

SAFETY DATA SHEET



Custom SureTag DNA Labeling Kit - 32 reactions, Part Number 930437

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

1.1 Product identifier

Product name	: Custom SureTag DNA Labeling Kit - 32 reactions, Part Number 930437
Part No. (Kit)	: 930437
Part No.	: Nuclease Free Water 930437-55
	Random Primers 930437-52
	5X gDNA Reaction Buffer 930437-53
	Alu I 930437-56
	Rsa I 930437-57
	10X Restriction Enzyme Buffer 930437-58
	BSA 930437-59
	10X dNTP Mix 930437-54
	Exo(-) Klenow 930437-51
	Cyanine-3-dUTP 5190-3389
	Cyanine-5-dUTP 5190-3390

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

Identified uses

Analytical reagent.	
Custom SureTag DNA Labeling Kit, 32 reactions, -20°C parts - 930437	
Nuclease Free Water	1 ml
Random Primers	0.18 ml
5X gDNA Reaction Buffer	0.345 ml
Alu I	0.025 ml (10 U/μl 25 μl)
Rsa I	0.025 ml (10 U/μl 25 μl)
10X Restriction Enzyme Buffer	0.084 ml
BSA	0.015 ml
10X dNTP Mix	0.18 ml
Exo(-) Klenow	0.039 ml
Cyanine-3-dUTP	0.078 ml
Cyanine-5-dUTP	0.078 ml

1.3 Details of the supplier of the safety data sheet

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

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

1.4 Emergency telephone number

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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition	:	Nuclease Free Water	Mono-constituent substance
		Random Primers	Mixture
		5X gDNA Reaction Buffer	Mixture
		Alu I	Mixture
		Rsa I	Mixture
		10X Restriction Enzyme Buffer	Mixture
		BSA	Mixture
		10X dNTP Mix	Mixture
		Exo(-) Klenow	Mixture
		Cyanine-3-dUTP	Mixture
		Cyanine-5-dUTP	Mixture

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

Not classified.

Ingredients of unknown toxicity	:	5X gDNA Reaction Buffer	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%
		Alu I	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60% Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%
		Rsa I	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%
		10X Restriction Enzyme Buffer	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%
		BSA	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%
		Exo(-) Klenow	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%
Ingredients of unknown ecotoxicity	:	5X gDNA Reaction Buffer	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 3.9%
		10X Restriction Enzyme Buffer	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 1.6%
		BSA	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 1%

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

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

2.2 Label elements

SECTION 2: Hazards identification

Signal word	: Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I Rsa I 10X Restriction Enzyme Buffer BSA 10X dNTP Mix Exo(-) Klenow Cyanine-3-dUTP Cyanine-5-dUTP	No signal word. No signal word. No signal word. No signal word. No signal word. No signal word. No signal word. No signal word. No signal word. No signal word. No signal word. No signal word. No signal word.
Hazard statements	: Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I Rsa I 10X Restriction Enzyme Buffer BSA 10X dNTP Mix Exo(-) Klenow Cyanine-3-dUTP Cyanine-5-dUTP	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. 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.
Precautionary statements		
Prevention	: Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I Rsa I 10X Restriction Enzyme Buffer BSA 10X dNTP Mix Exo(-) Klenow Cyanine-3-dUTP Cyanine-5-dUTP	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Response	: Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I Rsa I 10X Restriction Enzyme Buffer BSA 10X dNTP Mix Exo(-) Klenow Cyanine-3-dUTP Cyanine-5-dUTP	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Storage	: Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I Rsa I 10X Restriction Enzyme Buffer	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.

