



Safety Data Sheet: Thiolutin

1. Identification of the substance and the manufacturer

1.1. Product identifiers

Product name	Thiolutin
Product Code	TL
CAS #	87-11-6
EC Number #	635-840-2
Synonyms	<ul style="list-style-type: none"> • <i>Farcinicin</i> • <i>N-(4,5-Dihydro-4-methyl-5-oxo-1,2-dithiolo[4,3-b]pyrrol-6-yl)</i> • <i>Propiopyvothine</i> • <i>Acetopyrrothine</i>
Formula	$C_8H_8N_2O_2S_2$
RTECS	JP1355000
Molecular weight	228.28
Substance? Mixture?	<i>Substance</i>

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

1.2.1. Intended use:	<ul style="list-style-type: none"> • <i>Research and development.</i> • <i>Laboratory reagent.</i> • <i>Reference material.</i> • <i>Analytical standard</i> • <i>Starting material for manufacturing of chemicals</i>
1.2.2. Uses advised against:	<ul style="list-style-type: none"> • <i>Not a drug,</i> • <i>Not food additive</i> • <i>Not to be used in humans or animals.</i>

1.3. Contact

1.3.1. Details of the manufacturer and supplier of the safety data sheet

FERMENTEK Ltd 4 Yatziv street, POB 4712 Jerusalem 97800, Israel	Tel: +972 2 5853953 Fax: +972 2 5853943 eMail: fermentek@fermentek.com Website: www.fermentek.com
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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

1.4. Date of revision

Thursday, 20 October, 2022



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 Oral ...H300 Category 2 Fatal if swallowed

2.2. GHS Label elements, including precautionary statements

2.2.1. Signal word: <Danger>

Pictogram



2.2.2. Hazard statements

H300 Fatal if swallowed

2.2.3. Precautionary statements

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breath dust, fume, gas, mist, vapors and spray.

P270 Do not eat, drink, or smoke when using this product.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

P301+ P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

2.3. Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher

3. Composition/information on ingredients

Substance	
Substance name:	Thiolutin
Concentration	100%
	CAS Registry #: 87-11-6 EC#:635-840-2
	Molecular Formula: C ₈ H ₈ N ₂ O ₂ S ₂ Molecular Weight: 228.28
Classification	Acute Tox. 2; H300
Mixture?	Substance



4. First Aid Measures

4.1. Description of First Aid Measures

General advice:	<i>Show this safety data sheet to the doctor in attendance.</i>
Eye contact:	<i>After eye contact: rinse out with plenty of water. Remove contact lenses.</i>
Skin Contact:	<i>Take off immediately all contaminated clothing. Rinse skin with water/shower.</i>
Ingestion:	<i>Never give anything by mouth to an unconscious person. If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible</i>
Inhalation:	<i>Fresh air</i>

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

Skin Contact:	<i>No data available</i>
Eye contact:	<i>No data available</i>
Ingestion:	<i>No data available</i>
Inhalation:	<i>No data available</i>

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

	<i>No data available</i>
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5. Fire-fighting measures

5.1. Extinguishing media

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

5.2. Other information

Hazardous combustion products	<i>Carbon oxides, Nitrous oxides Sulfuric oxides</i>
Advice for firefighters	<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

Personal precautions	<i>Avoid dust formation. Avoid breathing vapours, mist or gas. For personal protection see section 8. Use personal protective equipment as required. Keep people away from and upwind of spill/leak.</i>
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6.2. Environmental precautions

Environmental precautions	<i>No special environmental precautions required.</i>
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6.3. Methods and material for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:	<i>Provide appropriate exhaust ventilation at places where dust is formed 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.</i>
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7.2. Conditions for safe storage, including any incompatibilities

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

8.1. Control parameters

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

Appropriate engineering controls	<i>General industrial hygiene practice 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

[PPE=Personal Protection Equipment]	<i>The employer/end user, prior to use of this product should perform all recommendations below are advisory in nature and a risk assessment. The type of protective equipment must be selected based on the amount and concentration of the dangerous material being used in the workplace.</i>
PPE: Respiratory protection	<i>Respiratory protection is not required. Where protection from nuisance levels of dusts is desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)</i>
PPE: Hand Protection:	<i>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</i>
PPE: Eye Protection:	<i>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)</i>
PPE: Skin and Body Protection:	<i>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 must satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.</i>

