

SAFETY DATA SHEET

Absolutely miRNA Total Isolation Kit, Part Number 400814

Section 1. Identification

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|--------------------------------|--|-----------|--|
| Product identifier | : Absolutely miRNA Total Isolation Kit, Part Number 400814 | | |
| Part No. (Chemical Kit) | : 400814 | | |
| Part No. | : RNase-Free DNase I (Lyophilized) | 400711-23 | |
| | : β -Mercaptoethanol | 200345-21 | |
| | : Lysis Buffer | 400814-13 | |
| | : 1.67x High-Salt Wash Buffer | 400814-14 | |
| | : 5X Low Salt Wash Buffer | 400814-15 | |
| | : Elution Buffer | 400814-16 | |
| | : DNase Reconstitution Buffer | 400814-17 | |
| | : DNase Digestion Buffer | 400814-18 | |

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

Analytical reagent.

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| RNase-Free DNase I (Lyophilized) | 2600 U | | |
| β -Mercaptoethanol | 0.75 ml (750 μ l) | 14.33 M) | |
| Lysis Buffer | 35 ml | | |
| 1.67x High-Salt Wash Buffer | 24 ml | | |
| 5X Low Salt Wash Buffer | 19 ml | | |
| Elution Buffer | 2.5 ml | | |
| DNase Reconstitution Buffer | 0.3 ml | | |
| DNase Digestion Buffer | 2.5 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

β -Mercaptoethanol

| | |
|------|--|
| H227 | FLAMMABLE LIQUIDS - Category 4 |
| H301 | ACUTE TOXICITY (oral) - Category 3 |
| H310 | ACUTE TOXICITY (dermal) - Category 2 |
| H330 | ACUTE TOXICITY (inhalation) - Category 2 |
| H315 | SKIN CORROSION/IRRITATION - Category 2 |
| H318 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 |
| H317 | SKIN SENSITISATION - Category 1 |
| H335 | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3 |
| H411 | LONG-TERM AQUATIC HAZARD - Category 2 |

Lysis Buffer

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|------|--|
| H302 | ACUTE TOXICITY (oral) - Category 4 |
| H332 | ACUTE TOXICITY (inhalation) - Category 4 |
| H412 | LONG-TERM AQUATIC HAZARD - Category 3 |

1.67x High-Salt Wash Buffer

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|------|--|
| H302 | ACUTE TOXICITY (oral) - Category 4 |
| H332 | ACUTE TOXICITY (inhalation) - Category 4 |

Section 2. Hazard(s) identification

H412 LONG-TERM AQUATIC HAZARD - Category 3

DNase Digestion Buffer

H226
H319

FLAMMABLE LIQUIDS - Category 3
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A

- 1.67x High-Salt Wash Buffer Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 1.2%
- 1.67x High-Salt Wash Buffer Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 1.2%

GHS label elements

Hazard pictograms



Signal word

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- | | |
|----------------------------------|-----------------|
| RNase-Free DNase I (Lyophilized) | No signal word. |
| β-Mercaptoethanol | DANGER |
| Lysis Buffer | WARNING |
| 1.67x High-Salt Wash Buffer | WARNING |
| 5X Low Salt Wash Buffer | No signal word. |
| Elution Buffer | No signal word. |
| DNase Reconstitution Buffer | No signal word. |
| DNase Digestion Buffer | WARNING |

Hazard statements

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| RNase-Free DNase I (Lyophilized) | No known significant effects or critical hazards. |
| β-Mercaptoethanol | H227 - Combustible liquid. H310 + H330 - Fatal in contact with skin or if inhaled. H301 - Toxic if swallowed. H318 - Causes serious eye damage. H315 - Causes skin irritation. H317 - May cause an allergic skin reaction. H335 - May cause respiratory irritation. |
| Lysis Buffer | H411 - Toxic to aquatic life with long lasting effects. |
| 1.67x High-Salt Wash Buffer | H302 + H332 - Harmful if swallowed or if inhaled. H412 - Harmful to aquatic life with long lasting effects. |
| 5X Low Salt Wash Buffer | No known significant effects or critical hazards. |
| Elution Buffer | No known significant effects or critical hazards. |
| DNase Reconstitution Buffer | No known significant effects or critical hazards. |
| DNase Digestion Buffer | H226 - Flammable liquid and vapour. H319 - Causes serious eye irritation. |

Precautionary statements


Prevention

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- | | |
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| RNase-Free DNase I (Lyophilized) | Not applicable. |
| β-Mercaptoethanol | P280 - Wear protective gloves. Wear eye or face protection. P284 - Wear respiratory protection. P210 - Keep away from flames and hot surfaces. - No smoking. P271 - Use only outdoors or in a well-ventilated area. P273 - Avoid release to the environment. P262 - Do not get in eyes, on skin, or on clothing. P260 - Do not breathe vapour. P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling. P272 - Contaminated work clothing should not be allowed out of the workplace. |

Section 2. Hazard(s) identification

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| Lysis Buffer | P271 - Use only outdoors or in a well-ventilated area. P273 - Avoid release to the environment. P261 - Avoid breathing vapour. P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling. |
| 1.67x High-Salt Wash Buffer | P271 - Use only outdoors or in a well-ventilated area. P273 - Avoid release to the environment. P261 - Avoid breathing vapour. P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling. |
| 5X Low Salt Wash Buffer | Not applicable. |
| Elution Buffer | Not applicable. |
| DNase Reconstitution Buffer | Not applicable. |
| DNase Digestion Buffer | P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P233 - Keep container tightly closed. P264 - Wash hands thoroughly after handling. |