SECTION 2: Hazards identification

	BSA	Not applicable.
	10X dNTP Mix	Not applicable.
	Exo(-) Klenow	Not applicable.
	Cyanine-3-dUTP	Not applicable.
	Cyanine-5-dUTP	Not applicable.
Disposal	: Nuclease Free Water	Not applicable.
	Random Primers	Not applicable.
	5X gDNA Reaction Buffer	Not applicable.
	Alu I	Not applicable.
	Rsa I	Not applicable.
	10X Restriction Enzyme Buffer	Not applicable.
	BSA	Not applicable.
	10X dNTP Mix	Not applicable.
	Exo(-) Klenow	Not applicable.
	Cyanine-3-dUTP	Not applicable.
	Cyanine-5-dUTP	Not applicable.
Hazardous ingredients	: 5X gDNA Reaction Buffer	Not applicable.
	Rsa I	Not applicable.
	10X Restriction Enzyme Buffer	Not applicable.
Supplemental label elements	: Nuclease Free Water	Not applicable.
	Random Primers	Not applicable.
	5X gDNA Reaction Buffer	Contains 2-mercaptoethanol. May produce an allergic reaction. Safety data sheet available on request.
	Alu I	Not applicable.
	Rsa I	Safety data sheet available on request.
	10X Restriction Enzyme Buffer	Safety data sheet available on request.
	BSA	Not applicable.
	10X dNTP Mix	Not applicable.
	Exo(-) Klenow	Not applicable.
	Cyanine-3-dUTP	Not applicable.
	Cyanine-5-dUTP	Not applicable.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: Nuclease Free Water	Not applicable.
	Random Primers	Not applicable.
	5X gDNA Reaction Buffer	Not applicable.
	Alu I	Not applicable.
	Rsa I	Not applicable.
	10X Restriction Enzyme Buffer	Not applicable.
	BSA	Not applicable.
	10X dNTP Mix	Not applicable.
	Exo(-) Klenow	Not applicable.
	Cyanine-3-dUTP	Not applicable.
	Cyanine-5-dUTP	Not applicable.
Special packaging requirements		
Tactile warning of danger	: Nuclease Free Water	Not applicable.
	Random Primers	Not applicable.
	5X gDNA Reaction Buffer	Not applicable.
	Alu I	Not applicable.
	Rsa I	Not applicable.
	10X Restriction Enzyme Buffer	Not applicable.
	BSA	Not applicable.
	10X dNTP Mix	Not applicable.

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Exo(-) Klenow	Not applicable.
Cyanine-3-dUTP	Not applicable.
Cyanine-5-dUTP	Not applicable.

2.3 Other hazards

Other hazards which do not result in classification	Nuclease Free Water	None known.
	Random Primers	None known.
	5X gDNA Reaction Buffer	None known.
	Alu I	None known.
	Rsa I	None known.
	10X Restriction Enzyme Buffer	None known.
	BSA	None known.
	10X dNTP Mix	None known.
	Exo(-) Klenow	None known.
	Cyanine-3-dUTP	None known.
	Cyanine-5-dUTP	None known.

SECTION 3: Composition/information on ingredients

3.1 Substances	Nuclease Free Water	Mono-constituent substance
	Random Primers	Mixture
	5X gDNA Reaction Buffer	Mixture
	Alu I	Mixture
	Rsa I	Mixture
	10X Restriction Enzyme Buffer	Mixture
	BSA	Mixture
	10X dNTP Mix	Mixture
	Exo(-) Klenow	Mixture
	Cyanine-3-dUTP	Mixture
	Cyanine-5-dUTP	Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
Nuclease Free Water Water	REACH #: Annex IV EC: 231-791-2 CAS: 7732-18-5	100	Not classified.	[A]
5X gDNA Reaction Buffer 2-Amino-2-(hydroxymethyl) propane-1,3-diol hydrochloride	EC: 214-684-5 CAS: 1185-53-1	≤5	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
Alu I Glycerol	REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified.	[2]
Rsa I Glycerol	REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified.	[2]
Sodium chloride	EC: 231-598-3 CAS: 7647-14-5	≤3	Eye Irrit. 2, H319	[1]
10X Restriction Enzyme Buffer Sodium chloride	EC: 231-598-3 CAS: 7647-14-5	≤3	Eye Irrit. 2, H319	[1]
2-Amino-2-(hydroxymethyl)	EC: 214-684-5	≤3	Skin Irrit. 2, H315	[1]

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propane-1,3-diol hydrochloride	CAS: 1185-53-1		Eye Irrit. 2, H319 STOT SE 3, H335	
Exo(-) Klenow Glycerol	REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified.	[2]
			See Section 16 for the full text of the H statements declared above.	

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

Type

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

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	: Nuclease Free Water	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.
	Random Primers	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.
	5X gDNA Reaction 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.
	Alu I	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.
	Rsa I	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.
	10X Restriction Enzyme 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.
	BSA	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.
	10X dNTP Mix	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.
	Exo(-) Klenow	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.
	Cyanine-3-dUTP	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.
	Cyanine-5-dUTP	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.

