

SAFETY DATA SHEET



RecoverEase DNA Isolation Kit, Part Number 720202

Section 1. Identification

Product identifier	: RecoverEase DNA Isolation Kit, Part Number 720202		
Part No. (Chemical Kit)	: 720202		
Part No.	: RecoverEase RNase-It Ribonuclease Cocktail	720203-31	
	: RecoverEase Proteinase K Solution	720203-32	
	: RecoverEase Lysis Buffer	720203-61	
	: RecoverEase Digestion Buffer	720203-62	

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

Analytical reagent.

RecoverEase RNase-It Ribonuclease Cocktail	2 x 0.05 ml
RecoverEase Proteinase K Solution	2 x (2 mg/ml 1.5 ml)
RecoverEase Lysis Buffer	2 x 150 ml
RecoverEase Digestion Buffer	2 x 1.5 ml

Supplier/Manufacturer : Agilent Technologies Australia Pty Ltd
679 Springvale Road
Mulgrave
Victoria 3170, Australia
1800 802 402

Emergency telephone number (with hours of operation) : CHEMTREC®: +(61)-290372994

Section 2. Hazard(s) identification

Classification of the substance or mixture

RecoverEase Proteinase K Solution
H319

SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A

RecoverEase Lysis Buffer
H319

SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A

RecoverEase Lysis 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: 10 - 30%

GHS label elements

Hazard pictograms

: RecoverEase Proteinase K Solution



RecoverEase Lysis Buffer



Section 2. Hazard(s) identification

Signal word	: RecoverEase RNace-It Ribonuclease Cocktail RecoverEase Proteinase K Solution RecoverEase Lysis Buffer RecoverEase Digestion Buffer	No signal word. WARNING WARNING No signal word.
Hazard statements	: RecoverEase RNace-It Ribonuclease Cocktail RecoverEase Proteinase K Solution RecoverEase Lysis Buffer RecoverEase Digestion Buffer	No known significant effects or critical hazards. H319 - Causes serious eye irritation. H319 - Causes serious eye irritation. No known significant effects or critical hazards.
<u>Precautionary statements</u>		
Prevention	: RecoverEase RNace-It Ribonuclease Cocktail RecoverEase Proteinase K Solution RecoverEase Lysis Buffer RecoverEase Digestion Buffer	Not applicable. P280 - Wear eye or face protection. P264 - Wash hands thoroughly after handling. P280 - Wear eye or face protection. P264 - Wash hands thoroughly after handling. Not applicable.
Response	: RecoverEase RNace-It Ribonuclease Cocktail RecoverEase Proteinase K Solution RecoverEase Lysis Buffer RecoverEase Digestion Buffer	Not applicable. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention. Not applicable.
Storage	: RecoverEase RNace-It Ribonuclease Cocktail RecoverEase Proteinase K Solution RecoverEase Lysis Buffer RecoverEase Digestion Buffer	Not applicable. Not applicable. Not applicable. Not applicable.
Disposal	: RecoverEase RNace-It Ribonuclease Cocktail RecoverEase Proteinase K Solution RecoverEase Lysis Buffer RecoverEase Digestion Buffer	Not applicable. Not applicable. Not applicable. Not applicable.
Supplemental label elements	: RecoverEase RNace-It Ribonuclease Cocktail RecoverEase Proteinase K Solution RecoverEase Lysis Buffer RecoverEase Digestion Buffer	Not applicable. Not applicable. Not applicable. Not applicable.

Section 2. Hazard(s) identification

Other hazards which do not result in classification	: RecoverEase RNase-It Ribonuclease Cocktail	None known.
	RecoverEase Proteinase K Solution	None known.
	RecoverEase Lysis Buffer	None known.
	RecoverEase Digestion Buffer	None known.

Section 3. Composition and ingredient information

Substance/mixture	: RecoverEase RNase-It Ribonuclease Cocktail	Mixture
	RecoverEase Proteinase K Solution	Mixture
	RecoverEase Lysis Buffer	Mixture
	RecoverEase Digestion Buffer	Mixture

CAS number/other identifiers

Ingredient name	% (w/w)	CAS number
RecoverEase Proteinase K Solution Sodium dodecyl sulphate	≤2.9	151-21-3
RecoverEase Lysis Buffer Sucrose	≥10 - ≤30	57-50-1
Polyoxyethylene octyl phenyl ether	<2.5	9002-93-1

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

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	: RecoverEase RNase-It Ribonuclease Cocktail	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.
	RecoverEase Proteinase K Solution	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.
	RecoverEase Lysis 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.
	RecoverEase 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	: RecoverEase RNase-It Ribonuclease Cocktail	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	RecoverEase Proteinase K Solution	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.