Response

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| :  DNase-Free DNase I (Lyophilized) β-Mercaptoethanol | Not applicable. P391 - Collect spillage. P304 + P340 + P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. P301 + P310 + P330 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. P302 + P361 + P350 + P310 + P362 + P363 - IF ON SKIN: Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Immediately call a POISON CENTER or physician. Take off contaminated clothing. Wash contaminated clothing before reuse. P333 + P313 - If skin irritation or rash occurs: Get medical attention. P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician. P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. |
| Lysis Buffer | P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. |
| 1.67x High-Salt Wash Buffer | P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. |

Section 2. Hazard(s) identification

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| | 5X Low Salt Wash Buffer | Not applicable. |
| | Elution Buffer | Not applicable. |
| | DNase Reconstitution Buffer | Not applicable. |
| | DNase Digestion Buffer | P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. 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. |
| Storage | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol | Not applicable. P405 - Store locked up. P403 - Store in a well-ventilated place. P235 - Keep cool. |
| | Lysis Buffer | Not applicable. |
| | 1.67x High-Salt Wash Buffer | Not applicable. |
| | 5X Low Salt Wash Buffer | Not applicable. |
| | Elution Buffer | Not applicable. |
| | DNase Reconstitution Buffer | Not applicable. |
| | DNase Digestion Buffer | P403 - Store in a well-ventilated place. P235 - Keep cool. |
| Disposal | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol | Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. |
| | Lysis Buffer | P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. |
| | 1.67x High-Salt Wash Buffer | P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. |
| | 5X Low Salt Wash Buffer | Not applicable. |
| | Elution Buffer | Not applicable. |
| | DNase Reconstitution Buffer | Not applicable. |
| | DNase Digestion Buffer | P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. |
| Supplemental label elements | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. |
| Other hazards which do not result in classification | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | None known. None known. None known. None known. None known. None known. None known. None known. |

Section 3. Composition and ingredient information

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| Substance/mixture | : | RNase-Free DNase I (Lyophilized) | Substance |
| | | β-Mercaptoethanol | Substance |
| | | Lysis Buffer | Mixture |
| | | 1.67x High-Salt Wash Buffer | Mixture |
| | | 5X Low Salt Wash Buffer | Mixture |
| | | Elution Buffer | Mixture |
| | | DNase Reconstitution Buffer | Mixture |
| | | DNase Digestion Buffer | Mixture |

CAS number/other identifiers

| Ingredient name | % (w/w) | CAS number |
|---|-----------|------------|
| RNase-Free DNase I (Lyophilized) RNase-Free DNase I (Lyophilized) | 100 | - |
| β-Mercaptoethanol 2-Mercaptoethanol | 100 | 60-24-2 |
| Lysis Buffer Guanidinium thiocyanate | ≥30 - <55 | 593-84-0 |
| 1.67x High-Salt Wash Buffer Guanidinium thiocyanate | ≥30 - <55 | 593-84-0 |
| DNase Reconstitution Buffer Glycerol | ≥30 - ≤60 | 56-81-5 |
| DNase Digestion Buffer Ethanol | ≥10 - ≤30 | 64-17-5 |

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

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| Eye contact | : | RNase-Free DNase I (Lyophilized) | 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. |
| | | β-Mercaptoethanol | Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. |
| | | 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 if irritation occurs. |
| | | 1.67x 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. |
| | | 5X Low Salt Wash Buffer | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. |

Section 4. First aid measures

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| | Elution Buffer | Check for and remove any contact lenses. Get medical attention if irritation occurs. 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. |
| | DNase Reconstitution 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. |
| | DNase Digestion 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. |
| Inhalation | : RNase-Free DNase I (Lyophilized) | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. |
| | β-Mercaptoethanol | Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. |
| | Lysis 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-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. |
| | 1.67x 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-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, |

Section 4. First aid measures

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| | | 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. |
| | 5X Low Salt Wash Buffer | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. |
| | Elution Buffer | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. |
| | DNase Reconstitution Buffer | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. |
| | DNase Digestion 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. |
| Skin contact | : RNase-Free DNase I (Lyophilized) | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| | β-Mercaptoethanol | Get medical attention immediately. Call a poison center or physician. Gently wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse. |
| | 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. |
| | 1.67x 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. |
| | 5X Low Salt Wash Buffer | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| | Elution Buffer | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| | DNase Reconstitution Buffer | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| | DNase Digestion 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. |

Section 4. First aid measures

Ingestion

: RNase-Free DNase I
(Lyophilized)

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.

β -Mercaptoethanol

Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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 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.

1.67x 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 open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

5X Low Salt Wash 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.

