

SAFETY DATA SHEET

Singapore

Section 1. Identification

GHS product identifier

Proteinase K; part of 'Bacterial genomicPrep Mini Spin Kit, 50 purifications'

Catalogue Number

28-9042-58



Component Number

406172

Chemical name

Proteinase K

Other means of identification

Proteinase K; Protease E.C.3.4.21.62 (bacillus licheniformis, into which protease producing gene of bacillus lentus was introduced); Tritirachium album serine proteinase; (4-nitrophenyl)methyl (4R,5S,6S)-6-[(1R)-1-hydroxyethyl]-4-methyl-7-oxo-3,4-diphenoxy-5-phosphonoxy-1-azabicyclo[3.2.0]hept-2-ene-2-carboxylate

Product type

Liquid.

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

Identified uses

Analytical chemistry.
Laboratory chemicals
Scientific research and development

Uses advised against

Consumer use

Reason

-

Supplier

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Cytiva Singapore
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Singapore 638034

Emergency telephone number (with hours of operation)

+65 6863 6704
(hours of operation: 8.30 pm - 5.30 pm)

Section 2. Hazards identification

Classification of the substance or mixture

SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
RESPIRATORY SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

GHS label elements, including precautionary statements

Hazard pictograms



Signal word

Danger

Hazard statements

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

Precautionary statements



Prevention	Wear protective gloves. Wear eye or face protection. Wear respiratory protection. Avoid breathing vapor. Wash thoroughly after handling.
Response	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. IF ON SKIN: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.
Storage	Store in a well-ventilated place. Keep container tightly closed.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Other hazards which do not result in classification	None known.

Section 3. Composition/information on ingredients

Substance/mixture	Substance		
Chemical name	Proteinase K		
Other means of identification	Proteinase K; Protease E.C.3.4.21.62 (bacillus licheniformis, into which protease producing gene of bacillus lentus was introduced); Tritirachium album serine proteinase; (4-nitrophenyl)methyl (4R,5S,6S)-6-[(1R)-1-hydroxyethyl]-4-methyl-7-oxo-3,4-diphenoxy-5-phosphonoxy-1-azabicyclo[3.2.0]hept-2-ene-2-carboxylate		
Chemical formula	Not available.		
Ingredient name	%	Identifiers	
proteases	100	CAS: 39450-01-6 EC: 254-457-8	

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In the event of any complaints or symptoms, avoid further exposure.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	Causes serious eye irritation.
Inhalation	May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin contact	Causes skin irritation.
Ingestion	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	Adverse symptoms may include the following: pain or irritation watering redness
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Inhalation	Adverse symptoms may include the following: respiratory tract irritation coughing wheezing and breathing difficulties asthma
Skin contact	Adverse symptoms may include the following: irritation redness
Ingestion	No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	No specific treatment.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	No specific data.
Special protective actions for fire-fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill	Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	Put on appropriate personal protective equipment (see Section 8). Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.



Conditions for safe storage, including any incompatibilities	Do not store above the following temperature: -20°C (-4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
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Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls	Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
Skin protection	
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state	Liquid.
Color	White.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Decomposes
Boiling point or initial boiling point and boiling range	Decomposes
Flash point	Not applicable.
Burning time	Not applicable.
Burning rate	Not applicable.
Evaporation rate	Not available.
Flammability	Non-flammable but will burn on prolonged exposure to flame or high temperature.
Lower and upper explosive (flammable) limits	Not available.
Vapor pressure	Not available.
Relative vapor density	Not available.
Relative density	Not available.



Solubility(ies)	
	Media
	cold water
	hot water
	Result
	Easily soluble
	Easily soluble
Solubility in water	Not available.
Partition coefficient: n-octanol/ water	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
SADT	Not available.
Viscosity	Dynamic (room temperature): Not available. Kinematic (room temperature): Not available. Kinematic (40°C (104°F)): Not available.
Flow time (ISO 2431)	Not available.
Particle characteristics	
Median particle size	Not applicable.

Section 10. Stability and reactivity

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No specific data.
Incompatible materials	No specific data.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
SADT	Not available.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Conclusion/Summary [Product] To the best of our knowledge, the toxicological properties of this substance have not been thoroughly investigated.

Skin corrosion/irritation

Not available.

Conclusion/Summary [Product] Not available.

Serious eye damage/eye irritation

Not available.

Conclusion/Summary [Product] Not available.

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product] Not available.

Respiratory or skin sensitization

Not available.

Skin

Conclusion/Summary [Product] Not available.

Respiratory

Conclusion/Summary [Product] Not available.



Germ cell mutagenicity

Not available.

Conclusion/Summary [Product] Not available.

Carcinogenicity

Not available.

Conclusion/Summary [Product] To the best of our knowledge, the toxicological properties of this substance have not been thoroughly investigated.

Reproductive toxicity

Not available.

Conclusion/Summary [Product] Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Result
proteases	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact	Causes serious eye irritation.
Inhalation	May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin contact	Causes skin irritation.
Ingestion	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	Adverse symptoms may include the following: respiratory tract irritation coughing wheezing and breathing difficulties asthma
Skin contact	Adverse symptoms may include the following: irritation redness
Ingestion	No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Long term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Potential chronic health effects

Not available.

Conclusion/Summary [Product] Not available.



General	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
Reproductive toxicity	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

N/A

Section 12. Ecological information

Toxicity

Not available.

Conclusion/Summary [Product] Not available.

Persistence/degradability

Not available.

Conclusion/Summary [Product] Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/Water partition coefficient Not available.

Other adverse effects No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	UN	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

	ADR/RID	ADN
UN number	Not regulated.	Not regulated.



UN proper shipping name	-	-
Transport hazard class(es)	-	-
Packing group	-	-
Environmental hazards	No.	No.
Additional information		
Special precautions for user	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	
Transport in bulk according to IMO instruments	Not available.	

Section 15. Regulatory information

Singapore - hazardous chemicals under government control

None.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

United States	Not determined.
Canada inventory	Not determined.
China	This material is listed or exempted.
Japan	Japan inventory (CSCL): Not determined. Japan inventory (ISHL): This material is listed or exempted.

Section 16. Other information

History

Date of printing	09 February 2026
Date of issue/Date of revision	09 February 2026
Date of previous issue	18 July 2025.
Version	11
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Key to abbreviations

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available



UN = United Nations

Procedure used to derive the classification

Classification	Justification
SKIN CORROSION/IRRITATION - Category 2	Expert judgment
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Expert judgment
RESPIRATORY SENSITIZATION - Category 1	Expert judgment
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Expert judgment

References Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

