

SAFETY DATA SHEET



DNA Isolation Kit, Part Number 5500-0051

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

1.1 Product identifier

Product name : DNA Isolation Kit, Part Number 5500-0051
Part No. (Kit) : 5500-0051
Part No. : Nucleic Acid Binding Buffer 5972-3631
High Salt Wash Buffer 5972-3633
Elution Buffer 400711-16
Proteinase K 5972-3635
Proteinase K Digestion Buffer 5972-3636

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

Identified uses	
<input checked="" type="checkbox"/> Analytical reagent.	
<input checked="" type="checkbox"/> Nucleic Acid Binding Buffer	25 ml
High Salt Wash Buffer	24 ml
Elution Buffer	12 ml
Proteinase K	2 x 0.5 ml
Proteinase K Digestion Buffer	2 x 5 ml

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000

e-mail address of person responsible for this SDS : pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation) : CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Nucleic Acid Binding Buffer Mixture
High Salt Wash Buffer Mixture
Elution Buffer Mixture
Proteinase K Mixture
Proteinase K Digestion Buffer Mixture

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

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SECTION 2: Hazards identification

Nucleic Acid Binding Buffer

H302 ACUTE TOXICITY (oral) - Category 4

High Salt Wash Buffer

H302 ACUTE TOXICITY (oral) - Category 4

H332 ACUTE TOXICITY (inhalation) - Category 4

H412 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3



Ingredients of unknown toxicity	:	High Salt Wash Buffer	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10%
			Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10%
			Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%
		Proteinase K	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%
Ingredients of unknown ecotoxicity	:	High Salt Wash Buffer	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10%
			Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10%
			Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 1.3%

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms

:	Nucleic Acid Binding Buffer	
	High Salt Wash Buffer	

Signal word

:	Nucleic Acid Binding Buffer	Warning
	High Salt Wash Buffer	Warning
	Elution Buffer	No signal word.
	Proteinase K	No signal word.
	Proteinase K Digestion Buffer	No signal word.

Hazard statements

:	Nucleic Acid Binding Buffer	H302 - Harmful if swallowed.
	High Salt Wash Buffer	H302 + H332 - Harmful if swallowed or if inhaled. H412 - Harmful to aquatic life with long lasting effects.
	Elution Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.

Precautionary statements

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SECTION 2: Hazards identification

Prevention	: <input checked="" type="checkbox"/> Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling. P271 - Use only outdoors or in a well-ventilated area. P273 - Avoid release to the environment. P261 - Avoid breathing vapour. Not applicable. Not applicable. Not applicable.
Response	: <input checked="" type="checkbox"/> Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. Not applicable. Not applicable. Not applicable.
Storage	: <input checked="" type="checkbox"/> Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Disposal	: <input checked="" type="checkbox"/> Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. Not applicable. Not applicable. Not applicable.
Hazardous ingredients	: <input checked="" type="checkbox"/> Nucleic Acid Binding Buffer High Salt Wash Buffer Proteinase K Digestion Buffer	- tetrahydrothiophene-1,1-dioxide - salts of thiocyanic acid Not applicable.
Supplemental label elements	: Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	Not applicable. Not applicable. Not applicable. Not applicable. Safety data sheet available on request.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
<u>Special packaging requirements</u>		

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SECTION 2: Hazards identification

Tactile warning of danger	: Nucleic Acid Binding Buffer	Not applicable.
	High Salt Wash Buffer	Not applicable.
	Elution Buffer	Not applicable.
	Proteinase K	Not applicable.
	Proteinase K Digestion Buffer	Not applicable.

2.3 Other hazards

Other hazards which do not result in classification	: Nucleic Acid Binding Buffer	None known.
	High Salt Wash Buffer	None known.
	Elution Buffer	None known.
	Proteinase K	None known.
	Proteinase K Digestion Buffer	None known.

