SAFETY DATA SHEET

Benzylpenicillin / Streptomycin Sulphate / Procaine Hydrochloride / Piroxicam Liquid Formulation

Version 4.9 Revision Date: 27.08.2021 SDS Number: 2456208-00015 Date of last issue: 28.09.2020
Date of first issue: 13.02.2018

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Benzylpenicillin / Streptomycin Sulphate / Procaine Hydrochloride / Piroxicam Liquid Formulation

Manufacturer or supplier’s details

Company : MSD
Address : Briahnager - Off Pune Nagar Road
Wagholi - Pune - India 412 207
Telephone : +1-908-740-4000
Emergency telephone number : +1-908-423-6000
E-mail address : EHSDATASERVICE@msd.com

Recommended use of the chemical and restrictions on use
Recommended use : Veterinary product

2. HAZARDS IDENTIFICATION

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989

Classification
Not classified as hazardous according to criteria laid down in Part I of Schedule-1.

GHS Classification
Acute toxicity (Oral) : Category 5
Serious eye damage/eye irritation : Category 2B
Respiratory sensitisation : Category 1
Skin sensitisation : Category 1
Reproductive toxicity : Category 1A
Specific target organ toxicity - single exposure : Category 2 (Nervous system, Heart)
Specific target organ toxicity - repeated exposure : Category 1 (Kidney, inner ear)
Specific target organ toxicity - repeated exposure : Category 2 (Gastrointestinal tract)
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Short-term (acute) aquatic hazard : Category 1
Long-term (chronic) aquatic hazard : Category 1

GHS label elements
Hazard pictograms:

Signal word : Danger

Hazard statements : H303 May be harmful if swallowed.
H317 May cause an allergic skin reaction.
H320 Causes eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H360D May damage the unborn child.
H371 May cause damage to organs (Nervous system, Heart).
H372 Causes damage to organs (Kidney, inner ear) through prolonged or repeated exposure.
H373 May cause damage to organs (Gastrointestinal tract) through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:

Prevention:
P203 Obtain, read and follow all safety instructions before use.
P260 Do not breathe mist or vapours.
P264 Wash skin 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.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 Wear respiratory protection.

Response:
P301 + P333 + P317 IF SWALLOWED or if skin irritation or rash occurs: Get medical help.
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.
P308 + P316 IF exposed or concerned: Get emergency medical help immediately.
P337 + P317 IF eye irritation persists: Get medical help.
P362 + P364 Take off contaminated clothing and wash it before
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

| Chemical name                  | CAS-No.   | Concentration (% w/w) |
|##################################|-----------|-----------------------|
| Benzylpenicillin               | 61-33-6   | => 10 - < 20          |
| Streptomycin sulphate          | 3810-74-0 | => 10 - < 20          |
| Procaine hydrochloride         | 51-05-8   | => 1 - < 5            |
| Piroxicam                      | 36322-90-4| => 1 - < 3            |

4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.
Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.
Remove contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Get medical attention.

If swallowed : If swallowed, DO NOT induce vomiting.
Get medical attention.

Additional Labelling
The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 3 %

Other hazards which do not result in classification
None known.
5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media: None known.

Specific hazards during firefighting: Exposure to combustion products may be a hazard to health.

Hazardous combustion products: Carbon oxides
Nitrogen oxides (NOx)
Sulphur oxides
Oxides of phosphorus
Metal oxides

Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment.
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

Environmental precautions: Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil...
barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up:
Soak up with inert absorbent material.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

7. HANDLING AND STORAGE

Technical measures:
See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation:
If sufficient ventilation is unavailable, use with local exhaust ventilation.

Advice on safe handling:
Do not get on skin or clothing.
Do not breathe mist or vapours.
Do not swallow.
Do not get in eyes.
Wash skin thoroughly after handling.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment.
Keep container tightly closed.
Already sensitised individuals should consult their physician regarding working with respiratory irritants or sensitisers.
Do not eat, drink or smoke when using this product.
Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage:
Keep in properly labelled containers.
Store locked up.
Keep tightly closed.
Store in accordance with the particular national regulations.

