



SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - Europe

Rev A0: 23/07/2023

SECTION 1: Identification of the Substance and Company/Undertaking

1.1 Product Identifier

Product name:	egSEQ RNA Library Prep Kit	
Cat. No.	EG2001S	
Specification	16rxn	
Component Cat. No.	EG100301S	Fast Frag Buffer
	EG100302S	Fast First Strand Buffer
	EG100303S	Fast First Strand Enzyme
	EG100304S	Fast Second Strand Buffer with dUTP
	EG100305S	Fast Second Strand Enzyme
	EG100306S	Fast Ligation Buffer
	EG100307S	Fast Ligase Mix
	EG100308S	PCR Master Mix with UDG

1.2 Relevant identified uses of the substance and uses advised against

Identified Uses:	Analytical reagent
Restricted Uses:	For research use only. Not available for diagnostic procedures.
Mixture supplied to that use in form of:	A mixture
Product Category by type of chemical:	Analytical reagent

1.3 Details of the supplier of the Safety data Sheet

Address:	Edinburgh Genetics Limited Pentlands Science Park, Penicuik, United Kingdom EH26 0PZ
Telephone Number:	+44 1312616686
Email Address:	sales@eggenetics.com

1.4 Emergency Telephone: +44 1312616686

SECTION 2: Hazards Identification

2.1 Classification of the mixture

2.1.1 Emergency Overview

Fast Frag Buffer	Colourless, Liquid. H316-Causes mild skin irritation. H320-Causes eye irritation.
Fast First Strand Buffer	
Fast First Strand Enzyme	
Fast Second Strand Buffer with dUTP	
Fast Second Strand Enzyme	
Fast Ligation Buffer	
Fast Ligase Mix	
PCR Master Mix with UDG	

2.1.2 Classification according to Regulation (EC) No 1272/2008 (including amendments):

Fast Frag Buffer	Skin corrosion/irritation-Category 3 Serious eye damage/eye irritation-Category 2B
Fast First Strand Buffer	
Fast First Strand Enzyme	
Fast Second Strand Buffer with dUTP	
Fast Second Strand Enzyme	
Fast Ligation Buffer	
Fast Ligase Mix	
PCR Master Mix with UDG	

2.1.3 GHS Category:

Fast Frag Buffer	H316-Causes mild skin irritation. ---Skin corrosion/irritation-Category 3 H320-Causes eye irritation. ---Serious eye damage/eye irritation-Category 2B
Fast First Strand Buffer	
Fast First Strand Enzyme	
Fast Second Strand Buffer with dUTP	
Fast Second Strand Enzyme	
Fast Ligation Buffer	
Fast Ligase Mix	
PCR Master Mix with UDG	

2.2 Label elements:

Hazard Pictogram:

Fast Frag Buffer	No Pictogram
Fast First Strand Buffer	
Fast First Strand Enzyme	
Fast Second Strand Buffer with dUTP	
Fast Second Strand Enzyme	
Fast Ligation Buffer	
Fast Ligase Mix	
PCR Master Mix with UDG	

Signal word:

Fast Frag Buffer	Warning
Fast First Strand Buffer	
Fast First Strand Enzyme	
Fast Second Strand Buffer with dUTP	
Fast Second Strand Enzyme	
Fast Ligation Buffer	
Fast Ligase Mix	
PCR Master Mix with UDG	

Hazard statements:

Fast Frag Buffer	H316-Causes mild skin irritation H320-Causes eye irritation.
Fast First Strand Buffer	
Fast First Strand Enzyme	
Fast Second Strand Buffer with dUTP	
Fast Second Strand Enzyme	
Fast Ligation Buffer	
Fast Ligase Mix	
PCR Master Mix with UDG	

Response:

Fast Frag Buffer	P332 + P317-If skin irritation occurs: Get medical help. P305 + P351 + P338-If in eyes: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P317-If eye irritation persists: Get medical help.
Fast First Strand Buffer	
Fast First Strand Enzyme	
Fast Second Strand Buffer with dUTP	
Fast Second Strand Enzyme	
Fast Ligation Buffer	
Fast Ligase Mix	
PCR Master Mix with UDG	

Prevention:

Fast Frag Buffer	P264-Wash hands thoroughly after operation
Fast First Strand Buffer	
Fast First Strand Enzyme	
Fast Second Strand Buffer with dUTP	
Fast Second Strand Enzyme	
Fast Ligation Buffer	
Fast Ligase Mix	
PCR Master Mix with UDG	