SECTION 3: Composition/information on ingredients

3.1 Substances	: <input checked="" type="checkbox"/> Nucleic Acid Binding Buffer	Mixture
	High Salt Wash Buffer	Mixture
	Elution Buffer	Mixture
	Proteinase K	Mixture
	Proteinase K Digestion Buffer	Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
<input checked="" type="checkbox"/> Nucleic Acid Binding Buffer Tetrahydrothiophene-1,1-dioxide	EC: 204-783-1 CAS: 126-33-0 Index: 016-031-00-8	≥50 - ≤75	Acute Tox. 4, H302	[1]
Guanidinium thiocyanate	EC: 209-812-1 CAS: 593-84-0 Index: 615-004-00-3	≥10 - <25	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Aquatic Chronic 3, H412 EUH032	[1]
High Salt Wash Buffer Guanidinium thiocyanate	EC: 209-812-1 CAS: 593-84-0 Index: 615-004-00-3	≥25 - ≤50	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Aquatic Chronic 3, H412 EUH032	[1]
2-Amino-2-(hydroxymethyl) propane-1,3-diol hydrochloride	EC: 214-684-5 CAS: 1185-53-1	≤3	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
Proteinase K Glycerol	REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥25 - ≤50	Not classified.	[2]
Proteinase K Digestion Buffer Sodium chloride	EC: 231-598-3 CAS: 7647-14-5	≤3	Eye Irrit. 2, H319	[1]
Sodium dodecyl sulphate	EC: 205-788-1 CAS: 151-21-3	<2.5	Flam. Sol. 2, H228 Acute Tox. 4, H302 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335	[1]

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SECTION 3: Composition/information on ingredients

Polyoxyethylene octyl phenyl ether	CAS: 9002-93-1	≤0.3	Aquatic Acute 1, H400 (M=1) Aquatic Chronic 2, H411 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411 See Section 16 for the full text of the H statements declared above.	[1] [5]
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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.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact

- : Nucleic Acid Binding Buffer
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 if irritation occurs.
- : High Salt Wash Buffer
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 if irritation occurs.
- : Elution Buffer
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- : Proteinase K
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- : Proteinase K Digestion Buffer
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation

- : Nucleic Acid Binding Buffer
Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 adverse health effects persist or are severe. 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.
- : High Salt Wash Buffer
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-

SECTION 4: First aid measures

mouth resuscitation. Get medical attention if adverse health effects persist or are severe. 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 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.

Elution Buffer Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Proteinase K Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Proteinase K Digestion Buffer Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact

: Nucleic Acid Binding Buffer Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

High Salt Wash Buffer Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Elution Buffer Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Proteinase K Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Proteinase K Digestion Buffer Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion

: Nucleic Acid Binding Buffer Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 necessary, call a poison center or 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.

High Salt Wash Buffer Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an

SECTION 4: First aid measures

		open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	Elution Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	Proteinase K	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	Proteinase K Digestion Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Protection of first-aiders	: Nucleic Acid Binding Buffer	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	High Salt Wash Buffer	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.
	Elution Buffer	No action shall be taken involving any personal risk or without suitable training.
	Proteinase K	No action shall be taken involving any personal risk or without suitable training.
	Proteinase K Digestion Buffer	No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact	: Nucleic Acid Binding Buffer	No known significant effects or critical hazards.
	High Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
Inhalation	: Nucleic Acid Binding Buffer	No known significant effects or critical hazards.
	High Salt Wash Buffer	Harmful if inhaled.
	Elution Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
Skin contact	: Nucleic Acid Binding Buffer	No known significant effects or critical hazards.
	High Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.

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SECTION 4: First aid measures

Ingestion	: Nucleic Acid Binding Buffer	Harmful if swallowed.
	High Salt Wash Buffer	Harmful if swallowed.
	Elution Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: Nucleic Acid Binding Buffer	No specific data.
	High Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.

Inhalation	: Nucleic Acid Binding Buffer	No specific data.
	High Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.

Skin contact	: Nucleic Acid Binding Buffer	No specific data.
	High Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.

