Safety Data Sheet

Cat. # 786-043

Proteinase K

Size: 100mg
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

<table>
<thead>
<tr>
<th>Product form</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance name</td>
<td>Proteinase K, Lyophilized</td>
</tr>
<tr>
<td>EC Index-No.</td>
<td>647-014-00-9</td>
</tr>
<tr>
<td>EC-No.</td>
<td>254-457-8</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>39450-01-6</td>
</tr>
<tr>
<td>Product code</td>
<td>515P</td>
</tr>
<tr>
<td>Type of product</td>
<td>Pure substance</td>
</tr>
<tr>
<td>Synonyms</td>
<td>Endopeptidase K / proteinase K / proteinase K, Glyc, PCR-Grade SL / proteinase, serine, Tritirachium album / proteinase, tritirachium album serine / Tritirachium album serine / Tritirachium alkaline proteinase</td>
</tr>
<tr>
<td>Product group</td>
<td>Raw material</td>
</tr>
<tr>
<td>BIG no</td>
<td>37946</td>
</tr>
</tbody>
</table>

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

1.2.1. Relevant identified uses

Main use category: Research purposes
Use of the substance/mixture: Chemical substance for research Enzyme

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

Emergency number: Chemtrec 1-800-424-9300 (USA/Canada), +1-703-527-3887 (Intl)

<table>
<thead>
<tr>
<th>Country</th>
<th>Organisation/Company</th>
<th>Address</th>
<th>Emergency number</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Belfast Centre) Royal Victoria Hospital</td>
<td>Grosvenor Road BT12 8BA Belfast</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Birmingham Centre) City Hospital</td>
<td>Dudley Road B18 7QH Birmingham</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Cardiff Centre)</td>
<td>Penarth CF64 2XX Cardiff</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh</td>
<td>Little France Crescent EH16 4SA Edinburgh</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Guy's &amp; St Thomas' Poisons Unit Medical Toxicology Unit, Guy's &amp; St Thomas' Hospital Trust</td>
<td>Avonley Road SE14 5ER London</td>
<td>0870 243 2241</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit</td>
<td>Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle</td>
<td>0344 892 0111</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 2 H315
Serious eye damage/eye irritation, Category 2 H319
Respiratory sensitisation, Category 1 H334
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract H335
Proteinase K, Lyophilized Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Irritation

Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects

May cause respiratory irritation. Causes skin irritation. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP):

| GHS07 | GHS08 |

CLP Signal word: Danger

Hazard statements (CLP):

H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 - May cause respiratory irritation.

Precautionary statements (CLP):

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P284 - Wear respiratory protection.
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.
P312 - Call a POISON CENTRE or doctor if you feel unwell.
P313 - Specific treatment (see supplemental first aid instruction on this label).
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P342+P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type: Mono-constituent

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proteinase K, Lyophilized</td>
<td>(CAS-No.) 39450-01-6 (EC-No.) 254-457-8 (EC Index-No.) 647-014-00-9</td>
<td>100</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 STOT SE 3, H335</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable
Proteinase K, Lyophilized
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general:

First-aid measures after inhalation:
Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact:
Wash immediately with lots of water. Soap may be used. Take victim to a doctor if irritation persists.

First-aid measures after eye contact:
Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion:
Rinse mouth with water. Do not induce vomiting. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

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

Symptoms/effects after inhalation:
AFTER INHALATION OF DUST/MIST: Irritation of the respiratory tract. Irritation of the nasal mucous membranes. ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Respiratory difficulties.

Symptoms/effects after skin contact:
Tingling/irritation of the skin.

Symptoms/effects after eye contact:
Irritation of the eye tissue.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Unsuitable extinguishing media:
Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire:
Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire:
Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions:
Dilute toxic gases with water spray.

Protection during firefighting:
Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment:

Emergency procedures:
Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes.

Measures in case of dust release:
In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders

Protective equipment:
Do not attempt to take action without suitable protective equipment. For further information refer to section 8: “Exposure controls/personal protection”.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment:
Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray.

Methods for cleaning up:
Stop dust cloud by humidifying. Scoop solid spill into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

Other information:
Dispose of materials or solid residues at an authorized site.
6.4. Reference to other sections
For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Avoid raising dust. Keep away from naked flames/heat. Carry operations in the open/under local. exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing.