Section 4. First aid measures

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

Most important symptoms/effects, acute and delayed

Potential acute health effects

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| Eye contact | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | No known significant effects or critical hazards. Causes serious eye damage. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. Causes serious eye irritation. |
| Inhalation | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | No known significant effects or critical hazards. Fatal if inhaled. May cause respiratory irritation. Harmful if inhaled. Harmful if inhaled. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Skin contact | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | No known significant effects or critical hazards. Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |

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| Ingestion | : | RNase-Free DNase I (Lyophilized) | No known significant effects or critical hazards. |
| | | β-Mercaptoethanol | Toxic if swallowed. |
| | | Lysis Buffer | Harmful if swallowed. |
| | | 1.67x High-Salt Wash Buffer | Harmful if swallowed. |
| | | 5X Low Salt Wash Buffer | No known significant effects or critical hazards. |
| | | Elution Buffer | No known significant effects or critical hazards. |
| | | DNase Reconstitution Buffer | No known significant effects or critical hazards. |
| | | DNase Digestion Buffer | No known significant effects or critical hazards. |

Over-exposure signs/symptoms

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| Eye contact | : | RNase-Free DNase I (Lyophilized) | No specific data. |
| | | β-Mercaptoethanol | Adverse symptoms may include the following: pain watering redness |
| | | Lysis Buffer | No specific data. |
| | | 1.67x High-Salt Wash Buffer | No specific data. |
| | | 5X Low Salt Wash Buffer | No specific data. |
| | | Elution Buffer | No specific data. |
| | | DNase Reconstitution Buffer | No specific data. |
| | | DNase Digestion Buffer | Adverse symptoms may include the following: pain or irritation watering redness |

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| Inhalation | : | RNase-Free DNase I (Lyophilized) | No specific data. |
| | | β-Mercaptoethanol | Adverse symptoms may include the following: respiratory tract irritation coughing |
| | | Lysis Buffer | No specific data. |
| | | 1.67x High-Salt Wash Buffer | No specific data. |
| | | 5X Low Salt Wash Buffer | No specific data. |
| | | Elution Buffer | No specific data. |
| | | DNase Reconstitution Buffer | No specific data. |
| | | DNase Digestion Buffer | No specific data. |

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| Skin contact | : | RNase-Free DNase I (Lyophilized) | No specific data. |
| | | β-Mercaptoethanol | Adverse symptoms may include the following: pain or irritation redness blistering may occur |
| | | Lysis Buffer | No specific data. |
| | | 1.67x High-Salt Wash Buffer | No specific data. |
| | | 5X Low Salt Wash Buffer | No specific data. |
| | | Elution Buffer | No specific data. |
| | | DNase Reconstitution Buffer | No specific data. |
| | | DNase Digestion Buffer | No specific data. |

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| Ingestion | : | RNase-Free DNase I (Lyophilized) | No specific data. |
| | | β-Mercaptoethanol | Adverse symptoms may include the following: stomach pains |
| | | Lysis Buffer | No specific data. |
| | | 1.67x High-Salt Wash Buffer | No specific data. |
| | | 5X Low Salt Wash Buffer | No specific data. |
| | | Elution Buffer | No specific data. |
| | | DNase Reconstitution Buffer | No specific data. |
| | | DNase Digestion Buffer | No specific data. |

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

Section 4. First aid measures

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| Notes to physician | : RNase-Free DNase I (Lyophilized) | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | β-Mercaptoethanol | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | Lysis 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. |
| | 1.67x 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. |
| | 5X Low Salt Wash Buffer | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | Elution Buffer | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | DNase Reconstitution Buffer | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | DNase Digestion Buffer | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| Specific treatments | : RNase-Free DNase I (Lyophilized) | No specific treatment. |
| | β-Mercaptoethanol | No specific treatment. |
| | Lysis Buffer | No specific treatment. |
| | 1.67x High-Salt Wash Buffer | No specific treatment. |
| | 5X Low Salt Wash Buffer | No specific treatment. |
| | Elution Buffer | No specific treatment. |
| | DNase Reconstitution Buffer | No specific treatment. |
| | DNase Digestion Buffer | No specific treatment. |
| Protection of first-aiders | : RNase-Free DNase I (Lyophilized) | No action shall be taken involving any personal risk or without suitable training. |
| | β-Mercaptoethanol | No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. |
| | Lysis 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. |
| | 1.67x 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. |
| | 5X Low Salt Wash Buffer | No action shall be taken involving any personal risk or without suitable training. |
| | Elution Buffer | No action shall be taken involving any personal risk or without suitable training. |
| | DNase Reconstitution Buffer | No action shall be taken involving any personal risk or without suitable training. |

Section 4. First aid measures

DNase Digestion 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.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media

- : RNase-Free DNase I (Lyophilized) Use an extinguishing agent suitable for the surrounding fire.
- β-Mercaptoethanol Use dry chemical, CO₂, water spray (fog) or foam.
- Lysis Buffer Use an extinguishing agent suitable for the surrounding fire.
- 1.67x High-Salt Wash Buffer Use an extinguishing agent suitable for the surrounding fire.
- 5X Low Salt Wash Buffer Use an extinguishing agent suitable for the surrounding fire.
- Elution Buffer Use an extinguishing agent suitable for the surrounding fire.
- DNase Reconstitution Buffer Use an extinguishing agent suitable for the surrounding fire.
- DNase Digestion Buffer Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media

- : RNase-Free DNase I (Lyophilized) None known.
- β-Mercaptoethanol Do not use water jet.
- Lysis Buffer None known.
- 1.67x High-Salt Wash Buffer None known.
- 5X Low Salt Wash Buffer None known.
- Elution Buffer None known.
- DNase Reconstitution Buffer None known.
- DNase Digestion Buffer Do not use water jet.

Specific hazards arising from the chemical

- : RNase-Free DNase I (Lyophilized) No specific fire or explosion hazard.
- β-Mercaptoethanol Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is toxic 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.
- Lysis 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.
- 1.67x 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.
- 5X Low Salt Wash Buffer In a fire or if heated, a pressure increase will occur and the container may burst.

