



Safety Data Sheet:

Valinomycin

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1. Identification of the Substance and the Manufacturer

1.1. Product identifiers

Product name	Valinomycin	Formula	C ₅₄ H ₉₀ N ₆ O ₁₈
Product Code	VAL	RTECS	YV9468000
CAS#	2001-95-8	Drug bank#	DB14057
ECHA#	217-896-6	HSDB#	6423
		Molecular weight	1111.3 g/mol
		Substance? Mixture?	Substance
Synonyms	<ul style="list-style-type: none"> ▪ cyclo[N-oxa-DL-alanyl-DL-valyl-N-oxa-DL-valyl-DL-valyl-N-oxa-DL-alanyl-DL-valyl-N-oxa-DL-valyl-DL-valyl-N-oxa-DL-alanyl-DL-valyl-N-oxa-DL-valyl-DL-valyl-N-oxa-DL-alanyl-DL-valyl-N-oxa-DL-valyl-DL-valyl] ▪ Antibiotic N-329 B 		
Source	<i>Streptomyces fulvissimus</i>	Version Date	17 May, 2023

1.2. Intended uses of the Substance and uses advised against

1.2.1. Intended use:	1.2.2. Uses advised against:
Research and development. Laboratory reagent. Reference material. Manufacturing of substances. To be used by professionals only	Not a drug, Not a food additive Not to be used in humans or animals.

1.3. Contacts

1.3.1. Details of the supplier of the SDS	
FERMENTEK ltd 4 Yatziv street, POB 47120 Jerusalem 97800, Israel	Tel: +972 2 5853953 Fax: +972 2 5853943 eMail: Fermentek@Fermentek.com Safety@Fermentek.com Website: Fermentek.com

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

1.3.2. 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

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2. Hazards' identification.

2.1. Classification of the Substance.

2.1.1. GHS Classification: According to EU Reg. 1272/2008 and US OSHA 1910.1200)

Accute toxicity: Oral	Category 1	H300	Fatal if swallowed
Accute toxicity:Dermal	Category 1	H310	Fatal in contact with skin
Acute toxicity:Aspiration	Category 1	H304	May be fatal if swallowed and enters airways
Eye irritation.	Category 2	H319	Causes serious eye irritation.

2.2. GHS Label elements, including precautionary statements

2.2.1. Pictogram: {   } Signal word: {Danger}

2.2.2. Hazard Statements

H300+H310	Fatal if swallowed or in contacy with skin
H304	May be fatal if swallowed and enters airways
H319	Causes serious eye irritation.

2.2.3. GHS Precautionary Statements

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash face, hands and any exposed skin thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection

2.2.4. GHS Response Phrases:

P301+P310+P330+P331	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. Do NOT induce vomiting
P302+P352+P310	IF ON SKIN: Wash with plenty of water. Immediately call a POISON CENTER/doctor
P316	Get emergency medical help immediately
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P337+P317	If eye irritation persists: Get medical help

3. Composition/information on ingredients

Substance	
Substance Name:	Valinomycin
Concentration	<=100%
CAS Registry#:	2001-95-8



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EC#:	217-896-6
Molecular Formula:	C ₅₄ H ₉₀ N ₆ O ₁₈
Molecular Weight:	1111.3 g/mol
Classification	AccOral 2 H300, AccAspir 1 H304; Acc derm 1 H310; Irrit.Eye 2 H319
Mixture?	Substance

4. First Aid Measures.

4.1. Description of First Aid Measures.

Self-protection of the first aider:	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
General advice:	First-aiders need to protect themselves. If medical attention is required, show this safety data sheet to the doctor in attendance.
Eye contact:	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Call a physician immediately. Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. If symptoms persist, call a physician
Skin Contact:	In case of skin contact: Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician. Take off immediately all contaminated clothing. Rinse skin with water/ shower.
Ingestion:	If swallowed: Do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Drink plenty of water. Clean mouth with water and drink afterwards plenty of water. Call a physician.
Inhalation:	If inhaled, 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. Move to fresh air in case of accidental inhalation of vapors. If symptoms persist, call a physician

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

General symptoms	Behavioral - tremor Behavioral - convulsions or effect on seizure threshold Nutritional and Gross Metabolic - weight loss or decreased weight gain
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4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians	No data available
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5. Fire-fighting measures.