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Inhalation	: Nuclease Free Water	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Random Primers	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	5X gDNA Reaction Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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.
	Alu I	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Rsa I	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	10X Restriction Enzyme Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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.
	BSA	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	10X dNTP Mix	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Exo(-) Klenow	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Cyanine-3-dUTP	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Cyanine-5-dUTP	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	: Nuclease Free Water	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Random Primers	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	5X gDNA Reaction Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Alu I	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Rsa I	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	10X Restriction Enzyme Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	BSA	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	10X dNTP Mix	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if

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	Exo(-) Klenow	symptoms occur. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Cyanine-3-dUTP	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Cyanine-5-dUTP	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: Nuclease Free Water	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.
	Random Primers	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.
	5X gDNA Reaction 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.
	Alu I	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.
	Rsa I	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.
	10X Restriction Enzyme 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.
	BSA	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.
	10X dNTP Mix	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.
	Exo(-) Klenow	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

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	Cyanine-3-dUTP	induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. 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.
	Cyanine-5-dUTP	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Protection of first-aiders	: Nuclease Free Water	No action shall be taken involving any personal risk or without suitable training.
	Random Primers	No action shall be taken involving any personal risk or without suitable training.
	5X gDNA Reaction Buffer	No action shall be taken involving any personal risk or without suitable training.
	Alu I	No action shall be taken involving any personal risk or without suitable training.
	Rsa I	No action shall be taken involving any personal risk or without suitable training.
	10X Restriction Enzyme Buffer	No action shall be taken involving any personal risk or without suitable training.
	BSA	No action shall be taken involving any personal risk or without suitable training.
	10X dNTP Mix	No action shall be taken involving any personal risk or without suitable training.
	Exo(-) Klenow	No action shall be taken involving any personal risk or without suitable training.
	Cyanine-3-dUTP	No action shall be taken involving any personal risk or without suitable training.
	Cyanine-5-dUTP	No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact	: Nuclease Free Water	No known significant effects or critical hazards.
	Random Primers	No known significant effects or critical hazards.
	5X gDNA Reaction Buffer	No known significant effects or critical hazards.
	Alu I	No known significant effects or critical hazards.
	Rsa I	No known significant effects or critical hazards.
	10X Restriction Enzyme Buffer	No known significant effects or critical hazards.
	BSA	No known significant effects or critical hazards.
	10X dNTP Mix	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	Cyanine-3-dUTP	No known significant effects or critical hazards.
	Cyanine-5-dUTP	No known significant effects or critical hazards.
Inhalation	: Nuclease Free Water	No known significant effects or critical hazards.
	Random Primers	No known significant effects or critical hazards.
	5X gDNA Reaction Buffer	No known significant effects or critical hazards.
	Alu I	No known significant effects or critical hazards.
	Rsa I	No known significant effects or critical hazards.
	10X Restriction Enzyme Buffer	No known significant effects or critical hazards.

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	BSA	No known significant effects or critical hazards.
	10X dNTP Mix	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	Cyanine-3-dUTP	No known significant effects or critical hazards.
	Cyanine-5-dUTP	No known significant effects or critical hazards.
Skin contact	: Nuclease Free Water	No known significant effects or critical hazards.
	Random Primers	No known significant effects or critical hazards.
	5X gDNA Reaction Buffer	No known significant effects or critical hazards.
	Alu I	No known significant effects or critical hazards.
	Rsa I	No known significant effects or critical hazards.
	10X Restriction Enzyme Buffer	No known significant effects or critical hazards.
	BSA	No known significant effects or critical hazards.
	10X dNTP Mix	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	Cyanine-3-dUTP	No known significant effects or critical hazards.
	Cyanine-5-dUTP	No known significant effects or critical hazards.
Ingestion	: Nuclease Free Water	No known significant effects or critical hazards.
	Random Primers	No known significant effects or critical hazards.
	5X gDNA Reaction Buffer	No known significant effects or critical hazards.
	Alu I	No known significant effects or critical hazards.
	Rsa I	No known significant effects or critical hazards.
	10X Restriction Enzyme Buffer	No known significant effects or critical hazards.
	BSA	No known significant effects or critical hazards.
	10X dNTP Mix	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	Cyanine-3-dUTP	No known significant effects or critical hazards.
	Cyanine-5-dUTP	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: Nuclease Free Water	No specific data.
	Random Primers	No specific data.
	5X gDNA Reaction Buffer	No specific data.
	Alu I	No specific data.
	Rsa I	No specific data.
	10X Restriction Enzyme Buffer	No specific data.
	BSA	No specific data.
	10X dNTP Mix	No specific data.
	Exo(-) Klenow	No specific data.
	Cyanine-3-dUTP	No specific data.
	Cyanine-5-dUTP	No specific data.
Inhalation	: Nuclease Free Water	No specific data.
	Random Primers	No specific data.
	5X gDNA Reaction Buffer	No specific data.
	Alu I	No specific data.
	Rsa I	No specific data.
	10X Restriction Enzyme Buffer	No specific data.
	BSA	No specific data.
	10X dNTP Mix	No specific data.
	Exo(-) Klenow	No specific data.
	Cyanine-3-dUTP	No specific data.
	Cyanine-5-dUTP	No specific data.