Section 5. Firefighting measures

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| | Elution Buffer | In a fire or if heated, a pressure increase will occur and the container may burst. | |
| | DNase Reconstitution Buffer | In a fire or if heated, a pressure increase will occur and the container may burst. | |
| | DNase Digestion Buffer | Flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. | |
| Hazardous thermal decomposition products | : RNase-Free DNase I (Lyophilized) | Decomposition products may include the following materials: carbon dioxide carbon monoxide | |
| | β-Mercaptoethanol | Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides | |
| | Lysis Buffer | Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides | |
| | 1.67x High-Salt Wash Buffer | Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds | |
| | 5X Low Salt Wash Buffer | No specific data. | |
| | Elution Buffer | No specific data. | |
| | DNase Reconstitution Buffer | Decomposition products may include the following materials: carbon dioxide carbon monoxide | |
| | DNase Digestion Buffer | Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides | |
| | Special protective actions for fire-fighters | : RNase-Free DNase I (Lyophilized) | 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. |
| | | β-Mercaptoethanol | 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. |
| 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. | |
| 1.67x 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. | |
| 5X Low Salt Wash Buffer | | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No | |

Section 5. Firefighting measures

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| | | 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. |
| | DNase Reconstitution 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. |
| | DNase 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. |
| Special protective equipment for fire-fighters | : RNase-Free DNase I (Lyophilized) | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| | β-Mercaptoethanol | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| | 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. |
| | 1.67x 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. |
| | 5X Low 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. |
| | 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. |
| | DNase Reconstitution Buffer | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| | DNase 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. |
| Hazchem code | : RNase-Free DNase I (Lyophilized) | Not available. |
| | β-Mercaptoethanol | 2X |
| | Lysis Buffer | Not available. |
| | 1.67x High-Salt Wash Buffer | Not available. |
| | 5X Low Salt Wash Buffer | Not available. |
| | Elution Buffer | Not available. |
| | DNase Reconstitution Buffer | Not available. |
| | DNase Digestion Buffer | 2[Y] |

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

| | | |
|------------------------------------|------------------------------------|---|
| For non-emergency personnel | : RNase-Free DNase I (Lyophilized) | 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. |
| | β -Mercaptoethanol | 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| | 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. |
| | 1.67x 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 on appropriate personal protective equipment. |
| | 5X Low 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. Put on appropriate personal protective equipment. |
| | Elution 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. |
| | DNase Reconstitution 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. |
| | DNase 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |

Section 6. Accidental release measures

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| For emergency responders | : RNase-Free DNase I (Lyophilized) | 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". |
| | β-Mercaptoethanol | 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". |
| | 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". |
| | 1.67x 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". |
| | 5X Low 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". |
| | DNase Reconstitution 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". |
| | DNase 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". |
| Environmental precautions | : RNase-Free DNase I (Lyophilized) | 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). |
| | β-Mercaptoethanol | 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. Collect spillage. |
| | 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). Water polluting material. May be harmful to the environment if released in large quantities. |
| | 1.67x 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. |
| | 5X Low 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). |
| | Elution Buffer | Avoid dispersal of spilt material and runoff and |

Section 6. Accidental release measures

| | |
|-----------------------------|---|
| | contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |
| DNase Reconstitution 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). |
| DNase 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 | : | RNase-Free DNase I (Lyophilized) | Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. |
| | | β-Mercaptoethanol | Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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. |
| | | 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. |
| | | 1.67x 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. |
| | | 5X Low 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. |
| | | DNase Reconstitution 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. |
| | | DNase Digestion Buffer | Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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 |

Section 6. Accidental release measures

waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

: RNase-Free DNase I
(Lyophilized)
β-Mercaptoethanol

Put on appropriate personal protective equipment (see Section 8).
Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.

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. 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.

1.67x 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.

5X Low Salt Wash Buffer

Put on appropriate personal protective equipment (see Section 8).

Elution Buffer

Put on appropriate personal protective equipment (see Section 8).

DNase Reconstitution Buffer

Put on appropriate personal protective equipment (see Section 8).

DNase Digestion 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. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material

Section 7. Handling and storage

Advice on general occupational hygiene

: RNase-Free DNase I (Lyophilized)

β-Mercaptoethanol

Lysis Buffer

1.67x High-Salt Wash Buffer

5X Low Salt Wash Buffer

Elution Buffer

DNase Reconstitution Buffer

DNase Digestion Buffer

handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

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.

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.

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.

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.

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.

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.

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.

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.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : RNase-Free DNase I (Lyophilized)

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.

β -Mercaptoethanol

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. 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.

Lysis 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.

1.67x 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.

5X Low 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.

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.

DNase Reconstitution Buffer

Store in accordance with local regulations. Store in

Section 7. Handling and storage

DNase Digestion Buffer

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.

Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

| Ingredient name | Exposure limits |
|--|---|
| DNase Reconstitution Buffer Glycerol | Safe Work Australia (Australia, 1/2014). TWA: 10 mg/m ³ 8 hours. |
| DNase Digestion Buffer Ethanol | Safe Work Australia (Australia, 1/2014). TWA: 1880 mg/m ³ 8 hours. TWA: 1000 ppm 8 hours. |

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Section 8. Exposure controls and personal protection

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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- 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 | : | RNAse-Free DNase I | Solid. [lyophilised] |
| | | (Lyophilized) | |
| | | β-Mercaptoethanol | Liquid. |
| | | Lysis Buffer | Liquid. |
| | | 1.67x High-Salt Wash Buffer | Liquid. |
| | | 5X Low Salt Wash Buffer | Liquid. |
| | | Elution Buffer | Liquid. |
| | | DNase Reconstitution Buffer | Liquid. |
| Colour | : | RNAse-Free DNase I | Not available. |
| | | (Lyophilized) | |
| | | β-Mercaptoethanol | Colourless. |
| | | Lysis Buffer | Not available. |
| | | 1.67x High-Salt Wash Buffer | Not available. |
| | | 5X Low Salt Wash Buffer | Not available. |
| | | Elution Buffer | Colourless. |
| | | DNase Reconstitution Buffer | Not available. |
| Odour | : | RNAse-Free DNase I | Not available. |
| | | (Lyophilized) | |
| | | β-Mercaptoethanol | Characteristic. |
| | | Lysis Buffer | Not available. |
| | | 1.67x High-Salt Wash Buffer | Not available. |
| | | 5X Low Salt Wash Buffer | Not available. |
| | | Elution Buffer | Odourless. |
| | | DNase Reconstitution Buffer | Not available. |
| Odour threshold | : | RNAse-Free DNase I | Not available. |
| | | (Lyophilized) | |
| | | β-Mercaptoethanol | Not available. |
| | | Lysis Buffer | Not available. |
| | | 1.67x High-Salt Wash Buffer | Not available. |
| | | 5X Low Salt Wash Buffer | Not available. |
| | | Elution Buffer | Not available. |
| | | DNase Reconstitution Buffer | Not available. |
| | DNase Digestion Buffer | Not available. | |

Section 9. Physical and chemical properties

| | | | |
|----------------------------------|---|----------------------------------|--|
| pH | : | RNAse-Free DNase I (Lyophilized) | Not available. |
| | | β-Mercaptoethanol | Not available. |
| | | Lysis Buffer | 7 |
| | | 1.67x High-Salt Wash Buffer | 6.4 |
| | | 5X Low Salt Wash Buffer | Not available. |
| | | Elution Buffer | 7.5 |
| | | DNase Reconstitution Buffer | 7.6 |
| | | DNase Digestion Buffer | 7 |
| Melting point | : | RNAse-Free DNase I (Lyophilized) | Not available. |
| | | β-Mercaptoethanol | -100°C (-148°F) |
| | | Lysis Buffer | Not available. |
| | | 1.67x High-Salt Wash Buffer | Not available. |
| | | 5X Low Salt Wash Buffer | 0°C (32°F) |
| | | Elution Buffer | 0°C (32°F) |
| | | DNase Reconstitution Buffer | Not available. |
| | | DNase Digestion Buffer | Not available. |
| Boiling point | : | RNAse-Free DNase I (Lyophilized) | Not available. |
| | | β-Mercaptoethanol | 157°C (314.6°F) |
| | | Lysis Buffer | Not available. |
| | | 1.67x High-Salt Wash Buffer | Not available. |
| | | 5X Low Salt Wash Buffer | 100°C (212°F) |
| | | Elution Buffer | 100°C (212°F) |
| | | DNase Reconstitution Buffer | Not available. |
| | | DNase Digestion Buffer | Not available. |
| Flash point | : | RNAse-Free DNase I (Lyophilized) | Not available. |
| | | β-Mercaptoethanol | Closed cup: 74°C (165.2°F) Open cup: 74°C (165.2°F) |
| | | Lysis Buffer | Not available. |
| | | 1.67x High-Salt Wash Buffer | Not available. |
| | | 5X Low Salt Wash Buffer | Not available. |
| | | Elution Buffer | Not available. |
| | | DNase Reconstitution Buffer | Not available. |
| | | DNase Digestion Buffer | Closed cup: 32°C (89.6°F) |
| Evaporation rate | : | RNAse-Free DNase I (Lyophilized) | Not available. |
| | | β-Mercaptoethanol | Not available. |
| | | Lysis Buffer | Not available. |
| | | 1.67x High-Salt Wash Buffer | Not available. |
| | | 5X Low Salt Wash Buffer | Not available. |
| | | Elution Buffer | Not available. |
| | | DNase Reconstitution Buffer | Not available. |
| | | DNase Digestion Buffer | Not available. |
| Flammability (solid, gas) | : | RNAse-Free DNase I (Lyophilized) | Not applicable. |
| | | β-Mercaptoethanol | Not applicable. |
| | | Lysis Buffer | Not applicable. |
| | | 1.67x High-Salt Wash Buffer | Not applicable. |
| | | 5X Low Salt Wash Buffer | Not applicable. |
| | | Elution Buffer | Not applicable. |
| | | DNase Reconstitution Buffer | Not applicable. |
| | | DNase Digestion Buffer | Not applicable. |