Disposal:

Fast Frag Buffer	N/A
Fast First Strand Buffer	
Fast First Strand Enzyme	
Fast Second Strand Buffer with dUTP	
Fast Second Strand Enzyme	
Fast Ligation Buffer	
Fast Ligase Mix	
PCR Master Mix with UDG	

Storage:

Fast Frag Buffer	N/A
Fast First Strand Buffer	
Fast First Strand Enzyme	
Fast Second Strand Buffer with dUTP	
Fast Second Strand Enzyme	
Fast Ligation Buffer	
Fast Ligase Mix	
PCR Master Mix with UDG	

2.3 Other Hazards: N/A

2.4 Additional Information: N/A

SECTION 3: Composition / Information on Ingredients

3.1 Substances

Fast Frag Buffer	Mixture
Fast First Strand Buffer	Mixture
Fast First Strand Enzyme	Mixture
Fast Second Strand Buffer with dUTP	Mixture
Fast Second Strand Enzyme	Mixture
Fast Ligation Buffer	Mixture
Fast Ligase Mix	Mixture
PCR Master Mix with UDG	Mixture

3.2 Composition

Product identifier type in accordance with Article 18(2) of Regulation (EC) No 1272/2008	Proportion	Identifiers	EC Number
Fast Ligation Buffer			
Dithiothreitol	0.01 to 0.5	EC: 248-531-9 CAS: 27565-41-9	Eye Irrit. 2, H319 Acute Tox. 4, H302 Skin Irrit. 2, H315 STOT SE 3, H335
Fast Ligase Mix			
Glycerol	50 to 75	EC: 200-289-5 CAS: 56-81-5	Eye Irrit. 2, H319
PCR Master Mix with UDG			
Glycerol	2 to 15	EC: 200-289-5 CAS: 56-81-5	Eye Irrit. 2, H319
2-Amino-2-hydroxymethyl-1,3-propanediol	1 to 5	EC: 201-064-4 CAS: 77-86-1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335

SECTION 4: First-Aid Measures

4.1 Description of First Aid Measures

Ingestion: Wash mouth with water. Move exposed person to fresh air. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs, keep the head down to avoid vomit entering the lungs. Get medical attention if adverse health effects persist or are severe.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention if adverse health effects persist or are severe. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation: Move exposed person to fresh air. Get medical attention if adverse health effects persist or are severe.

First Aider Protection: None specific

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects:

Fast Frag Buffer	Causes mild skin irritation. Causes eye irritation.
Fast First Strand Buffer	Causes mild skin irritation. Causes eye irritation.
Fast First Strand Enzyme	Causes mild skin irritation. Causes eye irritation.
Fast Second Strand Buffer with dUTP	Causes mild skin irritation. Causes eye irritation.
Fast Second Strand Enzyme	Causes mild skin irritation. Causes eye irritation.
Fast Ligation Buffer	Causes mild skin irritation. Causes eye irritation.
Fast Ligase Mix	Causes mild skin irritation. Causes eye irritation.
PCR Master Mix with UDG	Causes mild skin irritation. Causes eye irritation.

Over-exposure signs/symptoms:

Fast Frag Buffer	Skin irritation and redness. Eye pain or irritation, tears and redness.
Fast First Strand Buffer	Skin irritation and redness. Eye pain or irritation, tears and redness.
Fast First Strand Enzyme	Skin irritation and redness. Eye pain or irritation, tears and redness.
Fast Second Strand Buffer with dUT	Skin irritation and redness. Eye pain or irritation, tears and redness.
Fast Second Strand Enzyme	Skin irritation and redness. Eye pain or irritation, tears and redness.
Fast Ligation Buffer	Skin irritation and redness. Eye pain or irritation, tears and redness.
Fast Ligase Mix	Skin irritation and redness. Eye pain or irritation, tears and redness.
PCR Master Mix with UDG	Skin irritation and redness. Eye pain or irritation, tears and redness.

