SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Identifier : Sulbenicilllin Sodium
Product Number : S041
CAS Number : [28002-18-8]
EC Number : [248-769-3]
REACH Registration Number : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration, or the registration is envisaged for a later registration deadline.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified Uses : For research use only - restricted to professional users.
Uses Advised Against : Not for human or animal use

1.3 Details of the supplier of the safety data sheet

Company : TOKU-E Company
715 W Orchard Dr. Suite 3
Bellingham, WA 98225
Phone Number : (360) 734-1789
E-mail Address : info@toku-e.com
Safety Data Sheet Issued by : TOKU-E Company (USA)

1.4 Emergency telephone number

Emergency Phone Number (Internat.) : +1 (352) 353-3500 (INFOTRAC, 24-Hour Number)
Emergency Phone Number (US Only) : 1 (800) 535-5053 (INFOTRAC, 24-Hour Number)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 : Not classified as a hazardous substance or mixture.

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008 : Not classified as a hazardous substance or mixture.

Supplemental Hazard Information : No data available

2.3 Other hazards

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonym(s) : Sulbenicillin disodium; α-Sulfobenzylpenicillin disodium; Sulfocillin; Kedacillin; Lilacillin
Formula : C_{16}H_{16}N_{2}O_{7}S_{2} \cdot Na_{2}
Molecular weight : 458.42 g/mol
SECTION 4: FIRST-AID MEASURES

4.1 Description of first-aid measures

General information
Consult a doctor/physician if exposed - additional medical care may be required. Show this safety data sheet to the medical provider.

If inhaled
If inhaled, move to fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash skin thoroughly with soap and water. Remove any contaminated clothing. Consult a physician.

In case of eye contact
Flush eye with water. After initial flush, remove any contact lenses and continue flushing for at least 15 minutes.

If swallowed
Rinse mouth with water. Immediately call a doctor, physician, or poison control center. Never give anything by mouth to an unconscious person.

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 the spread of contamination.

4.2 Most important symptoms/effects, acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguising media
No data available

5.2 Special hazards arising from the substance or mixture

Hazardous Combustion Products
Carbon and nitrogen oxides, sulfur oxides, sodium oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus if necessary.
SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Consult the safety measures listed in Section 7 and 8. Use personal protective equipment. Avoid breathing dust, vapors, mist or gas. Avoid direct contact with spilled substances. Ensure adequate ventilation. Avoid dust formation. For personal protection see Section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
Refer to section 8 for exposure control and personal protection. Refer to section 13 for disposal information.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautionary statements see section 2.2

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Protect from humidity. Recommended storage temperature: ≤ 30 °C

Incompatibilities:
Strong oxidizing agents

7.3 Specific end use(s)
Refer to section 1.2

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control parameters
Components with workplace control parameters:
No OEL data available

8.2 Exposure controls
Appropriate engineering controls:
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.

Personal Protective Equipment (PPE):

Respiratory protection
Wear respiratory protection. Use type N95 (US) or type P1 (EN 143) dust masks as a backup to engineering controls. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Skin 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. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the selected EN 374 derived from it.
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- **Appearance**: White to off-white powder
- **Odor**: No data available
- **Odor Threshold**: No data available
- **pH**: No data available
- **Melting Point/Freezing Point**: No data available
- **Initial Boiling Point and Range**: No data available
- **Flash Point**: No data available
- **Evaporation rate**: No data available
- **Flammability (solid, gas)**: No data available
- **Upper/Lower Flammability or Explosive Limits**: No data available
- **Vapour Pressure**: No data available
- **Vapour Density**: No data available
- **Relative Density**: No data available
- **Solubility(ies)**: Soluble in water and DMSO. Insoluble in ethanol.
- **Partition Coefficient: n-octanol/water**: No data available
- **Auto-Ignition Temperature**: No data available
- **Decomposition Temperature**: No data available
- **Viscosity**: No data available
- **Explosive Properties**: No data available
- **Oxidising Properties**: No data available

9.2 Other information

No additional information relevant to safe use of the substance.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents
10.6 Hazardous decomposition products  
No data available 

See Section 5 for hazardous combustion products.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity
Oral LD₅₀: Rat: > 15 g/kg, Mouse: > 15 g/kg
Subcutaneous LD₅₀: Rat: 11 g/kg, Mouse: 11.5 g/kg

Skin Corrosion/Irritation 
No data available

Serious Eye Damage/ Eye Irritation 
No data available

Respiratory or Skin Sensitisation 
No data available

Germ Cell Mutagenicity 
No data available

Carcinogenicity 
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 the International Agency for Research on Cancer Monograph.

Reproductive Toxicity 
Rat: Intramuscular TDLo 182 g/kg 
Male, 91 days pre-mating 
Toxic Effects: Paternal Effects - Prostate, seminal vesicle, Cowper's gland, accessory gland

Specific Target Organ Toxicity: Single Exposure 
No data available

Specific Target Organ Toxicity: Repeated Exposure 
No data available

Aspiration Hazard 
No data available

Additional Information 
RTECS # XH9890000 
Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information. 
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

β-lactams are a broad class of antibiotics and include penicillins, cephalosporins, carbapenems and monobactams. Some individuals experience adverse immunological responses or allergic reactions to β-lactams. Because of the structural similarity between these antibiotics, those who are allergic to one class of agents may manifest cross-allergenicity when exposed to a member of another class.

TOKU-E Company assumes this chemical has the potential to induce an allergic reaction in some individuals. To the best of our knowledge, the correlation between this specific material and respiratory or skin sensitization has not been thoroughly investigated.
SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects
No data available

In the absence of complete ecological information, treat product as environmentally hazardous. Use proper storage, handling, and disposal to prevent unintentional release into the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
Offer surplus and non-recyclable products to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Avoid disposal of material in drains or sewers. Waste material must be disposed of in accordance with the Directive on Waste 2008/98/EC as well as other national and local regulations.

Contaminated Packaging
Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

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<th>ADR/RID</th>
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<td>14.5 Environmental Hazards</td>
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<td>Marine Pollutant: No</td>
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14.6 Special precautions for user
No data available

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.
SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Authorizations and/or restrictions on use
Restricted to professional users.

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms
ADR/RID: European Agreements Concerning the International Carriage of Dangerous Goods by Road (ADR) and Rail (RID)
CAS No: Chemical Abstracts Service number
EC: European Commission
EC No: European Commission number
EHS: Environmentally Hazardous Substance
EU: European Union
H-Statement: Hazard Statement
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
IBC: International Bulk Chemical
IMDG: International Maritime Dangerous Goods Code
LC50: Lethal concentration, 50%
LD50: Median Lethal dose
MARPOL 73/78: International Convention for the Prevention of Pollution from Ships
NIOSH: National Institute for Occupation Safety and Health
OEL: Occupational Exposure Limit
PBT: Persistent, Bioaccumulative and Toxic
REACH: Registration, Evaluation, Authorisation and restrictions of Chemicals
RTECS: Registry of Toxic Effects of Chemical Substances
SDS: Safety Data Sheet
UN: United Nations
vPvB: Very Persistent and Very Bioaccumulative

Further information
Revision Date: 2019-03-14

The above information is based upon the present state of our knowledge and is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information is believed to be correct but does not purport to be all inclusive. It does not represent any guarantees of the properties of the product. TOKU-E Company shall not be held liable for damage or injury resulting from contact, handling, or storage of the above product.