Section 4. First aid measures

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.

RecoverEase Lysis 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.

RecoverEase 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

: RecoverEase RNase-It Ribonuclease Cocktail

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

RecoverEase Proteinase K Solution

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.

RecoverEase Lysis 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.

RecoverEase Digestion Buffer

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

Ingestion

: RecoverEase RNase-It Ribonuclease Cocktail

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.

RecoverEase Proteinase K Solution

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 adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

RecoverEase Lysis 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

Section 4. First aid measures

RecoverEase Digestion Buffer

conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: RecoverEase RNace-It Ribonuclease Cocktail	No known significant effects or critical hazards.
	RecoverEase Proteinase K Solution	Causes serious eye irritation.
	RecoverEase Lysis Buffer	Causes serious eye irritation.
	RecoverEase Digestion Buffer	No known significant effects or critical hazards.
Inhalation	: RecoverEase RNace-It Ribonuclease Cocktail	No known significant effects or critical hazards.
	RecoverEase Proteinase K Solution	No known significant effects or critical hazards.
	RecoverEase Lysis Buffer	No known significant effects or critical hazards.
	RecoverEase Digestion Buffer	No known significant effects or critical hazards.
Skin contact	: RecoverEase RNace-It Ribonuclease Cocktail	No known significant effects or critical hazards.
	RecoverEase Proteinase K Solution	No known significant effects or critical hazards.
	RecoverEase Lysis Buffer	No known significant effects or critical hazards.
	RecoverEase Digestion Buffer	No known significant effects or critical hazards.
Ingestion	: RecoverEase RNace-It Ribonuclease Cocktail	No known significant effects or critical hazards.
	RecoverEase Proteinase K Solution	No known significant effects or critical hazards.
	RecoverEase Lysis Buffer	No known significant effects or critical hazards.
	RecoverEase Digestion Buffer	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: RecoverEase RNace-It Ribonuclease Cocktail	No specific data.
	RecoverEase Proteinase K Solution	Adverse symptoms may include the following: pain or irritation watering redness
	RecoverEase Lysis Buffer	Adverse symptoms may include the following: pain or irritation watering

Section 4. First aid measures

		redness
	RecoverEase Digestion Buffer	No specific data.
Inhalation	: RecoverEase RNace-It Ribonuclease Cocktail	No specific data.
	RecoverEase Proteinase K Solution	No specific data.
	RecoverEase Lysis Buffer	No specific data.
	RecoverEase Digestion Buffer	No specific data.
Skin contact	: RecoverEase RNace-It Ribonuclease Cocktail	No specific data.
	RecoverEase Proteinase K Solution	No specific data.
	RecoverEase Lysis Buffer	No specific data.
	RecoverEase Digestion Buffer	No specific data.
Ingestion	: RecoverEase RNace-It Ribonuclease Cocktail	No specific data.
	RecoverEase Proteinase K Solution	No specific data.
	RecoverEase Lysis Buffer	No specific data.
	RecoverEase Digestion Buffer	No specific data.