Section 9. Physical and chemical properties

| | | | |
|---|---|----------------------------------|--|
| Lower and upper explosive (flammable) limits | : | RNAse-Free DNase I (Lyophilized) | Not available. |
| | | β-Mercaptoethanol | Lower: 2.3% Upper: 18% |
| | | Lysis Buffer | Not available. |
| | | 1.67x High-Salt Wash Buffer | Not available. |
| | | 5X Low Salt Wash Buffer | Not available. |
| | | Elution Buffer | Not available. |
| | | DNase Reconstitution Buffer | Not available. |
| | | DNase Digestion Buffer | Not available. |
| Vapour pressure | : | RNAse-Free DNase I (Lyophilized) | Not available. |
| | | β-Mercaptoethanol | 0.13 kPa (0.98 mm Hg) [room temperature] |
| | | Lysis Buffer | Not available. |
| | | 1.67x High-Salt Wash Buffer | Not available. |
| | | 5X Low Salt Wash Buffer | Not available. |
| | | Elution Buffer | Not available. |
| | | DNase Reconstitution Buffer | Not available. |
| | | DNase Digestion Buffer | Not available. |
| Vapour density | : | RNAse-Free DNase I (Lyophilized) | Not available. |
| | | β-Mercaptoethanol | 2.7 [Air = 1] |
| | | Lysis Buffer | Not available. |
| | | 1.67x High-Salt Wash Buffer | Not available. |
| | | 5X Low Salt Wash Buffer | Not available. |
| | | Elution Buffer | Not available. |
| | | DNase Reconstitution Buffer | Not available. |
| | | DNase Digestion Buffer | Not available. |
| Relative density | : | RNAse-Free DNase I (Lyophilized) | Not available. |
| | | β-Mercaptoethanol | 1.1 |
| | | Lysis Buffer | Not available. |
| | | 1.67x High-Salt Wash Buffer | Not available. |
| | | 5X Low Salt Wash Buffer | Not available. |
| | | Elution Buffer | Not available. |
| | | DNase Reconstitution Buffer | Not available. |
| | | DNase Digestion Buffer | Not available. |
| Solubility | : | RNAse-Free DNase I (Lyophilized) | Easily soluble in the following materials: cold water and hot water. |
| | | β-Mercaptoethanol | Easily soluble in the following materials: cold water and hot water. |
| | | Lysis Buffer | Soluble in the following materials: cold water and hot water. |
| | | 1.67x High-Salt Wash Buffer | Soluble in the following materials: cold water and hot water. |
| | | 5X Low Salt Wash Buffer | Easily soluble in the following materials: cold water and hot water. |
| | | Elution Buffer | Easily soluble in the following materials: cold water and hot water. |
| | | DNase Reconstitution Buffer | Soluble in the following materials: cold water and hot water. |
| | | DNase Digestion Buffer | Soluble in the following materials: cold water and hot water. |
| Partition coefficient: n-octanol/water | : | RNAse-Free DNase I (Lyophilized) | Not available. |
| | | β-Mercaptoethanol | -0.056 |
| | | Lysis Buffer | Not available. |
| | | 1.67x High-Salt Wash Buffer | Not available. |
| | | 5X Low Salt Wash Buffer | Not available. |
| | | Elution Buffer | Not available. |
| | | DNase Reconstitution Buffer | Not available. |
| | | DNase Digestion Buffer | Not available. |

Section 9. Physical and chemical properties

| | | |
|----------------------------------|------------------------------------|--|
| Auto-ignition temperature | : RNase-Free DNase I (Lyophilized) | Not available. |
| | β-Mercaptoethanol | 295°C (563°F) |
| | Lysis Buffer | Not available. |
| | 1.67x High-Salt Wash Buffer | Not available. |
| | 5X Low Salt Wash Buffer | Not available. |
| | Elution Buffer | Not available. |
| | DNase Reconstitution Buffer | Not available. |
| | DNase Digestion Buffer | Not available. |
| | Decomposition temperature | : RNase-Free DNase I (Lyophilized) |
| β-Mercaptoethanol | | Not available. |
| Lysis Buffer | | Not available. |
| 1.67x High-Salt Wash Buffer | | Not available. |
| 5X Low Salt Wash Buffer | | Not available. |
| Elution Buffer | | Not available. |
| DNase Reconstitution Buffer | | Not available. |
| DNase Digestion Buffer | | Not available. |
| Viscosity | | : RNase-Free DNase I (Lyophilized) |
| | β-Mercaptoethanol | Dynamic (room temperature): 3.43 mPa·s (3.43 cP) |
| | Lysis Buffer | Not available. |
| | 1.67x High-Salt Wash Buffer | Not available. |
| | 5X Low Salt Wash Buffer | Not available. |
| | Elution Buffer | Not available. |
| | DNase Reconstitution Buffer | Not available. |
| | DNase Digestion Buffer | Not available. |

Section 10. Stability and reactivity

| | | |
|-----------------------------|------------------------------------|--|
| Reactivity | : RNase-Free DNase I (Lyophilized) | No specific test data related to reactivity available for this product or its ingredients. |
| | β-Mercaptoethanol | No specific test data related to reactivity available for this product or its ingredients. |
| | Lysis Buffer | No specific test data related to reactivity available for this product or its ingredients. |
| | 1.67x High-Salt Wash Buffer | No specific test data related to reactivity available for this product or its ingredients. |
| | 5X Low 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. |
| | DNase Reconstitution Buffer | No specific test data related to reactivity available for this product or its ingredients. |
| | DNase Digestion Buffer | No specific test data related to reactivity available for this product or its ingredients. |
| | Chemical stability | : RNase-Free DNase I (Lyophilized) |
| β-Mercaptoethanol | | The product is stable. |
| Lysis Buffer | | The product is stable. |
| 1.67x High-Salt Wash Buffer | | The product is stable. |
| 5X Low Salt Wash Buffer | | The product is stable. |
| Elution Buffer | | The product is stable. |
| DNase Reconstitution Buffer | | The product is stable. |
| DNase Digestion Buffer | | The product is stable. |

