

# SAFETY DATA SHEET

New Zealand

## Section 1. Identification

Product name

**Lysis buffer type 4; part of 'Tissue & cells genomicPrep Mini Spin Kit, 250 purifications'**

Catalogue Number

28-9042-76



Component Number

9603B

Chemical name

Proteinase K

Other means of identification

Not available.

Product type

Liquid.

### Identified uses

Analytical chemistry.  
Laboratory chemicals  
Scientific research and development

### Supplier

Cytiva  
Amersham Place  
Little Chalfont  
Buckinghamshire  
HP7 9NA United Kingdom  
+44 1494 508000

Cytiva New Zealand  
Buddle Findlay, Level 18, Pricewaterhousecooper Tower,  
188 Quay Street,  
Auckland, Auckland, 1010  
New Zealand

Person who prepared the SDS :

sds\_author@cytiva.com

Emergency telephone number (with hours of operation)

0800 733 893  
(10am - 7pm)

## Section 2. Hazards identification

HSNO Classification

ACUTE TOXICITY (oral) - Category 4  
ACUTE TOXICITY (dermal) - Category 3  
SKIN CORROSION - Category 1C  
RESPIRATORY SENSITISATION - Category 1

Percentage of the mixture consisting of ingredient(s) of unknown acute oral toxicity: 100%  
Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 100%  
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 100%

This material is classified as hazardous according to criteria in the Hazardous Substances (Hazard Classification) Notice 2020.

### GHS label elements

Signal word

Danger

Hazard statements

Harmful if swallowed.  
Toxic in contact with skin.  
Causes severe skin burns and eye damage.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements

Prevention

Wear protective gloves, protective clothing and eye or face protection. Wear respiratory protection.  
Avoid breathing vapour. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.



**Response**

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

**Storage**

Store locked up.

**Disposal**

Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Symbol****Other hazards which do not result in classification**

None known.

### Section 3. Composition/information on ingredients

**Substance/mixture** Mixture

**Chemical name** Proteinase K

**Other means of identification** Not available.

Ingredient name	% (w/w)	Identifiers
Proteinase K	100	CAS: 39450-01-6 EC: 254-457-8
Guanidinium chloride	66.87	CAS: 50-01-1 EC: 200-002-3

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

**Inhalation**

Get medical attention immediately. Call a poison center or physician. 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. 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 case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.

**Ingestion**

Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician. 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.

**Skin contact**

Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Eye contact**

Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

**Inhalation**

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Ingestion**

Harmful if swallowed.

**Skin contact**

Causes severe burns. Toxic in contact with skin.

**Eye contact**

Causes serious eye damage.



**Over-exposure signs/symptoms**

<b>Inhalation</b>	Adverse symptoms may include the following: wheezing and breathing difficulties asthma
<b>Ingestion</b>	Adverse symptoms may include the following: stomach pains
<b>Skin</b>	Adverse symptoms may include the following: pain or irritation redness blistering may occur
<b>Eyes</b>	Adverse symptoms may include the following: pain watering redness

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

<b>Specific treatments</b>	Not available.
<b>Notes to physician</b>	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
<b>Protection of first-aiders</b>	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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

**Section 5. Firefighting measures****Extinguishing media**

<b>Suitable</b>	Use an extinguishing agent suitable for the surrounding fire.
<b>Not suitable</b>	None known.
<b>Specific hazards arising from the chemical</b>	In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous thermal decomposition products</b>	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds
<b>Hazchem code</b>	Not available.
<b>Special precautions for fire-fighters</b>	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.
<b>Special protective equipment for fire-fighters</b>	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**

<b>For non-emergency personnel</b>	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 spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
<b>For emergency responders</b>	If specialised 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".
<b>Environmental precautions</b>	Avoid dispersal of spilt 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 material for containment and cleaning up**

<b>Small spill</b>	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.
<b>Large spill</b>	Stop leak if without risk. Move containers from spill area. Approach the 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 spilt 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 breathe vapour or mist. Do not ingest. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

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, vapour 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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
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 and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	Liquid.
Colour	Colourless.
Odour	Faint odour. Irritant.
Odour threshold	Not available.
pH	7
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.
Vapour pressure	Not available.

	Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
		mm Hg	kPa	Method	mm Hg	kPa	Method
	water	17.5	2.3				
	Sorbitan monolaurate, ethoxylated	0	0				
Relative vapour density	Not available.						
Relative density	Not available.						

Solubility(ies)

	Media	Result
	cold water	Easily soluble
	hot water	Easily soluble
Solubility in water	Not available.	
Partition coefficient: n-octanol/ water	Not applicable.	
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.
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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.