Ingestion	: Nucleic Acid Binding Buffer	No specific data.
	High Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	: Nucleic Acid Binding Buffer	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.
	High Salt Wash Buffer	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.
	Elution Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Proteinase K	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Proteinase K Digestion Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments	: Nucleic Acid Binding Buffer	No specific treatment.
	High Salt Wash Buffer	No specific treatment.
	Elution Buffer	No specific treatment.
	Proteinase K	No specific treatment.
	Proteinase K Digestion Buffer	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	: Nucleic Acid Binding Buffer	Use an extinguishing agent suitable for the surrounding fire.
	: High Salt Wash Buffer	Use an extinguishing agent suitable for the surrounding fire.
	: Elution Buffer	Use an extinguishing agent suitable for the surrounding fire.
	: Proteinase K	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: Proteinase K Digestion Buffer	Use an extinguishing agent suitable for the surrounding fire.
	: Nucleic Acid Binding Buffer	None known.
	: High Salt Wash Buffer	None known.
	: Elution Buffer	None known.
Hazardous combustion products	: Proteinase K	None known.
	: Proteinase K Digestion Buffer	None known.
	: Buffer	None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	: Nucleic Acid Binding Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	: High Salt Wash Buffer	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
	: Elution Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	: Proteinase K	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	: Proteinase K Digestion Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	: Nucleic Acid Binding Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides
	: High Salt Wash Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds
	: Elution Buffer	No specific data.
	: Proteinase K	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	: Proteinase K Digestion Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides

5.3 Advice for firefighters

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SECTION 5: Firefighting measures

Special precautions for fire-fighters	: Nucleic Acid Binding Buffer	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.
	High Salt Wash Buffer	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.
	Elution Buffer	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.
	Proteinase K	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.
	Proteinase K Digestion Buffer	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	: Nucleic Acid Binding Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	High Salt Wash Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	Elution Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	Proteinase K	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	Proteinase K Digestion Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: Nucleic Acid Binding Buffer	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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	High Salt Wash Buffer	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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put

SECTION 6: Accidental release measures

	Elution Buffer	on appropriate personal protective equipment. 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. Put on appropriate personal protective equipment.
	Proteinase K	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. Put on appropriate personal protective equipment.
	Proteinase K Digestion Buffer	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. Put on appropriate personal protective equipment.
For emergency responders	: Nucleic Acid Binding Buffer	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".
	High Salt Wash Buffer	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".
	Elution Buffer	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".
	Proteinase K	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".
	Proteinase K Digestion Buffer	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".
6.2 Environmental precautions	: Nucleic Acid Binding Buffer	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).
	High Salt Wash Buffer	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). Water polluting material. May be harmful to the environment if released in large quantities.
	Elution Buffer	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).
	Proteinase K	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).
	Proteinase K Digestion Buffer	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).

6.3 Methods and material for containment and cleaning up

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Methods for cleaning up	: Nucleic Acid Binding Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	High Salt Wash Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	Elution Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	Proteinase K	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	Proteinase K Digestion Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures	: Nucleic Acid Binding Buffer	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. 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.
	High Salt Wash Buffer	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. 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.
	Elution Buffer	Put on appropriate personal protective equipment (see Section 8).
	Proteinase K	Put on appropriate personal protective equipment (see Section 8).
	Proteinase K Digestion Buffer	Put on appropriate personal protective equipment (see Section 8).

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SECTION 7: Handling and storage

Advice on general occupational hygiene

Nucleic Acid Binding Buffer	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.
High Salt Wash Buffer	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.
Elution Buffer	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.
Proteinase K	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.
Proteinase K Digestion Buffer	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.

7.2 Conditions for safe storage, including any incompatibilities

Storage

Nucleic Acid Binding Buffer	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. 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.
High Salt Wash Buffer	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. 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.
Elution Buffer	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. 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

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SECTION 7: Handling and storage

Proteinase K	before handling or use. 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. 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.
Proteinase K Digestion Buffer	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. 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.

7.3 Specific end use(s)

Recommendations	: Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications.
Industrial sector specific solutions	: Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Proteinase K Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist

Recommended monitoring procedures	: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.
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SECTION 8: Exposure controls/personal protection

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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: safety glasses with side-shields.

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.

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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: Nucleic Acid Binding Buffer	Liquid.
	High Salt Wash Buffer	Liquid.
	Elution Buffer	Liquid.
	Proteinase K	Liquid.
	Proteinase K Digestion Buffer	Liquid.