Hygiene measures: Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Storage temperature: < 0 °C
Heat and ignition sources: KEEP SUBSTANCE AWAY FROM: heat sources.
Information on mixed storage: KEEP SUBSTANCE AWAY FROM: oxidizing agents.
Storage area: Keep container in a well-ventilated place. To be kept quick-frozen. Meet the legal requirements.
Special rules on packaging: SPECIAL REQUIREMENTS: closing. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Exposure controls
Appropriate engineering controls:
Ensure good ventilation of the work station.

Hand protection:
Gloves

Eye protection:
Face shield. In case of dust production: protective goggles

Skin and body protection:
Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing

Respiratory protection:
Dust production: dust mask with filter type P2

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
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<tr>
<td>Appearance</td>
<td>Solid</td>
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<tr>
<td>Colour</td>
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<tr>
<td>Odour</td>
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<td>Odour threshold</td>
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<tr>
<td>pH</td>
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<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
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<tr>
<td>Melting point</td>
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</tr>
<tr>
<td>Freezing point</td>
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</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
</tbody>
</table>
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Flammability (solid, gas) : Non flammable.
Vapour pressure : No data available
Relative vapour density at 20 °C : Not applicable
Relative density : Not applicable
Solubility : No data available
Log Pow : No data available
Viscosity, kinematic : Not applicable
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidising properties : No data available
Explosive limits : Not applicable

9.2. Other information
VOC content : 0 %

SECTION 10: Stability and reactivity
10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Hazardous decomposition products.

SECTION 11: Toxicological information
11.1. Information on toxicological effects
Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified
Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious 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
STOT-single exposure : May cause respiratory irritation.
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
Potential adverse human health effects and symptoms : Causes skin irritation. May cause respiratory irritation. Causes serious eye irritation.

SECTION 12: Ecological information
12.1. Toxicity
Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water : Mild water pollutant (surface water). No data available on ecotoxicity.
Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified
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12.2. Persistence and degradability

| Proteinase K, Lyophilized (39450-01-6) | Persistence and degradability | Biodegradability in water: no data available. |

12.3. Bioaccumulative potential

| Proteinase K, Lyophilized (39450-01-6) | Bioaccumulative potential | No bioaccumulation data available. |

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

13.1. Waste treatment methods

Regional legislation (waste) : LWCA (the Netherlands): KGA category 03.
Product/Packaging disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Dissolve or mix with a combustible solvent.

European List of Waste (LoW) code : 15 01 10* - packaging containing residues of or contaminated by dangerous substances 16 05 06* - laboratory chemicals consisting of or containing dangerous substances including mixtures of laboratory chemicals

14.1. UN number

| UN-No. (ADR) | Not applicable |
| UN-No. (IMDG) | Not applicable |
| UN-No. (IATA) | Not applicable |
| UN-No. (ADN) | Not applicable |
| UN-No. (RID) | Not applicable |

14.2. UN proper shipping name

| Proper Shipping Name (ADR) | Not applicable |
| Proper Shipping Name (IMDG) | Not applicable |
| Proper Shipping Name (IATA) | Not applicable |
| Proper Shipping Name (ADN) | Not applicable |
| Proper Shipping Name (RID) | Not applicable |

14.3. Transport hazard class(es)

| ADR | Transport hazard class(es) (ADR) | Not applicable |
| IMDG | Transport hazard class(es) (IMDG) | Not applicable |
| IATA | Transport hazard class(es) (IATA) | Not applicable |
| ADN | Transport hazard class(es) (ADN) | Not applicable |
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14.4. Packing group
Packing group (ADR) : Not applicable
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable
Packing group (ADN) : Not applicable
Packing group (RID) : Not applicable

14.5. Environmental hazards
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user
- Overland transport
Transport regulations (ADR) : Insufficient data
- Transport by sea
Transport regulations (IMDG) : Insufficient data
- Air transport
Transport regulations (IATA) : Insufficient data
- Inland waterway transport
No data available
- Rail transport
Transport regulations (RID) : Insufficient data

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
15.1.1. EU-Regulations
No REACH Annex XVII restrictions
Proteinase K, Lyophilized is not on the REACH Candidate List
Proteinase K, Lyophilized is not on the REACH Annex XIV List
VOC content : 0 %

15.1.2. National regulations
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

16.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:

Eye Irrit. 2  Serious eye damage/eye irritation, Category 2
Resp. Sens. 1  Respiratory sensitisation, Category 1
Skin Irrit. 2  Skin corrosion/irritation, Category 2
STOT SE 3  Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H315  Causes skin irritation.
H319  Causes serious eye irritation.
H334  May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335  May cause respiratory irritation.
Safety Data Sheet applicable for regions: GB - United Kingdom

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.