified personnel familiar with the specific substance. Cover liquid spill with sand, earth or other non-combustible absorbent material (e.g. sand, earth, diatomaceous earth, and vermiculite). Cover powder spill with plastic sheet or tarp to minimize spreading. Sweep up and shovel into suitable containers for disposal.</i>

### 7. Handling and storage

#### 7.1. Precautions for safe handling

<b>Advice on safe handling:</b>	<i>Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product.</i>
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#### 7.2. Conditions for safe storage, including any incompatibilities

<b>Storage Conditions:</b>	<i>Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Store at -20 °C.</i>
<b>Suitable packaging</b>	<i>Must only be kept in original packaging.</i>
<b>Incompatible materials:</b>	<i>None known based on information available.</i>

### 8. Exposure Controls/Personal Protection

#### 8.1. Control parameters

<b>Control parameters</b>	<i>Components with workplace control parameters</i>
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#### 8.2. Exposure controls

<b>Appropriate engineering controls</b>	<i>Showers, Eyewash stations, Ventilation systems Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Use fumehood for routine work.</i>
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#### 8.3. Personal protective equipment

<i>[PPE=Personal Protection Equipment]</i>
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PPE: Respiratory protection	Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) 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).
PPE: Hand Protection:	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal techniques to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices, and wash and dry hands
PPE: Eye Protection:	Use a face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU)
PPE: Skin and Body Protection:	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

## 9. Physical and chemical properties

### 9.1. Physical / chemical properties

Physical State at room temperature	Solid / powder
Color	
No further safety relevant data are available	

## 10. Stability and reactivity

Reactivity:	No information available.
Chemical stability:	Stable under normal conditions.
Conditions to avoid	Heat, flames and sparks. Sunlight.
Incompatible materials	Strong reducers and oxidizers
Possibility of Hazardous Reactions	None under normal processing
Hazardous decomposition products	Hazardous decomposition products formed under fire conditions.: Carbon oxides, Nitrogen oxides (NO <sub>x</sub> )

## 11. Toxicological information

### 11.1. Information on toxicological effects

**To the best of our knowledge, the toxicological effects of this product have not been thoroughly studied yet.**

#### 11.1.1. Acute Toxicity

Oral toxicity estimate:	500mg/kg
Serious eye damage	No quantitative data available
Respiratory or skin sensitization/corrosion:	No data available

#### 11.1.2. CRM (Carcinogene, Mutagene, Reproductive hazards)

Germ cell mutagenicity:	No data available
Carcinogenicity:	This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification. Suspected of causing cancer. Limited evidence of carcinogenicity in animal studies.  No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive toxicity / Teratogenicity:	No data available

### 11.2. Additional information

RTECS number	N.A.
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## 12. Ecological Information

<b>Eco-Toxicity</b>	No further relevant information available
<b>Other adverse effects</b>	No further relevant information available.

## 13. Disposal Considerations

### 13.1. Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations
Contaminated packaging	Dispose of as unused product

## 14. Transport information

### 14.1. UN number, Proper Shipping Name, Transport Hazard Class, packing group

	US DOT	US IATA	US IMDG	US ADR/RID
UN Number UN proper shipping name	Not dangerous for transport (Microcystin-RR)	Not dangerous for transport (Microcystin-RR)	Not dangerous for transport (Microcystin-RR)	Not dangerous for transport (Microcystin-RR)
Transport Hazard Class & Packing Group	Not regulated	Not regulated	Not regulated	Not regulated

### 14.2. Additional information

			Not marine pollutant	
Excepted quantities (EQ)	Not applicable			
De Minimis exemption	Not applicable			

## 15. Regulatory information

### 15.1. Safety, health and environmental regulations/legislation

USA EPA / TSCA	This product is not listed on the USA EPA TSCA (it is for research)
EU ECHA Status	This product is registered with the EU ECHA, Number <b>621-470-9</b> ANNEX III: <b>Listed</b> REACH: <b>Preregistered</b>

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## 16. Other information

### 16.1. Date of revision:

Sunday, 30 May, 2021 15:05

### 16.2. Department issuing this SDS

Quality systems and regulatory affairs

### 16.3. General Disclaimer

- The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication.
- The information given here is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification.
- The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

### 16.4. The users'/employers' responsibility:

- A risk assessment should be performed by the employer/user prior to use of this product.
- All recommendations included in this document, are advisory in nature.
- The type of protective equipment must be selected based on the amount and concentration of all dangerous materials being used in the workplace.

### 16.5. Comments:

Depreciated CAS Registry number(s):

- 847664-12-4

### 16.6. Abbreviations and acronyms:

Acute Tox.:	Acute toxicity
CAS:	Chemical Abstracts Service (division of the American Chemical Society)
DOT:	US Department of Transportation
EINECS:	European Inventory of Existing Commercial Chemical Substances
Eye Dam.:	Serious eye damage/eye irritation
HMIS:	Hazardous Materials Identification System (USA)
IATA:	International Air Transport Association
IMDG:	International Maritime Code for Dangerous Goods
LC50:	Lethal concentration, Median
LD50:	Lethal dose, Median
NFPA:	National Fire Protection Association (USA)
NIOSH:	National Institute for Occupational Safety
OSHA:	Occupational Safety & Health
PBT:	Persistent, Bioaccumulative and Toxic
PEL:	Permissible Exposure Limit
REL:	Recommended Exposure Limit
Repr.:	Reproductive toxicity
Skin Irrit:	Skin corrosion/irritation
STOT RE:	Specific target organ toxicity (repeated exposure)
TLV:	Threshold Limit Value
vPvB:	very Persistent and very Bioaccumulative

### 16.7. End of SDS

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