Safety Data Sheet: Tunicamycin

1. Identification of the substance/mixture and of the Company

1.1. Product identifiers

Product name	***Tunicamycin***	**Formula**	***$C_{39}H_{60}N_4O_{16}$***
Product Code	***TU***	**RTECS**	***YO7980200***
CAS #	***11089-65-9***	**Molecular weight**	***427.5***
EC Number #	***601-012-4***		
Date of version	***<3 March, 2020>***	**Substance?Mixture?**	***Substance***

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

Intended use:	*Uses advised against:*
Research and development. Laboratory reagent. Reference material. Manufacturing of substances.	Not for drug, Not to be used in humans or animals. Not food additive

1.3. Details of the supplier of the safety data sheet		*1.4. Emergency Telephone number*
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	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

Classification according to Regulation (EC) No 1272/2008:

Skin corrosion	Category 1B	H314	Causes severe skin burns and eye damage.
Reproductive toxicity	Category 2	H361d	Suspected of damaging the unborn child.

GHS Label elements, including precautionary statements

Pictogram:  **Signal word: {DANGER}**

GHS Hazard Statements

H314	Causes severe skin burns and eye damage.
H361d	Suspected of damaging the unborn child.

GHS Precautionary Statements

P201	Obtain special instructions before use.
P260	Do not breathe dust or mist.
P202	Do not handle until all safety precautions have been read and understood
P262	Do not get in eyes, on skin, or on clothing
P280	Wear {protective gloves/protective clothing/eye protection/face protection}.
P261	Avoid breathing {dust/fume/gas/mist/vapors/spray}.
P264	Wash {hands} thoroughly after handling.

GHS Response Phrases:

P301+P301 + P330	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P304+340:	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310	Immediately call a POISON CENTER or doctor/physician.
P308+313	If exposed or concerned: Get medical advice/attention

3. Composition/information on ingredients

Substance

Substance name:	Tunicamycin	
Concentration	100%	
	CAS Registry #:***11089-65-9*** EC#:***601-012-4*** RTECS ***YO7980200***	
	Molecular Formula: ***C39H60N4O16*** Molecular Weight: ***427.5***	
Classification	Skin Corr. 1B: H314 Toxic Repro. 2: H361	
Mixture?	***Substance***	

4. First Aid Measures

4.1. Description of First Aid Measures

General advice:	Consult a physician. Show this safety data sheet to the doctor in attendance.
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

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

5. Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	Solid water stream may be inefficient.

5.2. Other information

Hazardous combustion products	Carbon oxides,
Advice for firefighters	Wear self-contained breathing apparatus for fire fighting if necessary. Wear protective suit.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid raising and breathing dust, and provide adequate ventilation.

6.2. Environmental precautions

Environmental precautions	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up

Methods for containment:	Prevent further leakage or spillage if safe to do so. Contain spill and collect, as appropriate
Methods for cleaning up:	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.

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. Avoid prolonged or repeated exposure.

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.
Incompatible materials:	None known based on information available.

8. Exposure Controls/Personal Protection

8.1. Control parameters

Control parameters	Components with workplace control parameters

8.2. Exposure controls

Appropriate engineering controls

- 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 fumehood for routine work.

8.3. Personal protective equipment

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.

[PPE=Personal Protection Equipment]

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	
Melting/freezing point	299°C
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 exidizers
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.

Acute Toxicity

Intraperitoneal	Intraperitoneal, Mouse; TD50 =2.0 mg/kg *Source: Michael J. Morin, and Ralph J. Bernacki, CANCER RESEARCH 43, 1669-1674, April 1983)*
Ingestion	No quantitative data available
Skin corrosion/irritation:	No data available
Serious eye damage/eye irritation:	No data available
Respiratory or skin sensitization/corrosion:	No data available

Chronic toxicity

Chronic Toxicity	Prolonged or repeated exposure increases the risk. Possible risk of irreversible effects.
Germ cell mutagenicity:	
Carcinogenicity:	Not identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive toxicity / Teratogenicity:	Experimentally shown causing abortions in mice.
STOT-SE – single exposure (GHS):	No data available
Aspiration hazard:	No data available

11.2. Additional information

RTECS number	YO7980200
Symptoms	Cough, Shortness of breath, Headache, Nausea, Vomiting Exposure may cause irritaiton of eyes, mucous membranes, upper respiratory tract and skin

12. Ecological Information

12.1. Toxicity

	This product is not classified as environmentally hazardous according to the UN Model Regulations, nor a marine pollutant according to the IMDG Code.
Eco-Toxicity	No further relevant information available
Other adverse effects	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 IATA	US ADR	US RID	US IMDG
UN Number **UN proper shipping name**	Toxins, extracted from living sources, solid, n.o.s. (Tunicamycin)	Toxins, extracted from living sources, solid, n.o.s. (Tunicamycin)	Toxins, extracted from living sources, solid, n.o.s. (Tunicamycin)	Toxins, extracted from living sources, solid, n.o.s. (Tunicamycin)
Transport Hazard Class & Packing Group	6.1, II	6.1, II	6.1, II	6.1, II
Addional information	Excepted quantities (EQ)	Code: E5	Maximum net quantity per inner packaging: 1 g	Maximum net quantity per outer packaging: 300 g
				Not marine polutant

15. Regulatory information

15.1. Safety, health and environmental regulations/legislation

USA EPA / TSCA	This product is not listed on the USA EPA TSCA (For research)
EU ECHA Status	This product is registered with the EU ECHA, Number ***601-012-4*** ANNEX III: ***Listed*** **REACH: Preregistration process.**
CA: DSL/NDSL Status	This product is not listed on the Canadian DSL/NDSL

16. Other information

16.1. Date of revision: Tuesday, 3 March, 2020

16.2. 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.

End of SDS