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

Notes to physician	: RecoverEase RNace-It Ribonuclease Cocktail	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	RecoverEase Proteinase K Solution	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.
	RecoverEase Lysis Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	RecoverEase Digestion Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: RecoverEase RNace-It Ribonuclease Cocktail	No specific treatment.
	RecoverEase Proteinase K Solution	No specific treatment.
	RecoverEase Lysis Buffer	No specific treatment.
	RecoverEase Digestion Buffer	No specific treatment.
Protection of first-aiders	: RecoverEase RNace-It Ribonuclease Cocktail	No action shall be taken involving any personal risk or without suitable training.
	RecoverEase Proteinase K Solution	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.
	RecoverEase Lysis 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.
	RecoverEase Digestion Buffer	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media	: RecoverEase RNace-It Ribonuclease Cocktail	Use an extinguishing agent suitable for the surrounding fire.
	RecoverEase Proteinase K Solution	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	RecoverEase Lysis Buffer	Use an extinguishing agent suitable for the surrounding fire.
	RecoverEase Digestion Buffer	Use an extinguishing agent suitable for the surrounding fire.
	: RecoverEase RNace-It Ribonuclease Cocktail	None known.
	RecoverEase Proteinase K Solution	None known.
Specific hazards arising from the chemical	RecoverEase Lysis Buffer	None known.
	RecoverEase Digestion Buffer	None known.
	: RecoverEase RNace-It Ribonuclease Cocktail	In a fire or if heated, a pressure increase will occur and the container may burst.
	RecoverEase Proteinase K Solution	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	RecoverEase Lysis Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	RecoverEase Digestion Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	: RecoverEase RNace-It Ribonuclease Cocktail	No specific data.
	RecoverEase Proteinase K Solution	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides metal oxide/oxides
Special protective actions for fire-fighters	RecoverEase Lysis Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	RecoverEase Digestion Buffer	No specific data.
	: RecoverEase RNace-It Ribonuclease Cocktail	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 actions for fire-fighters	RecoverEase Proteinase K Solution	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.
	RecoverEase Lysis 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.
	RecoverEase 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.

Section 5. Firefighting measures

Special protective equipment for fire-fighters	: RecoverEase RNace-It Ribonuclease Cocktail	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	RecoverEase Proteinase K Solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	RecoverEase Lysis Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	RecoverEase 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.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: RecoverEase RNace-It Ribonuclease Cocktail	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.
	RecoverEase Proteinase K Solution	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.
	RecoverEase Lysis 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.
	RecoverEase 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	: RecoverEase RNace-It Ribonuclease Cocktail	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".
	RecoverEase Proteinase K Solution	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".
	RecoverEase Lysis 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".
	RecoverEase 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

Section 6. Accidental release measures

information in "For non-emergency personnel".

Environmental precautions	: RecoverEase RNace-It Ribonuclease Cocktail	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).
	RecoverEase Proteinase K Solution	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).
	RecoverEase Lysis 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).
	RecoverEase 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).

Methods and material for containment and cleaning up

Methods for cleaning up	: RecoverEase RNace-It Ribonuclease Cocktail	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.
	RecoverEase Proteinase K Solution	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.
	RecoverEase Lysis 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.
	RecoverEase 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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	: RecoverEase RNace-It Ribonuclease Cocktail RecoverEase Proteinase K Solution	Put on appropriate personal protective equipment (see Section 8). 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.
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Section 7. Handling and storage

	RecoverEase Lysis 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.
Advice on general occupational hygiene	RecoverEase Digestion Buffer	Put on appropriate personal protective equipment (see Section 8).
	: RecoverEase RNace-It Ribonuclease Cocktail	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.
	RecoverEase Proteinase K Solution	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.
	RecoverEase Lysis 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.
	RecoverEase 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.
Conditions for safe storage, including any incompatibilities	: RecoverEase RNace-It Ribonuclease Cocktail	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.
	RecoverEase Proteinase K Solution	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.
	RecoverEase Lysis Buffer	Store in accordance with local regulations. Store in original container protected from direct sunlight in a

Section 7. Handling and storage

RecoverEase Digestion Buffer

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. 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.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

<u>Ingredient name</u>	<u>Exposure limits</u>
<input checked="" type="checkbox"/> RecoverEase Lysis Buffer Sucrose	Safe Work Australia (Australia, 1/2014). TWA: 10 mg/m ³ 8 hours.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Section 8. Exposure controls and personal protection

- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state	: RecoverEase RNace-It Ribonuclease Cocktail	Liquid.
	RecoverEase Proteinase K Solution	Liquid.
	RecoverEase Lysis Buffer	Liquid.
	RecoverEase Digestion Buffer	Liquid.
Colour	: RecoverEase RNace-It Ribonuclease Cocktail	Not available.
	RecoverEase Proteinase K Solution	Not available.
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	Not available.
Odour	: RecoverEase RNace-It Ribonuclease Cocktail	Not available.
	RecoverEase Proteinase K Solution	Not available.
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	Not available.
Odour threshold	: RecoverEase RNace-It Ribonuclease Cocktail	Not available.
	RecoverEase Proteinase K Solution	Not available.
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	Not available.
pH	: RecoverEase RNace-It Ribonuclease Cocktail	7.5
	RecoverEase Proteinase K Solution	Not available.
	RecoverEase Lysis Buffer	8.3
	RecoverEase Digestion Buffer	8
Melting point	: RecoverEase RNace-It Ribonuclease Cocktail	0°C (32°F)
	RecoverEase Proteinase K Solution	0°C (32°F)
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	0°C (32°F)