4.3 Indication of immediate medical attention and special treatment needed

Specific Treatments

Fast Frag Buffer	None Specific
Fast First Strand Buffer	None Specific
Fast First Strand Enzyme	None Specific
Fast Second Strand Buffer with dUT	None Specific
Fast Second Strand Enzyme	None Specific
Fast Ligation Buffer	None Specific
Fast Ligase Mix	None Specific
PCR Master Mix with UDG	None Specific

Notes to Physician

Fast Frag Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Fast First Strand Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Fast First Strand Enzyme	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Fast Second Strand Buffer with dUT	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Fast Second Strand Enzyme	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Fast Ligation Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Fast Ligase Mix	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
PCR Master Mix with UDG	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

No action shall be taken involving any personal risk or without suitable training.

SECTION 5: Fire-Fighting Measures

5.1 Extinguishing media (small and large fires)

Small Fire:	Use an extinguishing agent suitable for the surrounding fire.
Large Fire:	Use an extinguishing agent suitable for the surrounding fire.
Avoid:	None

5.2.1 **Specific Hazards:** In a fire or if heated, a pressure increase will occur and the container may burst

5.2.2 **Protective equipment and advice for fire fighters:** Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency measures

6.1.1 For non-emergency personnel:

Fast Frag Buffer	
Fast First Strand Buffer	
Fast First Strand Enzyme	No action shall be taken involving any personal risk or without suitable training.
Fast Second Strand Buffer with dUT	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 (see Section 8).
Fast Second Strand Enzyme	
Fast Ligation Buffer	
Fast Ligase Mix	

PCR Master Mix with UDG

6.1.2 **For emergency responders:**

Fast Frag Buffer

Fast First Strand Buffer

Fast First Strand Enzyme

Fast Second Strand Buffer with dUT

Fast Second Strand Enzyme

Fast Ligation Buffer

Fast Ligase Mix

PCR Master Mix with UDG

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. 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 (see Section 8).

6.2 **Environmental Precautions:**

Fast Frag Buffer

Fast First Strand Buffer

Fast First Strand Enzyme

Fast Second Strand Buffer with dUT

Fast Second Strand Enzyme

Fast Ligation Buffer

Fast Ligase Mix

PCR Master Mix with UDG

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 **Methods and materials for containment and cleaning up:**

Fast Frag Buffer

Fast First Strand Buffer

Fast First Strand Enzyme

Fast Second Strand Buffer with dUT

Fast Second Strand Enzyme

Fast Ligation Buffer

Fast Ligase Mix

PCR Master Mix with UDG

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up. Dispose of via a licensed waste disposal contractor.

SECTION 7: Handling and Storage

7.1 **Precautions for safe handling**

Fast Frag Buffer

Fast First Strand Buffer

Fast First Strand Enzyme

Fast Second Strand Buffer with dUT

Fast Second Strand Enzyme

Fast Ligation Buffer

Fast Ligase Mix

PCR Master Mix with UDG

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

7.2 **Conditions for safe storage, including any incompatibilities:**

Fast Frag Buffer

Fast First Strand Buffer

Fast First Strand Enzyme

Fast Second Strand Buffer with dUT

Fast Second Strand Enzyme

Fast Ligation Buffer

Fast Ligase Mix

PCR Master Mix with UDG

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 unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3 **Specific end use(s) recommendations:**

Fast Frag Buffer

Fast First Strand Buffer

Fast First Strand Enzyme

Fast Second Strand Buffer with dUT

Fast Second Strand Enzyme

Fast Ligation Buffer

Fast Ligase Mix

PCR Master Mix with UDG

Industrial applications, Professional applications.

SECTION 8: Exposure Controls/Personal Protection

8.1 **Control Parameters**

Product/ingredient name	Component in the Kit	Exposure limit values
Fast Frag Buffer	N/A	N/A
Fast First Strand Buffer	N/A	N/A
Fast First Strand Enzyme	N/A	N/A
Fast Second Strand Buffer with dUT	N/A	N/A
Fast Second Strand Enzyme	N/A	N/A
Fast Ligation Buffer	N/A	N/A
Fast Ligase Mix	N/A	N/A

PCR Master Mix with UDG	N/A	N/A
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8.2

Exposure controls

Appropriate engineering controls:	If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Respiratory protection:	Wear medical protective mask.
Hand protection:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products.
Eye protection:	If contact is possible, the following protection should be worn: chemical splash goggles and/or face shield.
Skin 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. Generally, it is recommended to wear a white coat, disposable head cover and disposable shoe cover for protection.
Environmental exposure controls:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and Chemical Properties