Materials to avoid:
Do not store with the following product types:
Strong oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of)</th>
<th>Control parameters / Permissible</th>
<th>Basis</th>
</tr>
</thead>
</table>

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance
- liquid

<table>
<thead>
<tr>
<th>Compound</th>
<th>Exposure</th>
<th>Concentration</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzylpenicillin</td>
<td>TWA</td>
<td>2000 µg/m³ (OEB 1)</td>
<td>Internal</td>
</tr>
<tr>
<td>Streptomycin sulphate</td>
<td>TWA</td>
<td>OEB 2 (≥ 100 &lt; 1,000 µg/m³)</td>
<td>Internal</td>
</tr>
<tr>
<td>Procaine hydrochloride</td>
<td>TWA</td>
<td>60 µg/m³ (OEB 3)</td>
<td>Internal</td>
</tr>
<tr>
<td>Piroxicam</td>
<td>TWA</td>
<td>100 µg/m³ (OEB 2)</td>
<td>Internal</td>
</tr>
</tbody>
</table>

### Engineering measures
- Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less quick connections).
- All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.
- Laboratory operations do not require special containment.

### Personal protective equipment
#### Respiratory protection
- If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
  - Filter type: Particulates type
  - Hand protection Material: Chemical-resistant gloves

#### Eye protection
- Wear safety glasses with side shields or goggles.
- If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.
- Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

#### Skin and body protection
- Work uniform or laboratory coat.

#### Hygiene measures
- If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.
- When using do not eat, drink or smoke.
- Contaminated work clothing should not be allowed out of the workplace.
- Wash contaminated clothing before re-use.
- The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
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<tr>
<td>Odour</td>
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<tr>
<td>Odour Threshold</td>
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<tr>
<td>pH</td>
<td>No data available</td>
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<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
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</tr>
<tr>
<td>Evaporation rate</td>
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<tr>
<td>Flammability (solid, gas)</td>
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<tr>
<td>Flammability (liquids)</td>
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</tr>
<tr>
<td>Upper explosion limit / Upper flammability limit</td>
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</tr>
<tr>
<td>Lower explosion limit / Lower flammability limit</td>
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<tr>
<td>Vapour pressure</td>
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<tr>
<td>Relative vapour density</td>
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</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
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<tr>
<td>Viscosity</td>
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</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>The substance or mixture is not classified as oxidizing.</td>
</tr>
</tbody>
</table>
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Molecular weight : No data available
Particle size : Not applicable

10. STABILITY AND REACTIVITY
Reactivity : Not classified as a reactivity hazard.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Can react with strong oxidizing agents.
Conditions to avoid : None known.
Incompatible materials : Oxidizing agents
Hazardous decomposition products : No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
- Inhalation
- Skin contact
- Ingestion
- Eye contact

Acute toxicity
May be harmful if swallowed.

Product:
Acute oral toxicity : Acute toxicity estimate: 2,447 mg/kg
Method: Calculation method

Components:
Benzylpenicillin:
Acute oral toxicity : LD50 (Rat): 8,000 mg/kg
LD50 (Mouse): > 5,000 mg/kg
Acute toxicity (other routes of administration) : LD50 (Mouse): 3,500 mg/kg
Application Route: Intraperitoneal
LD50 (Mouse): 329 mg/kg
Application Route: Intravenous

Streptomycin sulphate:
Acute oral toxicity : LD50 (Hamster): 400 mg/kg
LD50 (Rat): 430 mg/kg
LD50 (Mouse): 25,000 mg/kg
Acute toxicity (other routes of administration) : LD50 (Mouse): 85 - 111 mg/kg
administration) Application Route: Intravenous

LD50 (Mouse): 575 - 610 mg/kg
Application Route: Intraperitoneal

LD50 (Mouse): 500 - 600 mg/kg
Application Route: Subcutaneous

TDLo (Dog): 220 - 440 mg/kg
Application Route: Intravenous
Symptoms: Lowered blood pressure

LDLo (Monkey): 110 mg/kg
Application Route: Intravenous

TDLo (Monkey): 30 - 70 mg/kg
Application Route: Subcutaneous
Symptoms: respiratory depression

**Procaine hydrochloride:**

**Acute oral toxicity**
: LD50 (Rat): 200 mg/kg
LD50 (Mouse): 350 mg/kg

**Acute toxicity (other routes of administration)**
: LD50 (Rat): 43 mg/kg
Application Route: Intravenous
LD50 (Mouse): 33 mg/kg
Application Route: Intravenous
LD50 (Dog): 33 mg/kg
Application Route: Intravenous

**Piroxicam:**

**Acute oral toxicity**
: LD50 (Rat): 216 mg/kg
LD50 (Dog): 108 mg/kg
LD50 (Hamster): 170 mg/kg
LD50 (Guinea pig): 388 mg/kg
LD50 (Monkey): 1,000 mg/kg

**Acute dermal toxicity**
: LD50 (Rat): > 5,000 mg/kg

**Skin corrosion/irritation**
Not classified based on available information.
Serious eye damage/eye irritation
Causes eye irritation.