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Skin contact	:	Nuclease Free Water	No specific data.	
		Random Primers	No specific data.	
		5X gDNA Reaction Buffer	No specific data.	
		Alu I	No specific data.	
		Rsa I	No specific data.	
		10X Restriction Enzyme Buffer	No specific data.	
		BSA	No specific data.	
		10X dNTP Mix	No specific data.	
		Exo(-) Klenow	No specific data.	
		Cyanine-3-dUTP	No specific data.	
		Cyanine-5-dUTP	No specific data.	
	Ingestion	:	Nuclease Free Water	No specific data.
			Random Primers	No specific data.
			5X gDNA Reaction Buffer	No specific data.
		Alu I	No specific data.	
		Rsa I	No specific data.	
		10X Restriction Enzyme Buffer	No specific data.	
		BSA	No specific data.	
		10X dNTP Mix	No specific data.	
		Exo(-) Klenow	No specific data.	
		Cyanine-3-dUTP	No specific data.	
		Cyanine-5-dUTP	No specific data.	

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	:	Nuclease Free Water	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.	
		Random Primers	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.	
		5X gDNA Reaction 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.	
		Alu I	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.	
		Rsa I	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.	
		10X Restriction Enzyme 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.	
		BSA	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.	
		10X dNTP Mix	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.	
		Exo(-) Klenow	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.	
		Cyanine-3-dUTP	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.	
		Cyanine-5-dUTP	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.	
	Specific treatments	:	Nuclease Free Water	No specific treatment.
			Random Primers	No specific treatment.
			5X gDNA Reaction Buffer	No specific treatment.
		Alu I	No specific treatment.	
		Rsa I	No specific treatment.	
		10X Restriction Enzyme Buffer	No specific treatment.	
		BSA	No specific treatment.	

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10X dNTP Mix	No specific treatment.
Exo(-) Klenow	No specific treatment.
Cyanine-3-dUTP	No specific treatment.
Cyanine-5-dUTP	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	: Nuclease Free Water	Use an extinguishing agent suitable for the surrounding fire.	
	Random Primers	Use an extinguishing agent suitable for the surrounding fire.	
	5X gDNA Reaction Buffer	Use an extinguishing agent suitable for the surrounding fire.	
	Alu I	Use an extinguishing agent suitable for the surrounding fire.	
	Rsa I	Use an extinguishing agent suitable for the surrounding fire.	
	10X Restriction Enzyme Buffer	Use an extinguishing agent suitable for the surrounding fire.	
	BSA	Use an extinguishing agent suitable for the surrounding fire.	
	10X dNTP Mix	Use an extinguishing agent suitable for the surrounding fire.	
	Exo(-) Klenow	Use an extinguishing agent suitable for the surrounding fire.	
	Cyanine-3-dUTP	Use an extinguishing agent suitable for the surrounding fire.	
	Cyanine-5-dUTP	Use an extinguishing agent suitable for the surrounding fire.	
	Unsuitable extinguishing media	: Nuclease Free Water	None known.
		Random Primers	None known.
5X gDNA Reaction Buffer		None known.	
Alu I		None known.	
Rsa I		None known.	
10X Restriction Enzyme Buffer		None known.	
BSA		None known.	
10X dNTP Mix		None known.	
Exo(-) Klenow		None known.	
Cyanine-3-dUTP		None known.	
Cyanine-5-dUTP		None known.	

