1. Identification of the substance/mixture and of the company/undertaking

Identification of the substance/preparation

Product code: 10378016
Product name: PEN-STREP-GLUTAMINE, LIQ

Company/Undertaking Identification

Life Technologies
5791 VAN ALLEN WAY
PO BOX 6482
CARLSBAD, CA 92008
+1 760 603 7200

INVITROGEN CORPORATION
5250 MAINWAY DRIVE
BURLINGTON, ONT
CANADA L7L 6A4
800/263-6236

24 hour Emergency Response (Transport):
866-536-0631
301-431-8585
Outside of the U.S. +1-301-431-8585

For research use only. Not intended for human or animal diagnostic or therapeutic uses.
2. Hazards identification

GHS - Classification

Signal Word
WARNING

Health Hazard

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Skin Corrosion/Irritation</td>
</tr>
<tr>
<td>2B</td>
<td>Serious Eye Damage/Eye Irritation</td>
</tr>
<tr>
<td>1</td>
<td>Skin Sensitization</td>
</tr>
</tbody>
</table>

Physical Hazards
not hazardous

Hazard statements
H315 - Causes skin irritation
H320 - Causes eye irritation
H335 - May cause respiratory irritation
H317 - May cause an allergic skin reaction

Precautionary statements
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P264 - Wash hands thoroughly after handling

Principle Routes of Exposure/
Potential Health effects

<table>
<thead>
<tr>
<th>Route</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>Irritating to eyes.</td>
</tr>
<tr>
<td>Skin</td>
<td>May cause sensitization by skin contact. Irritating to skin.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>May cause irritation of respiratory tract.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>May be harmful if swallowed.</td>
</tr>
</tbody>
</table>
Special protective equipment for firefighters

Wear self-contained breathing apparatus and protective suit.

See Section 12 for additional information.

Handling and storage

Avoid contact with skin and eyes.

Inhalation
Move to fresh air. If symptoms persist, call a physician.

Skin contact
Wash off immediately with plenty of water. If symptoms persist, call a physician.

Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.

Ingestion
Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

Inhalation
Move to fresh air. If symptoms persist, call a physician.

Notes to physician
Treat symptomatically.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>EINECS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>STREPTOMYCIN SULFATE</td>
<td>3810-74-0</td>
<td>-</td>
<td>0.5-1.5</td>
</tr>
<tr>
<td>Penicillin G, sodium salt</td>
<td>69-57-8</td>
<td>-</td>
<td>0.1-1.0</td>
</tr>
</tbody>
</table>

We recommend handling all chemicals with caution.

4. First aid measures

Skin contact
Wash off immediately with plenty of water. If symptoms persist, call a physician.

Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.

Ingestion
Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

Inhalation
Move to fresh air. If symptoms persist, call a physician.

Notes to physician
Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media
Dry chemical.

Special protective equipment for firefighters
Wear self-contained breathing apparatus and protective suit.

6. Accidental release measures

Personal precautions
Use personal protective equipment.

Methods for cleaning up
Soak up with inert absorbent material.

Environmental precautions
Prevent further leakage or spillage if safe to do so.

See Section 12 for additional information.

7. Handling and storage

Avoid contact with skin and eyes.
8. Exposure controls/personal protection

Exposure limits

We are not aware of any national exposure limit.

Engineering measures

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Personal Protective Equipment requirements are dependent on the user institution’s risk assessment and are specific to the risk assessment for each laboratory where this material may be used.

Respiratory protection

In case of insufficient ventilation wear suitable respiratory equipment.

Hand protection

Impervious gloves.

Eye protection

Safety glasses with side-shields.

Skin and body protection

Lightweight protective clothing.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

Prevent product from entering drains.

9. Physical and chemical properties

General Information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>No information available</td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>°C no data available</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>°C no data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>°C no data available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>°C no data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>soluble</td>
</tr>
<tr>
<td>pH Range</td>
<td>5.8-6.2</td>
</tr>
</tbody>
</table>

10. Stability and reactivity

Stability

Stable under normal conditions.

Materials to avoid

No information available.

Hazardous decomposition products

No information available.

Polymerization

Hazardous polymerisation does not occur.

11. Toxicological information

Acute toxicity

We are not aware of any national exposure limit.
### Chemical Name

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 (oral,rat/mouse)</th>
<th>LD50 (dermal,rat/rabbit)</th>
<th>LC50 (inhalation,rat/mouse)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STREPTOMYCIN SULFATE</td>
<td>= 430 mg/kg (Rat)</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>Penicillin G, sodium salt</td>
<td>= 6916 mg/kg (Rat)</td>
<td>no data available</td>
<td>no data available</td>
</tr>
</tbody>
</table>

### Principle Routes of Exposure/

**Potential Health effects**

- **Eyes**: Irritating to eyes.
- **Skin**: May cause sensitization by skin contact. Irritating to skin.
- **Inhalation**: May cause irritation of respiratory tract.
- **Ingestion**: May be harmful if swallowed.

- **Carcinogenic effects**: No information available.
- **Mutagenic effects**: No information available.
- **Reproductive toxicity**: No information available.
- **Sensitization**: May cause sensitization of susceptible persons

### 12. Ecological information

- **Ecotoxicity effects**: No information available.
- **Mobility**: No information available.
- **Biodegradation**: No information available.
- **Bioaccumulation**: No information available.

### 13. Disposal considerations

Dispose of in accordance with local regulations.

### 14. Transport information

- **IATA**
  - **Proper shipping name**: Not classified as dangerous in the meaning of transport regulations
  - **Hazard class**: none
  - **Subsidiary Class**: none
  - **Packing group**: none
  - **UN-No**: none

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Revision Date: 01-Jun-2012
Product code: 10378016
Product name: PEN-STREP-GLUTAMINE, LIQ
www.lifetechnologies.com
15. Regulatory information

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>STREPTOMYCIN SULFATE</td>
<td>Listed</td>
</tr>
<tr>
<td>3810-74-0 (0.5-1.5)</td>
<td></td>
</tr>
</tbody>
</table>

U.S. Federal Regulations

SARA 313
This product is not regulated by SARA.

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product does not contain HAPs.

U.S. State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>Category</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>STREPTOMYCIN SULFATE</td>
<td>3810-74-0</td>
<td>0.5-1.5</td>
<td>Developmental</td>
<td></td>
</tr>
</tbody>
</table>

WHMIS hazard class:
D2B  Toxic materials

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

16. Other information

Reason for Revision
not applicable. (M)SDS sections updated.

For research use only.

The above information was acquired by diligent search and/or investigation and the recommendations are based on prudent application of professional judgment. The information shall not be taken as being all inclusive and is to be used only as a guide. All materials and mixtures may present unknown hazards and should be used with caution. Since the Company cannot control the actual methods, volumes, or conditions of use, the Company shall not be held liable for any damages or losses resulting from the handling or from contact with the product as described herein. THE INFORMATION IN THIS MSDS DOES NOT CONSTITUTE A WARRENTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

End of Safety Data Sheet