Components:
Streptomycin sulphate:
Result: Mild eye irritation

Procaine hydrochloride:
Result: Moderate eye irritation

Respiratory or skin sensitisation
Skin sensitisation
May cause an allergic skin reaction.

Respiratory sensitisation
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Components:
Benzylpenicillin:
Test Type: Local lymph node assay (LLNA)
Exposure routes: Dermal
Species: Mouse
Result: Weak sensitizer

Test Type: Maximisation Test
Exposure routes: Dermal
Species: Guinea pig
Result: positive
Remarks: Based on data from similar materials
Result: Strong sensitizer
Remarks: Based on human experience.

Streptomycin sulphate:
Test Type: Human repeat insult patch test (HRIPT)
Exposure routes: Dermal
Species: Humans
Result: Weak sensitizer

Procaine hydrochloride:
Exposure routes: Dermal
Result: Sensitiser
Remarks: Based on human experience, Based on data from similar materials

Germ cell mutagenicity
Not classified based on available information.
Components:

Benzylpenicillin:
Germ cell mutagenicity - Assessment: Weight of evidence does not support classification as a germ cell mutagen.

Streptomycin sulphate:
Genotoxicity in vitro: Test Type: Chromosomal aberration
Result: equivocal

Genotoxicity in vivo: Test Type: Chromosomal aberration
Cell type: Human lymphocytes
Result: negative

Procaine hydrochloride:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Result: equivocal

Piroxicam:
Genotoxicity in vivo: Test Type: sister chromatid exchange assay
Species: Humans
Cell type: Human lymphocytes
Result: negative

Carcinogenicity
Not classified based on available information.

Components:

Streptomycin sulphate:
Species: Rat
Application Route: Oral
NOAEL: 5 mg/kg body weight
Result: negative

Carcinogenicity - Assessment: Weight of evidence does not support classification as a carcinogen

Reproductive toxicity
May damage the unborn child.

Components:

Benzylpenicillin:
Effects on fertility: Test Type: Fertility
Species: Mouse
Result: No effects on fertility

Test Type: Fertility
<table>
<thead>
<tr>
<th>Species</th>
<th>Fertility</th>
<th>Application Route</th>
<th>LOAEL</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat</td>
<td>Test Type: Fertility</td>
<td>Intraperitoneal</td>
<td>40 mg/kg body weight</td>
<td>male reproductive effects</td>
</tr>
<tr>
<td>Streptomycin sulphate:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species: Mouse</td>
<td>Test Type: Development</td>
<td>Intraperitoneal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developmental Toxicity: LOAEL: 250 mg/kg body weight</td>
<td>Symptoms: fetal deafness, Embryo-foetal toxicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species: Rabbit</td>
<td>Test Type: Development</td>
<td>Oral</td>
<td>NOAEL: 10 mg/kg body weight</td>
<td>No teratogenic effects</td>
</tr>
<tr>
<td>Reproductive toxicity - Assessment:</td>
<td>May damage the unborn child.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procaine hydrochloride:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reproductive toxicity - Assessment:</td>
<td>May damage the unborn child.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piroxicam:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effects on foetal development:</td>
<td>Test Type: Development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species: Rat</td>
<td></td>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developmental Toxicity: LOAEL: 10 mg/kg body weight</td>
<td>Result: Embryo-foetal toxicity, No teratogenic effects, Fetal growth retardation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Test Type: Development
Species: Rat
Application Route: Oral
Developmental Toxicity: LOAEL: 30 mg/kg body weight
Symptoms: foetal mortality
Result: Embryo-foetal toxicity, No teratogenic effects, Fetal growth retardation
Remarks: Maternal toxicity observed.

Test Type: Development
Species: Rat
Application Route: Oral
Developmental Toxicity: LOAEL: 0.4 - 4 mg/kg body weight
Result: Effects on foetal development

Test Type: Development
Species: Rabbit
Application Route: Oral
Developmental Toxicity: NOAEL: 10 mg/kg body weight
Result: No embryo-foetal toxicity

Reproductive toxicity - Assessment: Suspected of damaging the unborn child.

STOT - single exposure
May cause damage to organs (Nervous system, Heart).

Components:
Procaine hydrochloride:
Target Organs: Nervous system, Heart
Assessment: Causes damage to organs.