9. Physical and chemical properties

9.1. Physical / chemical properties

Physical State at room temperature	<i>Crystalline Powder</i>
Color	<i>Light yellow</i>
Odor	<i>Odorless</i>
<i>No further safety relevant data are available</i>	

10. Stability and reactivity

Reactivity:	<i>No information available.</i>
Chemical stability:	<i>Stable under normal conditions.</i>
Conditions to avoid	<i>Heat, flames and sparks. Sunlight.</i>
Incompatible materials	<i>Strong reducers and oxidizers</i>



Possibility of Hazardous Reactions	None under normal processing
Hazardous decomposition products	Carbon oxides

11. Toxicological information

11.1. Information on toxicological effects

The toxicological effects of this product have not been thoroughly studied.

11.1.1. Acute Toxicity	<p>Oral LD50 Mouse, 25 mg/kg Oral LD50 Rat, ... No data available Dermal LD50, Mouse No data available Dermal LD50, Rat No data available Inhalation LD50, Mouse mg/liter/hour Inhalation LD50, No data available Source: ANTCAO Antibiotics and Chemotherapy (Washington, DC). (Washington, DC) 1-12, 1951-62. For publisher information, see CLMEA3. Volume(issue)/page/year: 2,357,1952</p>
Skin corrosion/irritation:	...No data available
Serious eye damage/eye irritation:	...No data available
Respiratory or skin sensitization/corrosion:	...No data available
11.1.2. CMR hazards	
Carcinogenicity	<p>Group 3: Not classified as human carcinogen IARC: 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.</p>
Germ cell mutagenicity:	Mutagenicity observed in yeast - <i>Saccharomyces cerevisiae</i> at 4 mg/L
Reproductive toxicity / Teratogenicity:	No data available
11.1.3. Other data	
STOT-SE – single exposure (GHS):	No data available
STOT-SE – repeated exposure (GHS):	May damage kidneys, skeletal muscles in case of prolonged exposure
Aspiration hazard:	No data available

11.2. Additional information

RTECS number	JP1355000
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12. Ecological Information

Eco-Toxicity	<i>No data available</i>
Other adverse effects	<i>This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.</i>

13. Disposal Considerations

13.1. Waste treatment methods

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



14. Transport information

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

	US DOT	IATA	IMDG	ADR/RID
UN Number UN proper shipping name	3462 <i>Toxins, extracted from living sources, solid, n.o.s. (Thiolutin)</i>	3462 <i>Toxins, extracted from living sources, solid, n.o.s. (Thiolutin)</i>	3462 <i>Toxins, extracted from living sources, solid, n.o.s. (Thiolutin)</i>	3462 <i>Toxins, extracted from living sources, solid, n.o.s. (Thiolutin)</i>
Transport Hazard Class & Packing Group	<i>Class 6.1 Packing group: II</i>	<i>Class 6.1 Packing group: II</i>	<i>Class 6.1 Packing group: II</i>	<i>Class 6.1 Packing group: II</i>

14.2. Additional information

	<i>Not marine pollutant</i>
Excepted quantities (EQ)	<i>Not applicable</i>

15. Regulatory information

15.1. Safety, health, and environmental regulations/legislation

USA EPA / TSCA	<i>This product is not listed on the USA EPA TSCA (it is for research)</i>
EU ECHA Status	<i>ANNEX III: List...ed REACH: Prereg...istered REACH: This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57)</i>
CA: DSL/NDSL Status	<i>This product is not listed on the Canadian DSL/NDSL</i>

15.2. Chemical Safety Assessment

<i>For this product a chemical safety assessment was not carried out</i>
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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 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. 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*



16.5. APPENDIX: Acute toxicity hazard categories and (approximate) LD50/LC50 values defining the respective categories.

(Adapted from Safety Guides GHS05- -classification criteria for substances)

Exposure Route	Category 1	Category 2	Category 3	Category 4
Oral (mg/kg)	5	50	300	2000
Dermal (mg/kg)	50	200	1000	2000
Gases (ppm) see: Note a	100	500	2500	5000
Vapours (mg/l) see: Note a Note b Note c	0.5	2.0	10	20
Dusts and Mists (mg/l) see: Note a Note d	0.05	0.5	1.0	5

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