9.1 **Information on basic physical and chemical properties**

Physical State:

Fast Frag Buffer	Liquid
Fast First Strand Buffer	Liquid
Fast First Strand Enzyme	Liquid
Fast Second Strand Buffer with dUT	Liquid
Fast Second Strand Enzyme	Liquid
Fast Ligation Buffer	Liquid
Fast Ligase Mix	Liquid
PCR Master Mix with UDG	Liquid

9.2

Colour:

Fast Frag Buffer	Coulourless
Fast First Strand Buffer	Coulourless
Fast First Strand Enzyme	Coulourless
Fast Second Strand Buffer with dUT	Coulourless
Fast Second Strand Enzyme	Coulourless
Fast Ligation Buffer	Coulourless
Fast Ligase Mix	Coulourless
PCR Master Mix with UDG	Coulourless

9.3

Odour:

Fast Frag Buffer	Odourless
Fast First Strand Buffer	Odourless
Fast First Strand Enzyme	Odourless
Fast Second Strand Buffer with dUT	Odourless
Fast Second Strand Enzyme	Odourless
Fast Ligation Buffer	Odourless
Fast Ligase Mix	Odourless
PCR Master Mix with UDG	Irritating odour

9.4

Odour threshold:

Fast Frag Buffer	N/A
Fast First Strand Buffer	N/A
Fast First Strand Enzyme	N/A
Fast Second Strand Buffer with dUT	N/A
Fast Second Strand Enzyme	N/A
Fast Ligation Buffer	N/A
Fast Ligase Mix	N/A
PCR Master Mix with UDG	N/A

9.5

pH:

Fast Frag Buffer	N/A
Fast First Strand Buffer	N/A
Fast First Strand Enzyme	N/A
Fast Second Strand Buffer with dUT	N/A
Fast Second Strand Enzyme	N/A
Fast Ligation Buffer	N/A

	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A
9.6	Melting/Freezing point:	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	N/A
	Fast First Strand Enzyme	N/A
	Fast Second Strand Buffer with dUT	N/A
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A
9.7	Initial boiling point and boiling range:	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	N/A
	Fast First Strand Enzyme	N/A
	Fast Second Strand Buffer with dUT	N/A
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A
9.8	Flash point:	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	N/A
	Fast First Strand Enzyme	N/A
	Fast Second Strand Buffer with dUT	N/A
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A
9.9	Evaporation rate:	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	N/A
	Fast First Strand Enzyme	N/A
	Fast Second Strand Buffer with dUT	N/A
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A
9.1	Flammability:	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	N/A
	Fast First Strand Enzyme	N/A
	Fast Second Strand Buffer with dUT	N/A
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A
9.11	Upper/lower flammability or explosive limits:	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	N/A
	Fast First Strand Enzyme	N/A
	Fast Second Strand Buffer with dUT	N/A
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A
9.12	Vapour pressure:	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	N/A
	Fast First Strand Enzyme	N/A
	Fast Second Strand Buffer with dUT	N/A
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A

	PCR Master Mix with UDG	N/A
9.13	Vapour density	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	N/A
	Fast First Strand Enzyme	N/A
	Fast Second Strand Buffer with dUT	N/A
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A
9.14	Relative vapour density (air=1):	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	N/A
	Fast First Strand Enzyme	N/A
	Fast Second Strand Buffer with dUT	N/A
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A
9.15	Solubility:	
	Fast Frag Buffer	Soluble in water
	Fast First Strand Buffer	Soluble in water
	Fast First Strand Enzyme	Soluble in water
	Fast Second Strand Buffer with dUT	Soluble in water
	Fast Second Strand Enzyme	Soluble in water
	Fast Ligation Buffer	Soluble in water
	Fast Ligase Mix	Soluble in water
	PCR Master Mix with UDG	Soluble in water
9.16	Partition coefficient (n-octanol/water):	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	N/A
	Fast First Strand Enzyme	N/A
	Fast Second Strand Buffer with dUT	N/A
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A
9.17	Auto-ignition temperature:	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	N/A
	Fast First Strand Enzyme	N/A
	Fast Second Strand Buffer with dUT	N/A
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A
9.18	Decomposition temperature:	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	N/A
	Fast First Strand Enzyme	N/A
	Fast Second Strand Buffer with dUT	N/A
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A
9.19	Viscosity:	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	N/A
	Fast First Strand Enzyme	N/A
	Fast Second Strand Buffer with dUT	N/A
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A