STOT - repeated exposure
Causes damage to organs (Kidney, inner ear) through prolonged or repeated exposure.
May cause damage to organs (Gastrointestinal tract) through prolonged or repeated exposure.

Components:
Streptomycin sulphate:
Target Organs: Kidney, inner ear
Assessment: Causes damage to organs through prolonged or repeated exposure.

Piroxicam:
Target Organs: Gastrointestinal tract
Assessment: Causes damage to organs through prolonged or repeated exposure.
Repeated dose toxicity

**Components:**

**Streptomycin sulphate:**

- **Species:** Rat
- **NOAEL:** 100 mg/kg
- **Application Route:** Subcutaneous
- **Exposure time:** 72 Days
- **Remarks:** No significant adverse effects were reported

- **Species:** Cat
- **LOAEL:** 200 mg/kg
- **Application Route:** Oral
- **Exposure time:** 90 Days
- **Target Organs:** inner ear

- **Species:** Dog
- **LOAEL:** 44 mg/kg
- **Application Route:** Intramuscular
- **Exposure time:** 14 Days
- **Target Organs:** inner ear

- **Species:** Dog
- **LOAEL:** 50 - 100 mg/kg
- **Application Route:** Intramuscular
- **Exposure time:** 20 Days
- **Target Organs:** inner ear, Kidney
- **Symptoms:** ataxia

- **Species:** Monkey
- **NOAEL:** 50 mg/kg
- **LOAEL:** 100 mg/kg
- **Application Route:** Intramuscular
- **Exposure time:** 5 Days
- **Target Organs:** Liver, Kidney

- **Species:** Rat
- **NOAEL:** 5 mg/kg
- **Application Route:** Oral
- **Exposure time:** 2 yr
- **Remarks:** No significant adverse effects were reported

- **Species:** Monkey
- **LOAEL:** 25 mg/kg
- **Application Route:** Subcutaneous
- **Exposure time:** 66 Days
- **Target Organs:** Blood, Liver, Kidney
- **Symptoms:** anemia

Aspiration toxicity

Not classified based on available information.
Experience with human exposure

**Components:**

**Benzylpenicillin:**
- **Inhalation**: Symptoms: Allergic reactions, Abdominal pain, bronchospasm, skin rash

**Streptomycin sulphate:**
- **Inhalation**: Target Organs: inner ear
  - Symptoms: hearing loss
- **Target Organs: Kidney**
  - Symptoms: hearing loss
- **Skin contact**: Symptoms: skin rash

**Procaine hydrochloride:**
- **Inhalation**: Target Organs: Central nervous system
  - Symptoms: nervousness, Dizziness, Convulsions, Breathing difficulties, Rash, Swelling of tissue, irregular heart beat
  - Remarks: May cause harm to the unborn child.
  - Based on clinical use
- **Target Organs: Heart**
  - Symptoms: nervousness, Dizziness, Convulsions, Breathing difficulties, Rash, Swelling of tissue, irregular heart beat
  - Remarks: May cause harm to the unborn child.
  - Based on clinical use

**Piroxicam:**
- **Ingestion**: Target Organs: Gastrointestinal tract
  - Symptoms: Diarrhoea, constipation, flatulence, Headache, Dizziness, tinnitus, skin rash, Ulceration, chest pain, Abdominal pain

12. ECOLOGICAL INFORMATION

**Ecotoxicity**

**Components:**

**Benzylpenicillin:**
- **Toxicity to fish**: LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
  - Exposure time: 96 hrs
  - Method: OECD Test Guideline 203
  - Remarks: Based on data from similar materials

**Toxicity to daphnia and other aquatic invertebrates**: EC50 (Daphnia magna (Water flea)): 3.6 mg/l
  - Exposure time: 48 hrs
  - Method: OECD Test Guideline 202
  - Remarks: Based on data from similar materials

**Toxicity to algae/aquatic plants**: EC50 (Raphidocelis subcapitata (freshwater green alga)): > 100 mg/l
  - Exposure time: 72 hrs
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Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

NOEC (Raphidocelis subcapitata (freshwater green alga)): 50 mg/l
Exposure time: 72 hrs
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

EC50 (blue-green algae): 0.74 mg/l
Exposure time: 72 hrs
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

NOEC (blue-green algae): 0.14 mg/l
Exposure time: 72 hrs
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

M-Factor (Acute aquatic toxicity): 1

Toxicity to microorganisms: EC50: > 500 mg/l
Exposure time: 3 h
Test Type: Respiration inhibition
Method: OECD Test Guideline 209
Remarks: Based on data from similar materials