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SECTION 9: Physical and chemical properties

Colour	: Nucleic Acid Binding Buffer	Not available.
	High Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
Odour	: Nucleic Acid Binding Buffer	Not available.
	High Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
Odour threshold	: Nucleic Acid Binding Buffer	Not available.
	High Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
pH	: Nucleic Acid Binding Buffer	Not available.
	High Salt Wash Buffer	6.4
	Elution Buffer	7.5
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
Melting point/freezing point	: Nucleic Acid Binding Buffer	Not available.
	High Salt Wash Buffer	Not available.
	Elution Buffer	0°C
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	0°C
Initial boiling point and boiling range	: Nucleic Acid Binding Buffer	Not available.
	High Salt Wash Buffer	Not available.
	Elution Buffer	100°C
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	100°C
Flash point	: Nucleic Acid Binding Buffer	Not available.
	High Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
Evaporation rate	: Nucleic Acid Binding Buffer	Not available.
	High Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.

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SECTION 9: Physical and chemical properties

Flammability (solid, gas)	:	Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Upper/lower flammability or explosive limits	:	Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	Not available. Not available. Not available. Not available. Not available.
Vapour pressure	:	Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	Not available. Not available. Not available. Not available. Not available.
Vapour density	:	Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	Not available. Not available. Not available. Not available. Not available.
Relative density	:	Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	Not available. Not available. Not available. Not available. Not available.
Solubility(ies)	:	Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	Not available. Partially soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Partially soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	:	Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	Not available. Not available. Not available. Not available. Not available.
Auto-ignition temperature	:	Nucleic Acid Binding Buffer High Salt Wash Buffer Elution Buffer Proteinase K Proteinase K Digestion Buffer	Not available. Not available. Not available. Not available. Not available.

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SECTION 9: Physical and chemical properties

Decomposition temperature	: Nucleic Acid Binding Buffer	Not available.
	High Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
Viscosity	: Nucleic Acid Binding Buffer	Not available.
	High Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
Explosive properties	: Nucleic Acid Binding Buffer	Not available.
	High Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
Oxidising properties	: Nucleic Acid Binding Buffer	Not available.
	High Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: Nucleic Acid Binding Buffer	No specific test data related to reactivity available for this product or its ingredients.
	High Salt Wash Buffer	No specific test data related to reactivity available for this product or its ingredients.
	Elution Buffer	No specific test data related to reactivity available for this product or its ingredients.
	Proteinase K	No specific test data related to reactivity available for this product or its ingredients.
	Proteinase K Digestion Buffer	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: Nucleic Acid Binding Buffer	The product is stable.
	High Salt Wash Buffer	The product is stable.
	Elution Buffer	The product is stable.
	Proteinase K	The product is stable.
	Proteinase K Digestion Buffer	The product is stable.

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SECTION 10: Stability and reactivity

10.3 Possibility of hazardous reactions	: Nucleic Acid Binding Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	High Salt Wash Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	Elution Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	Proteinase K	Under normal conditions of storage and use, hazardous reactions will not occur.
	Proteinase K Digestion Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: Nucleic Acid Binding Buffer	No specific data.
	High Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.
10.5 Incompatible materials	: Nucleic Acid Binding Buffer	May react or be incompatible with oxidising materials.
	High Salt Wash Buffer	May react or be incompatible with oxidising materials.
	Elution Buffer	May react or be incompatible with oxidising materials.
	Proteinase K	May react or be incompatible with oxidising materials.
	Proteinase K Digestion Buffer	May react or be incompatible with oxidising materials.
10.6 Hazardous decomposition products	: Nucleic Acid Binding Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	High Salt Wash Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Elution Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Proteinase K	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Proteinase K Digestion Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Nucleic Acid Binding Buffer Tetrahydrothiophene-1, 1-dioxide	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat	2006 mg/kg	-
Proteinase K Digestion Buffer Sodium chloride Sodium dodecyl sulphate Polyoxyethylene octyl phenyl ether	LD50 Oral	Rat	3000 mg/kg	-
	LD50 Oral	Rat	1288 mg/kg	-
	LD50 Oral	Rat	1800 mg/kg	-

Acute toxicity estimates

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SECTION 11: Toxicological information

Route	ATE value
Nucleic Acid Binding Buffer Oral Dermal Inhalation (dusts and mists)	666.7 mg/kg 6875 mg/kg 9.375 mg/l
High Salt Wash Buffer Oral Dermal Inhalation (dusts and mists)	1282.1 mg/kg 2820.5 mg/kg 3.846 mg/l
Proteinase K Digestion Buffer Oral Inhalation (dusts and mists)	128800 mg/kg 150 mg/l

