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

1.1. Product identifier
Product form : Mixture
Trade name : Zolvstat™ Multi-Enzymatic Detergent
Product code : 1225

1.2. Relevant identified uses of the substance or mixture and uses advised against
Industrial/Professional use spec : Product for hospital and professional use only. Not for home use.
Use of the substance/mixture : Multi-Enzymatic Detergent

1.3. Details of the supplier of the safety data sheet
STERIS Corporation
P. O. Box 147, St. Louis, MO 63166, US
Telephone Number for Information: 1-800-548-4873 (Customer Service-Healthcare Products)

1.4. Emergency telephone number
Emergency number : US Emergency Telephone No.1-314-535-1395 (STERIS); 1-800-424-9300 (CHEMTREC)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
GHS-US classification
Resp. Sens. 1 H334

2.2. Label elements
GHS-US labelling
Hazard pictograms (GHS-US) :

Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
Precautionary statements (GHS-US) : P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P284 - In case of inadequate ventilation, wear respiratory protection
P304+P311 - IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing
P342+P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor

2.3. Other hazards
No additional information available.

2.4. Unknown acute toxicity (GHS-US)
No data available.

SECTION 3: Composition/information on ingredients

3.1. Substance
Not applicable.
Full text of H-phrases: See section 16.

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerin</td>
<td>(CAS No) 56-81-5</td>
<td>5-10</td>
<td>Not classified</td>
</tr>
<tr>
<td>Subtilisins (proteolytic enzymes)</td>
<td>(CAS No) 9014-01-1</td>
<td>0.1-1</td>
<td>Skin Irrit. 2, H315 Eye Dam. 1, H318 Resp. Sens. 1, H334 STOT SE 3, H335</td>
</tr>
</tbody>
</table>
SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation: Remove patient to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. Get medical attention.

First-aid measures after skin contact: Immediately flush skin with plenty of water for at least 15 minutes. Remove immediately all contaminated clothing. Rinse skin with water. Get medical advice/attention.

First-aid measures after eye contact: In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately get medical attention.

First-aid measures after ingestion: If victim completely conscious/alert. Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician. Give water or milk if the person is fully conscious.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries: May cause respiratory irritation.

Symptoms/injuries after inhalation: Inhalation of vapors or spray/mists may cause allergy or asthma symptoms or breathing difficulties. May cause respiratory irritation.

Symptoms/injuries after skin contact: Causes skin irritation.

Symptoms/injuries after eye contact: Causes eye irritation.

Symptoms/injuries after ingestion: Can occur: Gastrointestinal disturbance.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Use extinguishing media appropriate for primary source of fire.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire: Hazardous decomposition products may be released during prolonged heating like smokes, carbon monoxide and dioxide, nitrogen oxides (NOx).

5.3. Advice for firefighters

Firefighting instructions: Exercise caution when fighting any chemical fire.

Protective equipment for firefighters: Use self-contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self-contained breathing apparatus.

Other information: Hazardous decomposition products may be released during prolonged heating like smokes, carbon monoxide and dioxide, nitrogen oxides (NOx).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Do not breathe fumes, vapors. Avoid contact with skin, eyes and clothes.

6.1.1. For non-emergency personnel

Protective equipment: Wear protective gloves and eye/face protection. For further information refer to Section 8: "Exposure controls/personal protection".

Emergency procedures: Stop leak if safe to do so. Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment: Equip cleanup crew with proper protection.

Emergency procedures: Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Comply with applicable local, national and international regulation. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Residue may be washed down with water. Product may be flushed to a sanitary sewer with copious amounts of water, if in accordance with local, state, or national legislation.
Zolvstat™ Multi-Enzymatic Detergent
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according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Precautions for safe handling: Product for hospital and professional use only. Read label before use. Provide good ventilation in process area to prevent formation of vapor. Avoid all eye and skin contact and do not breathe vapor and mist. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Hygiene measures: Take care for general good hygiene and housekeeping. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Provide adequate ventilation. A washing facility/water for eye and skin cleaning purposes should be present.
Storage conditions: Keep only in the original container in a cool, well ventilated place. Keep container closed when not in use.
Incompatible materials: Strong oxidizing agents.
Storage temperature: < 32 °C (< 90 °F).
Storage area: Store in dry, cool, well-ventilated area.
Special rules on packaging: Correctly labelled.

7.3. Specific end use(s)
No additional information available.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters

<table>
<thead>
<tr>
<th>Subtilisins (proteolytic enzymes) (9014-01-1)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USA - NIOSH NIOSH REL (STEL) (mg/m³)</td>
<td>0.00006 mg/m³</td>
</tr>
<tr>
<td>USA ACGIH ACGIH Ceiling (mg/m³)</td>
<td>0.00006 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Glycerin (56-81-5)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USA - OSHA OSHA PEL (TWA) (mg/m³)</td>
<td>5 mg/m³</td>
</tr>
</tbody>
</table>

8.2. Exposure controls
Appropriate engineering controls: Ensure adequate ventilation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Personal protective equipment: Avoid all unnecessary exposure. Personal protective equipment should be selected based upon the conditions under which this product is handled or used. Protective clothing. Gloves. Protective goggles.