Section 10. Stability and reactivity

| | | |
|---|--|---|
| Possibility of hazardous reactions | <p>: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol</p> <p>Lysis Buffer</p> <p>1.67x High-Salt Wash Buffer</p> <p>5X Low Salt Wash Buffer</p> <p>Elution Buffer</p> <p>DNase Reconstitution Buffer</p> <p>DNase Digestion Buffer</p> | <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> |
| Conditions to avoid | <p>: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol</p> <p>Lysis Buffer</p> <p>1.67x High-Salt Wash Buffer</p> <p>5X Low Salt Wash Buffer</p> <p>Elution Buffer</p> <p>DNase Reconstitution Buffer</p> <p>DNase Digestion Buffer</p> | <p>No specific data.</p> <p>Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.</p> |
| Incompatible materials | <p>: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol</p> <p>Lysis Buffer</p> <p>1.67x High-Salt Wash Buffer</p> <p>5X Low Salt Wash Buffer</p> <p>Elution Buffer</p> <p>DNase Reconstitution Buffer</p> <p>DNase Digestion Buffer</p> | <p>May react or be incompatible with oxidising materials.</p> <p>Reactive or incompatible with the following materials: oxidizing materials</p> <p>May react or be incompatible with oxidising materials.</p> <p>May react or be incompatible with oxidising materials.</p> <p>May react or be incompatible with oxidising materials.</p> <p>May react or be incompatible with oxidising materials.</p> <p>May react or be incompatible with oxidising materials.</p> <p>Reactive or incompatible with the following materials: oxidizing materials</p> |
| Hazardous decomposition products | <p>: RNase-Free DNase I (Lyophilized)</p> <p>β-Mercaptoethanol</p> <p>Lysis Buffer</p> <p>1.67x High-Salt Wash Buffer</p> <p>5X Low Salt Wash Buffer</p> <p>Elution Buffer</p> | <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> |

Section 10. Stability and reactivity

| | |
|-----------------------------|---|
| DNase Reconstitution Buffer | produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| DNase 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 |
|--|------------------------|---------|--------------------------|----------|
| β-Mercaptoethanol 2-Mercaptoethanol | LD50 Dermal | Rabbit | 200 mg/kg | - |
| | LD50 Oral | Rat | 244 mg/kg | - |
| DNase Reconstitution Buffer Glycerol | LD50 Oral | Rat | 12600 mg/kg | - |
| DNase Digestion Buffer Ethanol | LC50 Inhalation Vapour | Rat | 124700 mg/m ³ | 4 hours |
| | LD50 Oral | Rat | 7 g/kg | - |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|--|--------------------------|---------|-------|-----------------------------------|-------------|
| β-Mercaptoethanol 2-Mercaptoethanol | Eyes - Severe irritant | Rabbit | - | 2 milligrams | - |
| | | | | | |
| DNase Reconstitution Buffer Glycerol | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| DNase Digestion Buffer Ethanol | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Eyes - Moderate irritant | Rabbit | - | 0.06666667 minutes 100 milligrams | - |
| | Eyes - Moderate irritant | Rabbit | - | 100 microliters | - |
| | Skin - Mild irritant | Rabbit | - | 400 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 20 milligrams | - |

Sensitisation

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Section 11. Toxicological information

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

| Name | Category | Route of exposure | Target organs |
|---|------------|-------------------|------------------------------|
| β-Mercaptoethanol 2-Mercaptoethanol | 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 | β-Nase-Free DNase I (Lyophilized) | Not available. |
| | β-Mercaptoethanol | Routes of entry anticipated: Oral, Dermal, Inhalation. |
| | Lysis Buffer | Routes of entry anticipated: Oral, Dermal, Inhalation. |
| | 1.67x High-Salt Wash Buffer | Routes of entry anticipated: Oral, Dermal, Inhalation. |
| | 5X Low Salt Wash Buffer | Not available. |
| | Elution Buffer | Not available. |
| | DNase Reconstitution Buffer | Routes of entry anticipated: Oral, Dermal, Inhalation. |
| | DNase Digestion Buffer | Routes of entry anticipated: Oral, Dermal, Inhalation. |

Potential acute health effects

| | | |
|---------------------|--|--|
| Eye contact | β-Nase-Free DNase I (Lyophilized) | No known significant effects or critical hazards. |
| | β-Mercaptoethanol | Causes serious eye damage. |
| | Lysis Buffer | No known significant effects or critical hazards. |
| | 1.67x High-Salt Wash Buffer | No known significant effects or critical hazards. |
| | 5X Low Salt Wash Buffer | No known significant effects or critical hazards. |
| | Elution Buffer | No known significant effects or critical hazards. |
| | DNase Reconstitution Buffer | No known significant effects or critical hazards. |
| Inhalation | β-Nase-Free DNase I (Lyophilized) | No known significant effects or critical hazards. |
| | β-Mercaptoethanol | Fatal if inhaled. May cause respiratory irritation. |
| | Lysis Buffer | Harmful if inhaled. |
| | 1.67x High-Salt Wash Buffer | Harmful if inhaled. |
| | 5X Low Salt Wash Buffer | No known significant effects or critical hazards. |
| | Elution Buffer | No known significant effects or critical hazards. |
| | DNase Reconstitution Buffer | No known significant effects or critical hazards. |
| Skin contact | β-Nase-Free DNase I (Lyophilized) | No known significant effects or critical hazards. |
| | β-Mercaptoethanol | Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction. |
| | Lysis Buffer | No known significant effects or critical hazards. |
| | 1.67x High-Salt Wash Buffer | No known significant effects or critical hazards. |
| | 5X Low Salt Wash Buffer | No known significant effects or critical hazards. |
| | Elution Buffer | No known significant effects or critical hazards. |
| | DNase Reconstitution Buffer | No known significant effects or critical hazards. |
| | DNase Digestion Buffer | No known significant effects or critical hazards. |