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Nucleic Acid Binding Buffer Tetrahydrothiophene-1,1-dioxide	Eyes - Mild irritant	Rabbit	-	253 milligrams	-
Proteinase K Digestion Buffer Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
Sodium dodecyl sulphate	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	250 Micrograms	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Guinea pig	-	24 hours 25 milligrams	-
	Skin - Moderate irritant	Mouse	-	24 hours 25 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 50 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 25 milligrams	-
Polyoxyethylene octyl phenyl ether	Eyes - Moderate irritant	Rabbit	-	24 hours 10 microliters	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 microliters	-

Sensitiser

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
High Salt Wash Buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation
Proteinase K Digestion Buffer Sodium dodecyl sulphate	Category 3	Not applicable.	Respiratory tract irritation

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SECTION 11: Toxicological information

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure

: Nucleic Acid Binding Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
High Salt Wash Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
Elution Buffer	Not available.
Proteinase K	Routes of entry anticipated: Oral, Dermal, Inhalation.
Proteinase K Digestion Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation	: Nucleic Acid Binding Buffer	No known significant effects or critical hazards.
	High Salt Wash Buffer	Harmful if inhaled.
	Elution Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
Ingestion	: Nucleic Acid Binding Buffer	Harmful if swallowed.
	High Salt Wash Buffer	Harmful if swallowed.
	Elution Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
Skin contact	: Nucleic Acid Binding Buffer	No known significant effects or critical hazards.
	High Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
Eye contact	: Nucleic Acid Binding Buffer	No known significant effects or critical hazards.
	High Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	: Nucleic Acid Binding Buffer	No specific data.
	High Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.
Ingestion	: Nucleic Acid Binding Buffer	No specific data.
	High Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.

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SECTION 11: Toxicological information

Skin contact	: Nucleic Acid Binding Buffer	No specific data.
	High Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.
Eye contact	: Nucleic Acid Binding Buffer	No specific data.
	High Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.

Delayed and immediate effects as well as 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

General	: Nucleic Acid Binding Buffer	No known significant effects or critical hazards.
	High Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
Carcinogenicity	: Nucleic Acid Binding Buffer	No known significant effects or critical hazards.
	High Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
Mutagenicity	: Nucleic Acid Binding Buffer	No known significant effects or critical hazards.
	High Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
Teratogenicity	: Nucleic Acid Binding Buffer	No known significant effects or critical hazards.
	High Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.

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SECTION 11: Toxicological information

Developmental effects	: Nucleic Acid Binding Buffer	No known significant effects or critical hazards.
	High Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
Fertility effects	: Nucleic Acid Binding Buffer	No known significant effects or critical hazards.
	High Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Nucleic Acid Binding Buffer Tetrahydrothiophene-1, 1-dioxide	Acute EC50 500 mg/l Fresh water	Algae	72 hours
	Acute EC50 52 mg/l Marine water	Crustaceans - Acartia tonsa	48 hours
	Acute EC50 40 mg/l	Daphnia	48 hours
	Acute EC50 40 mg/l Fresh water	Daphnia - Daphnia magna - Young	48 hours
	Acute LC50 >100 mg/l Fresh water	Fish	96 hours
	Acute NOEC 171 mg/l Fresh water	Algae	72 hours
	Acute NOEC 171 mg/l Fresh water	Daphnia	48 hours
Proteinase K Digestion Buffer Sodium chloride	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute EC50 402600 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
Sodium dodecyl sulphate	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks
	Acute EC50 1200 µg/l Marine water	Algae - Skeletonema costatum	96 hours
	Acute LC50 900 µg/l Marine water	Crustaceans - Artemia salina - Adult	48 hours
	Acute LC50 1400 µg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours
	Acute LC50 590 µg/l Fresh water	Fish - Cirrhinus mrigala - Larvae	96 hours
	Chronic NOEC 1.25 mg/l Marine water	Algae - Ulva fasciata - Zoea	96 hours
Polyoxyethylene octyl phenyl ether	Chronic NOEC 1 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	21 days
	Chronic NOEC 3.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days
	Chronic NOEC >1357 µg/l Fresh water	Fish - Pimephales promelas	42 days
	Acute LC50 5.85 mg/l Fresh water	Crustaceans - Ceriodaphnia rigaudi - Neonate	48 hours