Section 9. Physical and chemical properties

Boiling point	: RecoverEase RNace-It Ribonuclease Cocktail	100°C (212°F)
	RecoverEase Proteinase K Solution	100°C (212°F)
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	100°C (212°F)
Flash point	: RecoverEase RNace-It Ribonuclease Cocktail	Not available.
	RecoverEase Proteinase K Solution	Not available.
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	Not available.
Evaporation rate	: RecoverEase RNace-It Ribonuclease Cocktail	Not available.
	RecoverEase Proteinase K Solution	Not available.
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	Not available.
Flammability (solid, gas)	: RecoverEase RNace-It Ribonuclease Cocktail	Not applicable.
	RecoverEase Proteinase K Solution	Not applicable.
	RecoverEase Lysis Buffer	Not applicable.
	RecoverEase Digestion Buffer	Not applicable.
Lower and upper explosive (flammable) limits	: RecoverEase RNace-It Ribonuclease Cocktail	Not available.
	RecoverEase Proteinase K Solution	Not available.
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	Not available.
Vapour pressure	: RecoverEase RNace-It Ribonuclease Cocktail	Not available.
	RecoverEase Proteinase K Solution	Not available.
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	Not available.
Vapour density	: RecoverEase RNace-It Ribonuclease Cocktail	Not available.
	RecoverEase Proteinase K Solution	Not available.
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	Not available.
Relative density	: RecoverEase RNace-It Ribonuclease Cocktail	Not available.
	RecoverEase Proteinase K Solution	Not available.
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	Not available.

Section 9. Physical and chemical properties

Solubility	: RecoverEase RNace-It Ribonuclease Cocktail	Easily soluble in the following materials: cold water and hot water.
	RecoverEase Proteinase K Solution	Easily soluble in the following materials: cold water and hot water.
	RecoverEase Lysis Buffer	Easily soluble in the following materials: cold water and hot water.
	RecoverEase Digestion Buffer	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: RecoverEase RNace-It Ribonuclease Cocktail	Not available.
	RecoverEase Proteinase K Solution	Not available.
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	Not available.
Auto-ignition temperature	: RecoverEase RNace-It Ribonuclease Cocktail	Not available.
	RecoverEase Proteinase K Solution	Not available.
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	Not available.
Decomposition temperature	: RecoverEase RNace-It Ribonuclease Cocktail	Not available.
	RecoverEase Proteinase K Solution	Not available.
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	Not available.
Viscosity	: RecoverEase RNace-It Ribonuclease Cocktail	Not available.
	RecoverEase Proteinase K Solution	Not available.
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	Not available.

Section 10. Stability and reactivity

Reactivity	: RecoverEase RNace-It Ribonuclease Cocktail	No specific test data related to reactivity available for this product or its ingredients.
	RecoverEase Proteinase K Solution	No specific test data related to reactivity available for this product or its ingredients.
	RecoverEase Lysis Buffer	No specific test data related to reactivity available for this product or its ingredients.
	RecoverEase Digestion Buffer	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: RecoverEase RNace-It Ribonuclease Cocktail	The product is stable.
	RecoverEase Proteinase K Solution	The product is stable.
	RecoverEase Lysis Buffer	The product is stable.
	RecoverEase Digestion Buffer	The product is stable.