NOEC: 5 mg/l
Exposure time: 3 h
Test Type: Respiration inhibition
Method: OECD Test Guideline 209
Remarks: Based on data from similar materials

Streptomycin sulphate:

Toxicity to daphnia and other aquatic invertebrates:
EC50 (Daphnia magna (Water flea)): 487 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants:
EC50 (Microcystis aeruginosa (blue-green algae)): 0.007 mg/l
Exposure time: 72 h
Method: ISO 8692

EC50 (Selenastrum capricornutum (green algae)): 0.133 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity): 100

Toxicity to daphnia and other aquatic invertebrates (chron-
ic toxicity) Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : 100

**Procaine hydrochloride:**

**Ecotoxicology Assessment**

Acute aquatic toxicity : Toxic effects cannot be excluded

Chronic aquatic toxicity : Toxic effects cannot be excluded

**Piroxicam:**

**Ecotoxicology Assessment**

Acute aquatic toxicity : Toxic effects cannot be excluded

Chronic aquatic toxicity : Toxic effects cannot be excluded

**Persistence and degradability**

**Components:**

**Benzylpenicillin:**

Biodegradability : Result: Readily biodegradable.

Biodegradation: 70.10 %

Exposure time: 28 d

Method: OECD Test Guideline 301B

Remarks: Based on data from similar materials

**Bioaccumulative potential**

**Components:**

**Benzylpenicillin:**

Partition coefficient: n-octanol/water : log Pow: 1.83

**Streptomycin sulphate:**

Partition coefficient: n-octanol/water : log Pow: -3.2

**Procaine hydrochloride:**

Partition coefficient: n-octanol/water : log Pow: 2.14
SAFETY DATA SHEET

Benzylpenicillin / Streptomycin Sulphate / Procaine Hydrochloride / Piroxicam Liquid Formulation

Version 4.9
Revision Date: 27.08.2021
SDS Number: 2456208-00015
Date of last issue: 28.09.2020
Date of first issue: 13.02.2018

Mobility in soil
No data available

Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues: Dispose of in accordance with local regulations.
Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.
If not otherwise specified: Dispose of as unused product.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG
UN number: UN 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Benzylpenicillin, Streptomycin sulphate)
Class: 9
Packing group: III
Labels: 9

IATA-DGR
UN/ID No.: UN 3082
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s.
(Benzylpenicillin, Streptomycin sulphate)
Class: 9
Packing group: III
Labels: Miscellaneous
Packing instruction (cargo aircraft): 964
Packing instruction (passenger aircraft): 964
Environmentally hazardous: yes

IMDG-Code
UN number: UN 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Benzylpenicillin, Streptomycin sulphate)
Class: 9
Packing group: III
Labels: 9
EmS Code: F-A, S-F
Marine pollutant: yes

Transport in bulk according to IMO instruments
Not applicable for product as supplied.
Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

The components of this product are reported in the following inventories:

- AICS: not determined
- DSL: not determined
- IECSC: not determined

16. OTHER INFORMATION

Further information

Sources of key data used to compile the Safety Data Sheet:

Date format: dd.mm yyyy

Full text of other abbreviations

AICIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OEL - Occupational Exposure Limit; OECD - Organisation for Economic Co-operation and Development; OELx - Loading rate associated with x% of a test population; OPPTS - Organisation for the Prohibition of Chemical Weapons; PC50 - Proteric Concentration to 50% of a test population; PCx - Proteric Concentration associated with x% of a test population; PEL - Permissible Exposure Limit; PELT - Permissible Exposure Limit Time Weighted Average; PERG - Personal Exposure Response Guide; PNEC - Predicted No Effect Concentration; PNRx - Loading rate associated with x% of a test population; PS - Poisonous Substance; s.c. - Subcutaneous; SAR - Structure Activity Relationship; SbC - Subchronic; SMB - Skin and Mucous membrane; SMD - State of the Market Database; SNP - Sensitive Population; SO2 - Sulfur Dioxide; SRL - Surveillance Register List; STH - Safety Data Sheet; SVHC - Substances of Very High Concern; TWA - Time Weighted Average; UACL - Upper容许 Concentration Levels; UCL - Upper Limit; UERG - Upper Emergency Response Guide; VET - Veterinary; WL - Welfare Load; WHO - World Health Organization; x% - x% response; y% - y% growth rate
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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user’s end product, if applicable.