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SECTION 12: Ecological information

	Acute LC50 11.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4500 µg/l Fresh water	Fish - Pimephales promelas	96 hours

12.2 Persistence and degradability

Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Proteinase K Digestion Buffer Polyoxyethylene octyl phenyl ether	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Nucleic Acid Binding Buffer Tetrahydrothiophene-1, 1-dioxide	0	<13	low
Proteinase K Digestion Buffer Sodium dodecyl sulphate Polyoxyethylene octyl phenyl ether	-2.03 4.86	- -	low high

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : 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.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

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SECTION 13: Disposal considerations

Special precautions : 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

ADR/RID / IMDG / IATA : Not regulated.

14.6 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.

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

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture


EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

Ingredient name	Intrinsic property	Status	Reference number	Date of revision
 Proteinase K Digestion Buffer Polyoxyethylene octyl phenyl ether	Substance of equivalent concern for environment	Recommended	ED/169/2012	2/10/2014

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles :
Nucleic Acid Binding Buffer Not applicable.
High Salt Wash Buffer Not applicable.
Elution Buffer Not applicable.
Proteinase K Not applicable.
Proteinase K Digestion Buffer Not applicable.

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Listed

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Date of issue/Date of revision : 23/01/2018

25/28

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SECTION 15: Regulatory information

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

Australia	: All components are listed or exempted.
Canada	: All components are listed or exempted.
China	: All components are listed or exempted.
Europe	: All components are listed or exempted.
Japan	: <input checked="" type="checkbox"/> Japan inventory (ENCS) : All components are listed or exempted. <input checked="" type="checkbox"/> Japan inventory (ISHL) : All components are listed or exempted.
Malaysia	: Not determined.
New Zealand	: All components are listed or exempted.
Philippines	: All components are listed or exempted.
Republic of Korea	: Not determined.
Taiwan	: All components are listed or exempted.
Thailand	: <input checked="" type="checkbox"/> Not determined.
Turkey	: Not determined.
United States	: All components are listed or exempted.
Viet Nam	: <input checked="" type="checkbox"/> Not determined.

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments might still be required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Nucleic Acid Binding Buffer Acute Tox. 4, H302	Calculation method
High Salt Wash Buffer Acute Tox. 4, H302 Acute Tox. 4, H332 Aquatic Chronic 3, H412	Calculation method Calculation method Calculation method

Full text of abbreviated H statements

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<p>Nucleic Acid Binding Buffer H302 H312 H332 H412</p> <p>High Salt Wash Buffer H302 H312 H315 H319 H332 H335 H412</p> <p>Proteinase K Digestion Buffer H228 H302 H315 H318 H319 H332 H335 H400 H411</p>	<p>Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled. Harmful to aquatic life with long lasting effects.</p> <p>Harmful if swallowed. Harmful in contact with skin. Causes skin irritation. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation. Harmful to aquatic life with long lasting effects.</p> <p>Flammable solid. Harmful if swallowed. Causes skin irritation. Causes serious eye damage. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.</p>
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[Full text of classifications \[CLP/GHS\]](#)

<p>Nucleic Acid Binding Buffer Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Aquatic Chronic 3, H412 EUH032</p> <p>High Salt Wash Buffer Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Aquatic Chronic 3, H412 EUH032 Eye Irrit. 2, H319 Skin Irrit. 2, H315 STOT SE 3, H335</p> <p>Proteinase K Digestion Buffer Acute Tox. 4, H302 Acute Tox. 4, H332 Aquatic Acute 1, H400 Aquatic Chronic 2, H411 Eye Dam. 1, H318 Eye Irrit. 2, H319 Flam. Sol. 2, H228 Skin Irrit. 2, H315 STOT SE 3, H335</p>	<p>ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3 Contact with acids liberates very toxic gas.</p> <p>ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3 Contact with acids liberates very toxic gas. SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3</p> <p>ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 FLAMMABLE SOLIDS - Category 2 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3</p>
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Version : 2

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