SAFETY DATA SHEET
Bleomycin A5 hydrochloride

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product name Bleomycin A5 hydrochloride
Product number AB46332
Synonyms; trade names Bleocin
CAS number 55658-47-4

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses Laboratory reagent. Manufacture of substances. Research and development.

1.3. Details of the supplier of the safety data sheet
Supplier Carbosynth Ltd
8&9 Old Station Business Park
Compton
Berkshire
RG20 6NE
UK
+44 1635 578444
+44 1635 579444
info@carbosynth.com

1.4. Emergency telephone number
Emergency telephone +44 7887 998634

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification (EC 1272/2008)
Physical hazards Not Classified
Health hazards Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Repr. 2 - H361 STOT SE 3 - H335
Environmental hazards Not Classified

2.2. Label elements
Pictogram
Signal word Danger
Bleomycin A5 hydrochloride

Hazard statements
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H361 Suspected of damaging fertility or the unborn child.

Precautionary statements
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.

2.3. Other hazards
No data available.

SECTION 3: Composition/information on ingredients

3.1. Substances
Product name
Bleomycin A5 hydrochloride
CAS number
55658-47-4
Chemical formula
C₅₇H₈₉CuN₁₉O₂₁S₂·3HCl

SECTION 4: First aid measures

4.1. Description of first aid measures
General information
Get medical advice/attention if you feel unwell.
Inhalation
Remove person to fresh air and keep comfortable for breathing. If breathing stops, provide artificial respiration. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention if symptoms are severe or persist.
Ingestion
Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth thoroughly with water. Give plenty of water to drink. Get medical attention if symptoms are severe or persist.
Skin contact
Remove contaminated clothing. Rinse with water. Continue to rinse for at least 15 minutes. Wash contaminated clothing before reuse. Get medical attention if symptoms are severe or persist.
Eye contact
Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention if symptoms are severe or persist.

4.2. Most important symptoms and effects, both acute and delayed
General information
See Section 11 for additional information on health hazards.

4.3. Indication of any immediate medical attention and special treatment needed
Notes for the doctor
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media
Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture
Bleomycin A5 hydrochloride

Specific hazards
None known.

Hazardous combustion products
Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours. Oxides of carbon. Oxides of nitrogen. Oxides of sulphur. Hydrogen chloride (HCl).

5.3. Advice for firefighters
Special protective equipment for firefighters
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents. Use protective equipment appropriate for surrounding materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Personal precautions
Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material. Avoid inhalation of dust and vapours. Provide adequate ventilation. Eliminate all sources of ignition. Keep unnecessary and unprotected personnel away from the spillage.

6.2. Environmental precautions
Environmental precautions
Avoid discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up
Wear protective clothing as described in Section 8 of this safety data sheet. Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into suitable waste disposal containers and seal securely. Clear up spills immediately and dispose of waste safely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.

6.4. Reference to other sections
Reference to other sections
For personal protection, see Section 8. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Usage precautions
Wear protective clothing as described in Section 8 of this safety data sheet. Wash hands thoroughly after handling. Provide adequate ventilation. Avoid generation and spreading of dust. Avoid the formation of mists. Avoid contact with skin and eyes. Avoid inhalation of dust and vapours. Eliminate all sources of ignition. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities
Storage precautions
Keep container tightly closed. Keep in a cool, well ventilated place. Store in a dry place. Store away from incompatible materials (see Section 10). Eliminate all sources of ignition. Hygroscopic. Protect from light. Store at temperatures between 2°C and 8°C.

7.3. Specific end use(s)
Specific end use(s)
The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters
Occupational exposure limits
No exposure limits known for ingredient(s).

8.2. Exposure controls
Bleomycin A5 hydrochloride

### Appropriate engineering controls
Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.

### Eye/face protection
Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.

### Hand protection
Wear protective gloves. To protect hands from chemicals, gloves should comply with European Standard EN374.

### Other skin and body protection
Wear appropriate clothing to prevent repeated or prolonged skin contact.

### Respiratory protection
Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is ‘CE’-marked. Particulate filters should comply with European Standard EN143. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

### Environmental exposure controls
Keep container tightly sealed when not in use.

### SECTION 9: Physical and Chemical Properties

#### 9.1. Information on basic physical and chemical properties

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<th>Value</th>
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<td>Appearance</td>
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<td>Explosive properties</td>
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</table>
Bleomycin A5 hydrochloride

Oxidising properties
No data available.