5.1. Extinguishing media.

Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
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Unsuitable extinguishing media	None known
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5.2. Other information

Hazardous combustion products	Carbon oxides, Nitrogen oxides <i>Formula C₅₄H₉₀N₆O₁₈</i>
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Advice for firefighters	Wear self-contained breathing apparatus for fire fighting if necessary. Wear protective suit.
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6. Accidental release measures

6.1. Personal precautions, protective equipment, and emergency procedures

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

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

Methods for containment:	Prevent further leakage or spillage if safe to do so. Cover the powder spill with a plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.
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Methods for cleaning up:	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 the powder spill with a plastic sheet or tarp to minimize spreading. Sweep up and shovel into suitable containers for disposal.
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7. Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:	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.
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7.2. Conditions for safe storage, including any incompatibilities

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

8.1. Control parameters

Control parameters	Components with workplace control parameters
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8.2. Exposure controls

Appropriate engineering controls	Showers, Eyewash stations, Ventilation systems Avoid contact with skin, eyes, and clothing. Wash hands before breaks and immediately after handling the product. Use fume-hood for routine work.
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8.3. Personal protective equipment

[PPE=Personal Protection Equipment]

PPE: Respiratory protection	Where risk assessment shows air-purifying respirators are appropriate use a full-face 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
Appearance	Powder, White
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



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Hazardous combustion products	See section 5
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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

Acute toxicity:	Oral, Rat, LD50= 4 mg/kg Oral, Mouse, LD50= 2.5 mg/kg On Skin, Rabbit LD50=5 mg/kg No other acute toxicity available.
Symptoms	Behavioral - tremor Behavioral - convulsions or effect on seizure threshold Nutritional and Gross Metabolic - weight loss or decreased weight gain
Serious eye damage/eye irritation:	Pain; reduced transparency of cornea, vision disturbance
Respiratory or skin sensitization/corrosion:	No data available

11.1.2. Chronic toxicity

Chronic toxicity	No data available
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11.1.3. CRM (Carcinogene, Mutagene, Reproductive hazards)

Germ cell mutagenicity:	No data available
Carcinogenicity:	IARC class: Not identified as carcinogenic to humans
Reproductive toxicity / Teratogenicity:	No data available

11.2. Additional information

RTECS number	YV9468000
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12. Ecological Information

Eco-Toxicity	No data available
Other adverse effects	No data available

13. Disposal Considerations

13.1. Waste treatment methods

Waste Disposal	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	ADR/RID	IATA	IMDG
UN Number	UN 3642	UN 3642	UN 3642	UN 3642
UN proper shipping name	Toxins, Extracted from Living Sources, Solid, N.O.S. (Valinomycin)	Toxins, Extracted from Living Sources, Solid, N.O.S. (Valinomycin)	Toxins, Extracted from Living Sources, Solid, N.O.S. (Valinomycin)	Toxins, Extracted from Living Sources, Solid, N.O.S. (Valinomycin)



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Transport Hazard Class & Packing Group	Class 6.1 (Poison) Packing group I	Class 6.1 (Poison) Packing group I	Class 6.1 (Poison) Packing group I	Class 6.1 (Poison) Packing group I
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15. Regulatory information

15.1. Safety, health, and environmental regulations/legislation

USA EPA / TSCA	This product is listed on the USA EPA TSCA This product is listed on the list of extremely hazardous substances
EU ECHA Status	This product is registered with the EU ECHA, Number 217-896-6 REACH: PreRegistered. ANNEX III (criteria for 1 - 10 tonne registered substances): Listed.
Canada	Listed on NDSL

16. Other information

16.1. Department issuing this SDS

Quality systems and regulatory affairs

16.2. 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.

16.3. The users'/employers' responsibility:

A risk assessment should be performed by the employer/user prior to the 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.

16.4. No-Copyright statement

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16.5. Abbreviations and acronyms:

Acute Tox.:	Acute toxicity
CAS:	Chemical Abstracts Service
DOT:	US Department of Transportation
ECHA	European Chemicals Agency
EINECS:	European Inventory of Existing Commercial Chemical Substances
Eye Dam.:	Serious eye damage/eye irritation
HSDB	Hazardous Substances Data Bank
HMIS:	Hazardous Materials Identification System (USA)
IATA:	International Air Transport Association



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IMDG:	International Maritime Code for Dangerous Goods
LC50:	Lethal concentration, Median
LD50:	Lethal dose, Median
NDG	Not dangerous goods (for transport)
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
RTECS:	Registry of Toxic Effects of Chemical Substances
Skin Irrit:	Skin corrosion/irritation
STOT/SE	Specific target organ toxicity/Single exposure
STOT/RE	Specific target organ toxicity/Repeated exposure
T3DB	Toxin and Toxin Target Database
TDL0	Toxic dose, least published

16.6. Sources of information

<https://www.epa.gov/sites/default/files/2013-09/documents/epcrafrnotice4-22-1987.pdf>

Listed on “The list of extremely hazardous substances” page 30

<https://pubchem.ncbi.nlm.nih.gov/compound/valinomycin#datasheet=LCSS§ion=First-Aid>

<https://pubchem.ncbi.nlm.nih.gov/source/hsdb/6423>

16.7. End of SDS