



Safety Data Sheet: ***Bleomycin-sulfate***

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1. Identification of the Substance and the Manufacturer

1.1. Product identifiers

Product name	Bleomycin-sulfate	Formula	C ₅₅ H ₈ N ₁₇ O ₂₅ S ₄
Product Code	BLE	RTECS	EC5991990
CAS #	9041-93-4	Molecular weight	1512.62
ECHA#	232-925-2	HSDB #	3208
		Substance? Mixture?	Substance
Synonyms	<ul style="list-style-type: none"> Bleomycin Bleomycin A2 Bleomycin Sulfate Isobleomycin A2 		
Source		Version Date	7 October, 2024

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
<div> <div> FERMENTEK ltd 4 Yatziv street, POB 47120 Jerusalem 97800, Israel </div> <div> Tel: +972 2 5853953 Fax: +972 2 5853943 eMail: Fermentek@Fermentek.com Safety@Fermentek.com Website: Fermentek.com </div> </div>

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

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)

Not a hazardous Substance according to Regulation (EC) No. 1272/2008.



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Mutagenicity	Cat.1A,1B	H340	May cause genetic defects
Carcinogenicity	Cat.2	H351	Suspected of causing cancer
Reproductive toxicity	Cat.2	H361	Suspected of damaging fertility or the unborn child

2.2. GHS Label elements, including precautionary statements

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

2.2.2. Hazard Statements

H340	May cause genetic defects
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child

2.2.3. GHS Precautionary Statements

P203	Obtain, read and follow all safety instructions before use.
P261	Avoid breathing dust or mist.
P264	Wash {hands} thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection

2.2.4. GHS Response Phrases:

P318	If exposed or concerned, get medical advice
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3. Composition/information on ingredients

Substance	
Substance Name:	Bleomycin-sulfate
Concentration	<=100%
CAS Registry#:	9041-93-4
EC#:	232-925-2
Molecular Formula:	C ₅₅ H ₈ N ₁₇ O ₂₅ S ₄
Molecular Weight:	1512.62
Classification	Mut.1 (H340); Carc 2 (H351); Repro 2 (H361)
Mixture?	Substance Substance

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4. First Aid Measures

4.1. Description of First Aid Measures

General advice:	First-aiders need to protect themselves. Immediate medical attention is required. If symptoms persist, call a physician.
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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. If symptoms persist, call a physician.
Skin Contact:	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. Wash off immediately with plenty of water. If skin irritation persists, call a physician. Wash off immediately with soap and plenty of water. Consult a physician if necessary.
Ingestion:	Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Clean mouth with water and drink afterwards plenty of water. Call a physician
Inhalation:	Remove to fresh air. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Immediate medical attention is required. If not breathing, give artificial respiration. Artificial respiration and/or oxygen may be necessary. Call a physician. Oxygen or artificial respiration if needed. 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	See section 11
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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.
Unsuitable extinguishing media	None known

5.2. Other information

Hazardous combustion products	Carbon oxides, Nitrogen oxides (NO _x), Sulphur oxides (S _x O _y), Hydrogen sulfide
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	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 plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.
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 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.
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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.
Suitable packaging	Must only be kept in original packaging.
Incompatible materials:	None known based on information available.

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



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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	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
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: No data available
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. Chronic toxicity

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

Germ cell mutagenicity:	EPA genetox program 1988: Positive
Carcinogenicity:	<ul style="list-style-type: none"> IARC: Group 2B - Possibly Carcinogenic to Humans Tumorigenic - Carcinogenic by RTECS criteria <p>Symptoms (experimental, on mammals): Kidney, Ureter, Bladder - Kidney tumors Tumors at site of application</p>
Reproductive toxicity / Teratogenicity:	<p>Female rat, 6-9 days postconception, IP TDLo= 8 mg.kg Fertility: post-implantation mortality; other fetotoxicity. Developmental Abnormalities: musculoskeletal system Effects on newborn - growth statistics (reduced weight gain)</p>

11.2. Additional information

RTECS number	EC5991990
General symptoms	<p>Lungs, Thorax, or Respiration - fibrosis (interstitial) Lungs, Thorax, or Respiration - acute pulmonary edema Behavioral - ataxia Gastrointestinal - hypermotility, diarrhea Kidney, Ureter, Bladder - urine volume increased Skin and Appendages – hair Nutritional and Gross Metabolic - body temperature decrease</p>

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

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

	US DOT	ADR/RID	IATA	IMDG
UN Number	Not regulated	Not regulated	Not regulated	Not regulated
UN proper shipping name				
Transport Hazard Class & Packing Group	Not regulated	Not regulated	Not regulated	Not regulated



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15. Regulatory information

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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)
Canada	Not on DSL/NDSL
EU ECHA Status	<p>This product is registered with the EU ECHA, Number 232-925-2</p> <p>REACH: PreRegistered</p> <p>ANNEX III (criteria for 1 - 10 tonne registered substances): Listed</p> <p>Reasons for listing:</p> <ul style="list-style-type: none"> a. Suspected mutagen



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16. Other information

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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

Fermentek does not claim © copyright on this document.

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This sort of document is but a compendium of common knowledge and published facts.

Fermentek explicitly releases this document into the public domain.

16.5. Abbreviations and acronyms:

Acute Tox.:	Acute toxicity	LD50:	Lethal dose, Median
CAS:	Chemical Abstracts Service	NFPA:	National Fire Protection Association USA
DOT:	US Department of Transportation	NIOSH:	National Institute for Occupational Safety
EINECS:	European Inventory of Existing Commercial Chemical Substances	OSHA:	Occupational Safety & Health
Eye Dam.:	Serious eye damage/eye irritation	PEL:	Permissible Exposure Limit
HSDB	Hazardous Substances Data Bank	REL:	Recommended Exposure Limit
HMIS:	Hazardous Materials Identification System (USA)	Repr.:	Reproductive toxicity
IATA:	International Air Transport Association	RTECS:	Registry of Toxic Effects of Chemical Substances
IMDG:	International Maritime Code for Dangerous Goods	Skin Irrit:	Skin corrosion/irritation
LC50:	Lethal concentration, Median	TDL0	Least toxic dose published
		PBT:	Persistent, Bioaccumulative, and Toxic

16.6. End of SDS