SECTION 10: Stability and Reactivity

10.1 **Reactivity:**

	Fast Frag Buffer	Stable
	Fast First Strand Buffer	Stable
	Fast First Strand Enzyme	Stable
	Fast Second Strand Buffer with dUT	Stable
	Fast Second Strand Enzyme	Stable
	Fast Ligation Buffer	Stable
	Fast Ligase Mix	Stable
	PCR Master Mix with UDG	Stable
10.2	Chemical stability:	
	Fast Frag Buffer	Stable
	Fast First Strand Buffer	Stable
	Fast First Strand Enzyme	Stable
	Fast Second Strand Buffer with dUT	Stable
	Fast Second Strand Enzyme	Stable
	Fast Ligation Buffer	Stable
	Fast Ligase Mix	Stable
	PCR Master Mix with UDG	Stable
10.3	Possibility of hazardous reactions:	
	Fast Frag Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	Fast First Strand Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	Fast First Strand Enzyme	Under normal conditions of storage and use, hazardous reactions will not occur.
	Fast Second Strand Buffer with dUT	Under normal conditions of storage and use, hazardous reactions will not occur.
	Fast Second Strand Enzyme	Under normal conditions of storage and use, hazardous reactions will not occur.
	Fast Ligation Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	Fast Ligase Mix	Under normal conditions of storage and use, hazardous reactions will not occur.
	PCR Master Mix with UDG	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4	Conditions to Avoid:	
	Fast Frag Buffer	No specific data
	Fast First Strand Buffer	No specific data
	Fast First Strand Enzyme	No specific data
	Fast Second Strand Buffer with dUT	No specific data
	Fast Second Strand Enzyme	No specific data
	Fast Ligation Buffer	No specific data
	Fast Ligase Mix	No specific data
	PCR Master Mix with UDG	No specific data
10.5	Incompatible materials:	
	Fast Frag Buffer	No specific data
	Fast First Strand Buffer	No specific data
	Fast First Strand Enzyme	No specific data
	Fast Second Strand Buffer with dUT	No specific data
	Fast Second Strand Enzyme	No specific data
	Fast Ligation Buffer	No specific data
	Fast Ligase Mix	No specific data
	PCR Master Mix with UDG	No specific data
10.6	Hazardous decomposition products:	
	Fast Frag Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Fast First Strand Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Fast First Strand Enzyme	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Fast Second Strand Buffer with dUT	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Fast Second Strand Enzyme	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Fast Ligation Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Fast Ligase Mix	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
PCR Master Mix with UDG	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity:

Product/ingredient name	Result	Species	Dose	Exposure
Fast Ligation Buffer				
Dithiothreitol	LD50 Skin	Mouse	333 mg/kg	/
Fast Ligase mix				
Glycerol	LD50 Oral	Rat	12600 mg/kg	/
PCR Master Mix with UDG				
Glycerol	LD50 Oral	Rat	12600 mg/kg	/
2-Amino-2-hydroxymethyl-1,3-propanediol	LD50 Skin	Rat	>500 mg/kg	/

11.2 Irritation/Corrosion

Product/ingredient name	Result	Species	Exposure
Fast Ligation Buffer			
Dithiothreitol	N/A	N/A	N/A
Fast Ligase mix			
Glycerol	Eyes - Mild irritant	Rabbit	24 h 500 mg
	Skin - Mild irritant	Rabbit	24 h 500 mg
PCR Master Mix with UDG			
Glycerol	Eyes - Mild irritant	Rabbit	24 h 500 mg
	Skin - Mild irritant	Rabbit	24 h 500 mg
2-Amino-2-hydroxymethyl-1,3-propanediol	Skin - Moderate irritant	Rabbit	0.25
	Skin - Severe irritant	Rabbit	500 mg

11.3 Sensitiser

Fast Frag Buffer	N/A
Fast First Strand Buffer	
Fast First Strand Enzyme	
Fast Second Strand Buffer with dUTP	
Fast Second Strand Enzyme	N/A
Fast Ligation Buffer	N/A
Fast Ligase Mix	N/A
PCR Master Mix with UDG	N/A

