Section 1 - Product and Company Information

Product Name: Protease, Type XIV: Bacterial, From Streptomyces gisaeus
Product Number: P5147
Brand: Sigma Chemical
Company: Sigma-Aldrich
Street Address: 3005 Spuce Street
City, State, Zip, Country: SAINT LOUIS, MO 63103 US
Technical Phone: 800-325-5832
Emergency Phone: 314-776-6565
Fax: 800-325-5052

Section 2 - Composition/Information on InGredIent

Substance Name: PRONASE E
CAS #: 9036-06-0
SARA 313: No
EC no: 232-905-5

Formula: Pronase, Proteine, Proteina a 1, S. gisaeus protease, S. gisaeus proteinase, Streptomyces gisaeus protease, Streptomyces gisaeus proteinase

Section 3 - Hazards Identification

Emergency Overview:
Caution: Avoid contact and inhalation. Target organs: Lungs.

HMIS Rating:
Health: 1
Flammability: 0
Reactivity: 0

NFPA Rating:
Health: 1
Flammability: 0
Reactivity: 0

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure
If swallowed, wash out mouth with water. Provided person is conscious, call a physician.

Inhalation Exposure
If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

Dermal Exposure
In case of contact, immediately wash skin with soap and copious amounts of water.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A

Extinguishing Media
Suitable
Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting
Protective Equipment
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s)
Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s)
Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

Methods for Cleaning Up
Sweep up. Place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling
Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage
Suitable
Keep tightly closed. Store at 20°C.

Section 8 - Exposure Controls / PPE

Engineering Controls
Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment
Respiratory
Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks.

Hand
Protective gloves.

Eye
Chemical safety goggles.
General Hygiene Measures
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Appearance</td>
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<tr>
<td>Physical State</td>
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<tr>
<td>Solubility</td>
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<tr>
<td>N/A = not available</td>
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</tbody>
</table>

Section 10 - Stability and Reactivity

Stability
Stable
Materials to Avoid
Strong oxidizing agents

Hazardous Decomposition Products
Hazardous Decomposition Products
Nature of decomposition products not known

Section 11 - Toxicological Information

Hazardous Polymerization
Hazardous Polymerization
Will not occur.

Route of Exposure
Skin Contact
May cause skin irritation.

Skin Absorption
May be harmful if absorbed through the skin.

Eye Contact
May cause eye irritation.

Inhalation
May be harmful if inhaled. Material may be initiating to mucous membranes and upper respiratory tract.

Ingestion
May be harmful if swallowed.

Sensitization
Sensitization
Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

Target Organ(s) or System(s)
Lungs.

Signs and Symptoms of Exposure
Repeated exposure can cause Asthma.

RTECS Number:  UK9585900

Toxicity Data
Oral - Rat: 3290 mg/kg (LD₅₀)
Intraperitoneal - Rat: 18000 µg/kg (LD₅₀)
Subcutaneous - Rat: 2300 µg/kg (LD₅₀)
Intravenous - Rat: 158000 µg/kg (LD₅₀)
Oral - Mouse: 24910 mg/kg (LD₅₀)
Intraperitoneal - Mouse: 141000 µg/kg (LD₅₀)
Subcutaneous - Mouse: 26800 µg/kg (LD₅₀)
Intravenous - Mouse: 205000 µg/kg (LD₅₀)
Oral - Rabbit: 1243 KU/KG (LD₅₀)

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation
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.
Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: None
Non-Hazardous for Transport This substance is considered to be nonhazardous for transport.
Section 15 - Regulatory Information

EU Additional Classification
Safety Statements
B: 22, 24/25
Do not breathe dust. Avoid contact with skin and eyes.

US Classification and Label Text
US Statements
Caution: Avoid contact and inhalation. Target organ(s): Lungs.

United States Regulatory Information
SARA Listed: No

Canada Regulatory Information
WHMIS Classification
This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: No
NGSL: No

Section 16 - Other Information

Disclaimer
For R&D use only. Not for drug, household or other uses.

Warranty
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.