Section 11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Ingestion	Harmful if swallowed.
Skin contact	Causes severe burns. Toxic in contact with skin.
Eye contact	Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	Adverse symptoms may include the following: wheezing and breathing difficulties asthma
Ingestion	Adverse symptoms may include the following: stomach pains
Skin contact	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Eye contact	Adverse symptoms may include the following: pain watering redness

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<b><u>Acute toxicity</u></b>	
<b>Product/ingredient name</b>	<b>Result</b>
Guanidinium chloride	<b>Rat - Oral - LD50</b> 475 mg/kg <u>Toxic effects:</u> Behavioral - Altered sleep time (including change in righting reflex) Behavioral - Excitement Gastrointestinal - Hypermotility, diarrhea
<b>Conclusion/Summary[Product]</b>	Not available.
<b>Ingredient name</b>	<b>Conclusion/Summary</b>
Proteinase K	To the best of our knowledge, the toxicological properties of this substance have not been thoroughly investigated.

**Skin corrosion/irritation**

Not available.
<b>Conclusion/Summary[Product]</b>

**Serious eye damage/eye irritation**

Not available.
<b>Conclusion/Summary[Product]</b>

**Respiratory corrosion/irritation**

Not available.
<b>Conclusion/Summary[Product]</b>

**Respiratory or skin sensitization**

Not available.
<b>Skin</b>
<b>Conclusion/Summary[Product]</b>
<b>Respiratory</b>
<b>Conclusion/Summary[Product]</b>

**Potential chronic health effects**

<b>General</b>	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
<b>Inhalation</b>	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
<b>Ingestion</b>	No known significant effects or critical hazards.
<b>Skin contact</b>	No known significant effects or critical hazards.
<b>Eye contact</b>	No known significant effects or critical hazards.

Carcinogenicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
Developmental effects	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.
Chronic toxicity	
Not available.	
Conclusion/Summary[Product]	Not available.

Carcinogenicity	
Not available.	
Conclusion/Summary[Product]	Not available.
Ingredient name	Conclusion/Summary
Proteinase K	To the best of our knowledge, the toxicological properties of this substance have not been thoroughly investigated.

Germ cell mutagenicity	
Not available.	
Conclusion/Summary[Product]	Not available.

Reproductive toxicity	
Not available.	
Conclusion/Summary[Product]	Not available.

Specific target organ toxicity (single exposure)	
Not available.	

Specific target organ toxicity (repeated exposure)	
Not available.	

Aspiration hazard	
Not available.	

Numerical measures of toxicity					
Acute toxicity estimates					
Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Proteinase K	517.5	326.8	N/A	N/A	N/A
Guanidinium chloride	475	300	N/A	N/A	N/A

Section 12. Ecological information

Ecotoxicity	No known significant effects or critical hazards.
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Aquatic and terrestrial toxicity	
Not available.	
Conclusion/Summary[Product]	Not available.

Persistence/degradability	
Not available.	
Conclusion/Summary[Product]	Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Guanidinium chloride	-	-	Not readily



**Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
guanidinium chloride	-1.7	-	Low

**Mobility in soil**

Soil/water partition coefficient	Not available.
Other adverse effects	No known significant effects or critical hazards.

**Section 13. Disposal considerations**

<b>Disposal methods</b>	The generation of waste should be avoided or minimised 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 spilt material and runoff and contact with soil, waterways, drains and sewers.
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**Section 14. Transport information**

Regulatory information	UN number	Proper shipping name	Classes	PG*
New Zealand Class	Not regulated.	-	-	-
		No.		
IATA Class	Not regulated.	-	-	-
		-		
		No.		
IMDG Class	Not regulated.	-	-	-
		No.		

PG\* : Packing group

<b>Special precautions for user</b>	<b>Transport within user's premises:</b> 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.
<b>Transport in bulk according to IMO instruments</b>	Not available.

**Section 15. Regulatory information**

<b>HSNO Approval Number</b>	HSR005292
<b>HSNO Group Standard</b>	Laboratory Chemicals and Reagent Kits
<b>HSNO Classification</b>	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 3 SKIN CORROSION - Category 1C RESPIRATORY SENSITISATION - Category 1

**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.

**Inventory list**

<b>New Zealand</b>	All components are listed or exempted.
<b>Australia</b>	Not determined.
<b>United States</b>	Not determined.





Canada inventory	Not determined.
China	All components are listed or exempted.
Japan	Japan inventory (CSCL): Not determined. Japan inventory (ISHL): Not determined.

Section 16. Other information

History

Date of printing	20 February 2026
Date of issue/ Date of revision	20 February 2026
Date of previous issue	7/22/2025
Version	7.02

Key to abbreviations	ADG = Australian Dangerous Goods ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road 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) RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail UN = United Nations
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References	Not available.
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 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.