9.2. Other information
Molecular weight 1613.49

SECTION 10: Stability and reactivity

10.1. Reactivity
Reactivity No data available.

10.2. Chemical stability
Stability Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions
The following materials may react violently with the product: Strong oxidising agents.

10.4. Conditions to avoid
Avoid the accumulation of dust.

10.5. Incompatible materials
Strong oxidising agents.

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity - oral
Acute toxicity oral (LD₅₀ mg/kg) 800.0
Species Mouse
Notes (oral LD₅₀) Acute Tox. 4 - H302 Harmful if swallowed.
ATE oral (mg/kg) 800.0

Acute toxicity - dermal
Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation
Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation
Animal data Irritating.

Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitisation
There is evidence that the product can cause respiratory hypersensitivity.

Skin sensitisation
May cause skin sensitisation or allergic reactions in sensitive individuals.
Bleomycin A5 hydrochloride

**Germ cell mutagenicity**
Based on available data the classification criteria are not met.

**Carcinogenicity**
Based on available data the classification criteria are not met.

**IARC carcinogenicity**
None of the ingredients are listed or exempt.

**Reproductive toxicity**

**Reproductive toxicity - fertility**
Suspected of damaging fertility.

**Reproductive toxicity - development**
Suspected of damaging the unborn child.

**Specific target organ toxicity - single exposure**

**STOT - single exposure**
STOT SE 3 - H335 May cause respiratory irritation.

**Target organs**
Respiratory system, lungs

**Specific target organ toxicity - repeated exposure**

**STOT - repeated exposure**
Not classified as a specific target organ toxicant after repeated exposure.

**Aspiration hazard**
Not relevant. Solid.

**General information**
Avoid contact during pregnancy/while nursing. May damage fertility. Dust may irritate the eyes and the respiratory system. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

**Inhalation**
May cause sensitisation or allergic reactions in sensitive individuals. A single exposure may cause the following adverse effects: Irritation of nose, throat and airway. Difficulty in breathing. Coughing.

**Ingestion**
May cause sensitisation or allergic reactions in sensitive individuals. May cause discomfort if swallowed. Stomach pain. Nausea, vomiting.

**Skin contact**
May cause skin sensitisation or allergic reactions in sensitive individuals. Redness. Irritating to skin.

**Eye contact**
Irritating to eyes.

**Route of exposure**
Ingestion Inhalation Skin and/or eye contact

**Target organs**
Respiratory system, lungs

**Medical considerations**
Skin disorders and allergies.

SECTION 12: Ecological Information

**Ecotoxicity**
Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

**12.1. Toxicity**
Toxicity
Based on available data the classification criteria are not met.

**12.2. Persistence and degradability**

**Persistence and degradability**
The degradability of the product is not known.

**12.3. Bioaccumulative potential**

**Bioaccumulative potential**
No data available on bioaccumulation.
Bleomycin A5 hydrochloride

**Partition coefficient**
No data available.

**12.4. Mobility in soil**
Mobility
No data available.

**12.5. Results of PBT and vPvB assessment**
Results of PBT and vPvB assessment
This substance is not classified as PBT or vPvB according to current EU criteria.

**12.6. Other adverse effects**
Other adverse effects
Avoid discharge into drains and the aquatic environment.

### SECTION 13: Disposal considerations

**13.1. Waste treatment methods**
**General information**
Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered.

### SECTION 14: Transport information

**General**
The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

**14.1. UN number**
Not applicable.

**14.2. UN proper shipping name**
Not applicable.

**14.3. Transport hazard class(es)**
No transport warning sign required.

**14.4. Packing group**
Not applicable.

**14.5. Environmental hazards**
Environmentally hazardous substance/marine pollutant
No.

**14.6. Special precautions for user**
Not applicable.

**14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code**
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable.

### SECTION 15: Regulatory information

**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**
**National regulations**
Health and Safety at Work etc. Act 1974 (as amended).
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].
EH40/2005 Workplace exposure limits.
Bleomycin A5 hydrochloride

EU legislation

15.2. Chemical safety assessment
No chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
- ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
- RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- IATA: International Air Transport Association.
- CAS: Chemical Abstracts Service.
- ATE: Acute Toxicity Estimate.
- LC₅₀: Lethal Concentration to 50 % of a test population.
- LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
- EC₅₀: 50% of maximal Effective Concentration.
- PBT: Persistent, Bioaccumulative and Toxic substance.
- vPvB: Very Persistent and Very Bioaccumulative.

Training advice
Only trained personnel should use this material.

Revision date
01/09/2017

Revision
1

SDS number
144926

Hazard statements in full
- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
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