Section 10. Stability and reactivity

Possibility of hazardous reactions	: RecoverEase RNace-It Ribonuclease Cocktail	Under normal conditions of storage and use, hazardous reactions will not occur.
	RecoverEase Proteinase K Solution	Under normal conditions of storage and use, hazardous reactions will not occur.
	RecoverEase Lysis Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	RecoverEase Digestion Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: RecoverEase RNace-It Ribonuclease Cocktail	No specific data.
	RecoverEase Proteinase K Solution	No specific data.
	RecoverEase Lysis Buffer	No specific data.
	RecoverEase Digestion Buffer	No specific data.
Incompatible materials	: RecoverEase RNace-It Ribonuclease Cocktail	May react or be incompatible with oxidising materials.
	RecoverEase Proteinase K Solution	May react or be incompatible with oxidising materials.
	RecoverEase Lysis Buffer	May react or be incompatible with oxidising materials.
	RecoverEase Digestion Buffer	May react or be incompatible with oxidising materials.
Hazardous decomposition products	: RecoverEase RNace-It Ribonuclease Cocktail	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	RecoverEase Proteinase K Solution	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	RecoverEase Lysis Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	RecoverEase Digestion Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
RecoverEase Proteinase K Solution Sodium dodecyl sulphate	LD50 Dermal	Rabbit	580 mg/kg	-
	LD50 Oral	Rat	1288 mg/kg	-
RecoverEase Lysis Buffer Sucrose	LD50 Oral	Rat	29700 mg/kg	-
	LD50 Oral	Rat	1800 mg/kg	-
Polyoxyethylene octyl phenyl ether				

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
RecoverEase Proteinase K Solution Sodium dodecyl sulphate	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	-
RecoverEase Lysis Buffer Polyoxyethylene octyl phenyl ether	Skin - Moderate irritant	Rabbit	-	24 hours 25 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 10 microliters	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 microliters	-

Sensitisation

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
RecoverEase Proteinase K Solution Sodium dodecyl sulphate	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure	RecoverEase RNace-It	Routes of entry anticipated: Oral, Dermal, Inhalation.
	Ribonuclease Cocktail	Routes of entry anticipated: Oral, Dermal, Inhalation.
	RecoverEase Proteinase K Solution	Routes of entry anticipated: Oral, Dermal, Inhalation.
	RecoverEase Lysis Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
	RecoverEase Digestion Buffer	Not available.

Potential acute health effects

Section 11. Toxicological information

Eye contact	: RecoverEase RNace-It Ribonuclease Cocktail	No known significant effects or critical hazards.
	RecoverEase Proteinase K Solution	Causes serious eye irritation.
	RecoverEase Lysis Buffer	Causes serious eye irritation.
	RecoverEase Digestion Buffer	No known significant effects or critical hazards.
Inhalation	: RecoverEase RNace-It Ribonuclease Cocktail	No known significant effects or critical hazards.
	RecoverEase Proteinase K Solution	No known significant effects or critical hazards.
	RecoverEase Lysis Buffer	No known significant effects or critical hazards.
	RecoverEase Digestion Buffer	No known significant effects or critical hazards.
Skin contact	: RecoverEase RNace-It Ribonuclease Cocktail	No known significant effects or critical hazards.
	RecoverEase Proteinase K Solution	No known significant effects or critical hazards.
	RecoverEase Lysis Buffer	No known significant effects or critical hazards.
	RecoverEase Digestion Buffer	No known significant effects or critical hazards.
Ingestion	: RecoverEase RNace-It Ribonuclease Cocktail	No known significant effects or critical hazards.
	RecoverEase Proteinase K Solution	No known significant effects or critical hazards.
	RecoverEase Lysis Buffer	No known significant effects or critical hazards.
	RecoverEase Digestion Buffer	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: RecoverEase RNace-It Ribonuclease Cocktail	No specific data.
	RecoverEase Proteinase K Solution	Adverse symptoms may include the following: pain or irritation watering redness
	RecoverEase Lysis Buffer	Adverse symptoms may include the following: pain or irritation watering redness
	RecoverEase Digestion Buffer	No specific data.
Inhalation	: RecoverEase RNace-It Ribonuclease Cocktail	No specific data.
	RecoverEase Proteinase K Solution	No specific data.
	RecoverEase Lysis Buffer	No specific data.
	RecoverEase Digestion Buffer	No specific data.
Skin contact	: RecoverEase RNace-It Ribonuclease Cocktail	No specific data.
	RecoverEase Proteinase K Solution	No specific data.
	RecoverEase Lysis Buffer	No specific data.
	RecoverEase Digestion Buffer	No specific data.

Section 11. Toxicological information

Ingestion	: RecoverEase RNace-It Ribonuclease Cocktail	No specific data.
	RecoverEase Proteinase K Solution	No specific data.
	RecoverEase Lysis Buffer	No specific data.
	RecoverEase 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

Not available.