Hand protection: Wear rubber gloves or latex-free gloves.
Eye protection: Wear chemical splash goggles.
Skin and body protection: Wear suitable protective clothing.
Respiratory protection: Work in well-ventilated zones or use proper respiratory protection.
Other information: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties

| Physical state | Liquid |
| Appearance | Clear |
| Color | Blue |
| Odor | Fresh odor |
| Odor threshold | No data available |
| pH | 8.5 - 9.0 |
Zolvstat™ Multi-Enzymatic Detergent
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according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH solution</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Density</td>
<td>(Approximately) 1.1 g/ml</td>
</tr>
<tr>
<td>Solubility</td>
<td>Water: Completely soluble</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information
No additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available.

10.2. Chemical stability
Stable under normal conditions of use.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Heat. Light.

10.5. Incompatible materials
Strong oxidizers.

10.6. Hazardous decomposition products
Hazardous decomposition products may be released during prolonged heating like smokes, carbon monoxide and dioxide. Nitrogen oxides (NOx).

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity: Causes skin and eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.

<table>
<thead>
<tr>
<th>Substance</th>
<th>LD50 oral (rat)</th>
<th>LD50 dermal (rabbit)</th>
<th>LC50 inhalation (rat) (mg/l)</th>
<th>Substances (proteolytic enzymes) (9014-01-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zolvstat™ Multi-Enzymatic Detergent</td>
<td>&gt; 2000 mg/kg, rat</td>
<td>&gt; 2000 mg/kg, rabbit</td>
<td>20 mg/l/4h, rat</td>
<td></td>
</tr>
<tr>
<td>Glycerin (56-81-5)</td>
<td>12600 mg/kg</td>
<td>&gt; 10 g/kg</td>
<td>&gt; 570 mg/m² (Exposure time: 1h)</td>
<td></td>
</tr>
<tr>
<td>Subtilisins (proteolytic enzymes) (9014-01-1)</td>
<td>1800 mg/kg</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Zolvstat™ Multi-Enzymatic Detergent

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

**Skin corrosion/irritation**: May cause skin irritation

**Serious eye damage/irritation**: May cause eye irritation

**Respiratory or skin sensitisation**: May cause allergy or asthma symptoms or breathing difficulties if inhaled

**Germ cell mutagenicity**: Not classified

**Carcinogenicity**: Not classified

**Reproductive toxicity**: Not classified

**Specific target organ toxicity (single exposure)**: May cause respiratory irritation

**Specific target organ toxicity (repeated exposure)**: Inhalation of vapors or spray/mists may cause allergy or asthma symptoms or breathing difficulties. May cause respiratory irritation

**(Aspiration hazard)**: Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

**Glycerin (56-81-5)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fishes 1</td>
<td>51 - 57 ml/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [Static])</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>&gt; 500 mg/l (Exposure time: 24 h - Species: Daphnia magna)</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

**Zolvstat™ Multi-Enzymatic Detergent**

Persistence and degradability: Not established.

#### 12.3. Bioaccumulative potential

**Zolvstat™ Multi-Enzymatic Detergent**

Bioaccumulative potential: Not established.

**Glycerin (56-81-5)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
<td>(no bioaccumulation)</td>
</tr>
<tr>
<td>Log Pow</td>
<td>-1.76</td>
</tr>
</tbody>
</table>

#### 12.4. Mobility in soil

No additional information available.

#### 12.5. Other adverse effects

Other information: Avoid release to the environment.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

**Waste disposal recommendations**: Dispose in a safe manner in accordance with local/national regulations. Do not re-use empty containers.

**Additional information**: Empty containers should be thoroughly rinsed with large quantities of clean water. Empty containers should be taken for recycling, recovery or waste in accordance with local regulation.

**Ecology - waste materials**: Avoid release to the environment.

### SECTION 14: Transport information

In accordance with DOT

No dangerous good in sense of transport regulations.

**Additional information**

Other information: No supplementary information available.

**ADR**

Transport document description: Non-hazardous.

**Transport by sea**

IMDG Class: Non-hazardous.
Zolvstat™ Multi-Enzymatic Detergent
Safety Data Sheet
according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Air transport
ICAO/IATA Class : Non-hazardous.

SECTION 15: Regulatory information

15.1. US Federal regulations
Subtilisins (proteolytic enzymes) (9014-01-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations
No additional information available.

15.3. US State regulations
No additional information available.

15.3. Canadian regulations
No additional information available.

SECTION 16: Other information

Revision Date : 03/29/2016

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-phrase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Dam. 1</td>
<td>Serious eye damage/eye irritation, Category 1</td>
</tr>
<tr>
<td>Resp. Sens. 1</td>
<td>Sensitisation — Respiratory, Category 1</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation Category 2</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity (single exposure) Category 3</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage</td>
</tr>
<tr>
<td>H334</td>
<td>May cause allergy or asthma symptoms or breathing difficulties if inhaled</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
</tbody>
</table>

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

SDS US (GHS HazCom 2012) - US
The information on this sheet is not a specification and does not guarantee specific properties. The information is intended to provide general knowledge as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product or where instruction or recommendations are not followed.