11.4 Mutagenicity:

Fast Frag Buffer	N/A
Fast First Strand Buffer	
Fast First Strand Enzyme	
Fast Second Strand Buffer with dUTP	
Fast Second Strand Enzyme	N/A
Fast Ligation Buffer	N/A
Fast Ligase Mix	N/A
PCR Master Mix with UDG	N/A

11.5 Carcinogenicity:

Fast Frag Buffer	N/A
Fast First Strand Buffer	
Fast First Strand Enzyme	
Fast Second Strand Buffer with dUTP	
Fast Second Strand Enzyme	N/A
Fast Ligation Buffer	N/A
Fast Ligase Mix	N/A
PCR Master Mix with UDG	N/A

11.6 Reproductive toxicity:

Fast Frag Buffer	N/A
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	Fast First Strand Buffer	
	Fast First Strand Enzyme	
	Fast Second Strand Buffer with dUTP	
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A
11.7	Specific target organ toxicity (single exposure):	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	
	Fast First Strand Enzyme	
	Fast Second Strand Buffer with dUTP	
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A
11.8	Specific target organ toxicity (repeated exposure):	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	
	Fast First Strand Enzyme	
	Fast Second Strand Buffer with dUTP	
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A
11.9	Aspiration hazard:	
	Fast Frag Buffer	N/A
	Fast First Strand Buffer	
	Fast First Strand Enzyme	
	Fast Second Strand Buffer with dUTP	
	Fast Second Strand Enzyme	N/A
	Fast Ligation Buffer	N/A
	Fast Ligase Mix	N/A
	PCR Master Mix with UDG	N/A

SECTION 12: Ecological Information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Fast Ligation Buffer			
Dithiothreitol	N/A	N/A	N/A
Fast Ligase mix			
Glycerol	Acute LC50 54000 mg/L Fresh water	Fish - Oncorhynchus mykiss	96h
PCR Master Mix with UDG			
Glycerol	Acute LC50 54000 mg/L Fresh water	Fish - Oncorhynchus mykiss	96h
2-Amino-2-hydroxymethyl-1,3-propanediol	Acute EC50 >980 mg/L Fresh water	Daphnia	48h
	Acute NOEC 520 mg/L Fresh water	Daphnia	48h

12.2	Persistence and degradability:	N/A
12.3	Bioaccumulative potential:	N/A
12.4	Mobility in soil:	N/A
12.5	Results of PBT and vPvB assessment:	N/A
12.6	Other adverse effects:	N/A

SECTION 13: Disposal Considerations

13.1	Waste treatment methods:	<p>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. Empty</p>
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reasonable material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport Information

- 14.1 **Precautions for transportation :** 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.

SECTION 15: Regulatory Information

Nation	Regulation	Information
International	Chemical Weapon Convention List Schedules I, II & III Chemicals	Not listed.
International	Montreal Protocol (Annexes A, B, C, E)	Not listed.
International	Stockholm Convention on Persistent Organic Pollutants	Not listed.
International	Rotterdam Convention on Prior Inform Consent (PIC)	Not listed.
International	UNECE Aarhus Protocol on POPs and Heavy Metals	Not listed.
Europe	Regulation (EC) No 1907/2006 of the European Parliament and of the Council (REACH)	All components are not listed in the list.
United States	Toxic Substances Control Act (TSCA)	Not listed.
United States	TSCA Chemical Substance Inventory	All components are not listed in the list.
Japan	Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.	All components are not listed in the list.
Turkey	Regulation on the Export and Import of Certain Hazardous Chemicals	All components are not listed in the list.
Turkey	Regulation of Registration, Evaluation, Authorization, and Restriction of Chemicals (KDDIK)	All components are not listed in the list.
China	Inventory of the Existing Chemical Substances in China (IECSC)	All components are listed or exempted.
China	Provisions on Environmental Administration of New Chemical Substances	Not listed.
China	Regulations on Safe Management of Hazardous Chemicals in China	Not listed.
China	Catalog of Hazardous Chemicals	All components are not listed in the list.
China	Catalog of Goods Prohibited from Import	All components are not listed in the list.
China	Catalog of Goods Prohibited from Export	All components are not listed in the list.
China	China Inventory of Severely Restricted Toxic Chemicals	All components are not listed in the list.

SECTION 16: Other Information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Edinburgh Genetics Limited and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. ©2023 Edinburgh Genetics Ltd. All rights reserved.