General	: RecoverEase RNace-It Ribonuclease Cocktail	No known significant effects or critical hazards.
	RecoverEase Proteinase K Solution	No known significant effects or critical hazards.
	RecoverEase Lysis Buffer	No known significant effects or critical hazards.
	RecoverEase Digestion Buffer	No known significant effects or critical hazards.
Carcinogenicity	: RecoverEase RNace-It Ribonuclease Cocktail	No known significant effects or critical hazards.
	RecoverEase Proteinase K Solution	No known significant effects or critical hazards.
	RecoverEase Lysis Buffer	No known significant effects or critical hazards.
	RecoverEase Digestion Buffer	No known significant effects or critical hazards.
Mutagenicity	: RecoverEase RNace-It Ribonuclease Cocktail	No known significant effects or critical hazards.
	RecoverEase Proteinase K Solution	No known significant effects or critical hazards.
	RecoverEase Lysis Buffer	No known significant effects or critical hazards.
	RecoverEase Digestion Buffer	No known significant effects or critical hazards.
Teratogenicity	: RecoverEase RNace-It Ribonuclease Cocktail	No known significant effects or critical hazards.
	RecoverEase Proteinase K Solution	No known significant effects or critical hazards.
	RecoverEase Lysis Buffer	No known significant effects or critical hazards.
	RecoverEase Digestion Buffer	No known significant effects or critical hazards.
Developmental effects	: RecoverEase RNace-It Ribonuclease Cocktail	No known significant effects or critical hazards.
	RecoverEase Proteinase K Solution	No known significant effects or critical hazards.
	RecoverEase Lysis Buffer	No known significant effects or critical hazards.
	RecoverEase Digestion Buffer	No known significant effects or critical hazards.

Section 11. Toxicological information

Fertility effects	: RecoverEase RNase-It Ribonuclease Cocktail	No known significant effects or critical hazards.
	RecoverEase Proteinase K Solution	No known significant effects or critical hazards.
	RecoverEase Lysis Buffer	No known significant effects or critical hazards.
	RecoverEase Digestion Buffer	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
RecoverEase Proteinase K Solution Oral Dermal	64400 mg/kg 29000 mg/kg
RecoverEase Lysis Buffer Oral	180000 mg/kg

Other information	: RecoverEase RNase-It Ribonuclease Cocktail	Adverse symptoms may include the following: Respiratory sensitisation
	RecoverEase Proteinase K Solution	Not available.
	RecoverEase Lysis Buffer	Not available.
	RecoverEase Digestion Buffer	Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
RecoverEase Proteinase K Solution Sodium dodecyl sulphate	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
	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
RecoverEase Lysis Buffer Polyoxyethylene octyl phenyl ether	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
	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

Persistence and degradability

Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
RecoverEase Proteinase K Solution Sodium dodecyl sulphate	-	-	Readily
RecoverEase Lysis Buffer Polyoxyethylene octyl phenyl ether	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
RecoverEase Proteinase K Solution Sodium dodecyl sulphate	-2.03	-	low
RecoverEase Lysis Buffer Sucrose	-3.7	-	low
Polyoxyethylene octyl phenyl ether	4.86	-	high

Mobility in soil

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

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

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or 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.

Section 14. Transport information

ADG / IMDG / IATA : Not regulated as Dangerous Goods according to the ADG Code .

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

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

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

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	: Not determined.
Canada	: Not determined.
China	: All components are listed or exempted.
Europe	: All components are listed or exempted.
Japan	: Japan inventory (ENCS) : Not determined. Japan inventory (ISHL) : Not determined.
Malaysia	: Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: All components are listed or exempted.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: Not determined.
Viet Nam	: Not determined.

Section 16. Any other relevant information

History

Date of issue/Date of revision : 21/06/2017

Date of previous issue : 18/09/2015.

Version : 4

Key to abbreviations

ADG = Australian Dangerous Goods
 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)
 NOHSC = National Occupational Health and Safety Commission

Section 16. Any other relevant information

SUSMP = Standard Uniform Schedule of Medicine and Poisons
 UN = United Nations

Procedure used to derive the classification

Classification	Justification
RecoverEase Proteinase K Solution Eye Irrit. 2A, H319	Calculation method
RecoverEase Lysis Buffer Eye Irrit. 2A, H319	Calculation method

References : Not available.

✔ Indicates information that has changed from previously issued version.

Notice to reader

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