Section 11. Toxicological information

| | | |
|------------------|--|--|
| Ingestion | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | No known significant effects or critical hazards. Toxic if swallowed. Harmful if swallowed. Harmful if swallowed. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
|------------------|--|--|

Symptoms related to the physical, chemical and toxicological characteristics

| | | |
|--------------------|--|--|
| Eye contact | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | No specific data. Adverse symptoms may include the following: pain watering redness No specific data. No specific data. No specific data. No specific data. No specific data. Adverse symptoms may include the following: pain or irritation watering redness |
|--------------------|--|--|

| | | |
|-------------------|--|--|
| Inhalation | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | No specific data. Adverse symptoms may include the following: respiratory tract irritation coughing No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. |
|-------------------|--|--|

| | | |
|---------------------|--|---|
| Skin contact | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | No specific data. Adverse symptoms may include the following: pain or irritation redness blistering may occur No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. |
|---------------------|--|---|

| | | |
|------------------|--|---|
| Ingestion | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | No specific data. Adverse symptoms may include the following: stomach pains No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. |
|------------------|--|---|

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

Section 11. Toxicological information

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 | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | No known significant effects or critical hazards. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Carcinogenicity | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Mutagenicity | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Teratogenicity | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Developmental effects | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |

Section 11. Toxicological information

| | | |
|--------------------------|--|--|
| Fertility effects | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
|--------------------------|--|--|

Numerical measures of toxicity

Acute toxicity estimates

| Route | ATE value |
|--|--|
| Lysis Buffer Oral Dermal Inhalation (dusts and mists) | 1057.1 mg/kg 2325.6 mg/kg 3.171 mg/l |
| 1.67x High-Salt Wash Buffer Oral Dermal Inhalation (dusts and mists) | 1282.1 mg/kg 2820.5 mg/kg 3.846 mg/l |

| | | |
|--------------------------|--|--|
| Other information | : RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67x High-Salt Wash Buffer 5X Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer | Not available. Not available. Not available. Not available. Not available. Not available. Not available. Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking. |
|--------------------------|--|--|

Section 12. Ecological information

Toxicity

| Product/ingredient name | Result | Species | Exposure |
|--|---|---|----------------------------------|
| DNase Reconstitution Buffer Glycerol | Acute LC50 54000 mg/l Fresh water | Fish - Oncorhynchus mykiss | 96 hours |
| DNase Digestion Buffer Ethanol | Acute EC50 17.921 mg/l Marine water Acute EC50 2000 µg/l Fresh water Acute LC50 25500 µg/l Marine water | Algae - Ulva pertusa Daphnia - Daphnia magna Crustaceans - Artemia franciscana - Larvae | 96 hours 48 hours 48 hours |
| | Acute LC50 42000 µg/l Fresh water Chronic NOEC 4.995 mg/l Marine water Chronic NOEC 100 u/L Fresh water | Fish - Oncorhynchus mykiss Algae - Ulva pertusa Daphnia - Daphnia magna - Neonate | 4 days 96 hours 21 days |
| | Chronic NOEC 0.375 u/L Fresh water | Fish - Gambusia holbrooki - Larvae | 12 weeks |

Persistence and degradability

Section 12. Ecological information

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-----------------------------------|-------------------|------------|------------------|
| DNase Digestion Buffer Ethanol | - | - | Readily |

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|--|--------------------|-----|-----------|
| β -Mercaptoethanol 2-Mercaptoethanol | -0.056 | - | low |
| DNase Reconstitution Buffer Glycerol | -1.76 | - | low |
| DNase Digestion Buffer Ethanol | -0.35 | 0.5 | low |

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. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Regulatory information

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

Additional information : **Remarks**
De minimis quantities

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

6

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

Australia inventory (AICS) : Not determined.

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.

International lists

National inventory

| | |
|--------------------------|--|
| 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. |
| Turkey | : Not determined. |
| United States | : At least one component is not listed. |

Section 16. Any other relevant information

History

Date of issue/Date of revision : 20/09/2016

Date of previous issue : 03/06/2016.

Version : 6.1

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

Section 16. Any other relevant information

Procedure used to derive the classification

| Classification | Justification |
|---|---|
| β-Mercaptoethanol Flam. Liq. 4, H227 Acute Tox. 3, H301 Acute Tox. 2, H310 Acute Tox. 2, H330 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Chronic 2, H411 | On basis of test data On basis of test data On basis of test data On basis of test data Expert judgment Expert judgment Expert judgment Expert judgment Expert judgment |
| Lysis Buffer Acute Tox. 4, H302 Acute Tox. 4, H332 Aquatic Chronic 3, H412 | Calculation method Calculation method Calculation method |
| 1.67x High-Salt Wash Buffer Acute Tox. 4, H302 Acute Tox. 4, H332 Aquatic Chronic 3, H412 | Calculation method Calculation method Calculation method |
| DNase Digestion Buffer Flam. Liq. 3, H226 Eye Irrit. 2A, H319 | On basis of test data Calculation method |

References : Not available.

📌 Indicates information that has changed from previously issued version.

Notice to reader

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