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	: Nuclease Free Water	In a fire or if heated, a pressure increase will occur and the container may burst.
	Random Primers	In a fire or if heated, a pressure increase will occur and the container may burst.
	5X gDNA Reaction Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	Alu I	In a fire or if heated, a pressure increase will occur and the container may burst.
	Rsa I	In a fire or if heated, a pressure increase will occur and the container may burst.
	10X Restriction Enzyme Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	BSA	In a fire or if heated, a pressure increase will occur and the container may burst.
	10X dNTP Mix	In a fire or if heated, a pressure increase will occur and the container may burst.
	Exo(-) Klenow	In a fire or if heated, a pressure increase will occur and the container may burst.
	Cyanine-3-dUTP	In a fire or if heated, a pressure increase will occur and the container may burst.
	Cyanine-5-dUTP	In a fire or if heated, a pressure increase will occur and the container may burst.

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SECTION 5: Firefighting measures

Hazardous combustion products	: Nuclease Free Water Random Primers 5X gDNA Reaction Buffer	No specific data. No specific data. Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds
	Alu I	Decomposition products may include the following materials: carbon dioxide carbon monoxide metal oxide/oxides
	Rsa I	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
	10X Restriction Enzyme Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides
	BSA	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	10X dNTP Mix Exo(-) Klenow	No specific data. Decomposition products may include the following materials: carbon dioxide carbon monoxide
	Cyanine-3-dUTP Cyanine-5-dUTP	No specific data. No specific data.

5.3 Advice for firefighters

Special precautions for fire-fighters	: Nuclease Free Water	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.
	Random Primers	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 gDNA Reaction 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.
	Alu I	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.
	Rsa I	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.
	10X Restriction Enzyme 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.
	BSA	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.
	10X dNTP Mix	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.
	Exo(-) Klenow	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be

SECTION 5: Firefighting measures

Special protective equipment for fire-fighters

Cyanine-3-dUTP		taken involving any personal risk or without suitable training. 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.
Cyanine-5-dUTP		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.
: Nuclease Free Water		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Random Primers		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
5X gDNA Reaction Buffer		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Alu I		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Rsa I		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
10X Restriction Enzyme Buffer		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
BSA		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
10X dNTP Mix		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Exo(-) Klenow		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Cyanine-3-dUTP		Fire-fighters should wear appropriate protective equipment

SECTION 5: Firefighting measures

Cyanine-5-dUTP

and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: Nuclease Free Water

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.

Random Primers

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.

5X gDNA Reaction 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.

Alu I

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.

Rsa I

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.

10X Restriction Enzyme 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.

BSA

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.

10X dNTP Mix

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.

Exo(-) Klenow

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.

Cyanine-3-dUTP

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

SECTION 6: Accidental release measures

		Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	Cyanine-5-dUTP	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
For emergency responders	: Nuclease Free Water	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".
	Random Primers	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 gDNA Reaction 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".
	Alu I	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".
	Rsa I	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".
	10X Restriction Enzyme 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".
	BSA	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".
	10X dNTP Mix	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".
	Exo(-) Klenow	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".
	Cyanine-3-dUTP	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".
	Cyanine-5-dUTP	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	6.2 Environmental precautions	: Nuclease Free Water
Random Primers		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).

SECTION 6: Accidental release measures

5X gDNA Reaction 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).
Alu I	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).
Rsa I	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).
10X Restriction Enzyme 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).
BSA	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).
10X dNTP Mix	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).
Exo(-) Klenow	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).
Cyanine-3-dUTP	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).
Cyanine-5-dUTP	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Nuclease Free Water	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.
Random Primers	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 gDNA Reaction 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.
Alu I	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.
Rsa I	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

SECTION 6: Accidental release measures

	place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
10X Restriction Enzyme 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.
BSA	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.
10X dNTP Mix	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.
Exo(-) Klenow	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.
Cyanine-3-dUTP	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.
Cyanine-5-dUTP	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures	: Nuclease Free Water	Put on appropriate personal protective equipment (see Section 8).
	Random Primers	Put on appropriate personal protective equipment (see Section 8).
	5X gDNA Reaction Buffer	Put on appropriate personal protective equipment (see Section 8).
	Alu I	Put on appropriate personal protective equipment (see Section 8).
	Rsa I	Put on appropriate personal protective equipment (see Section 8).
	10X Restriction Enzyme Buffer	Put on appropriate personal protective equipment (see Section 8).
	BSA	Put on appropriate personal protective equipment (see Section 8).
	10X dNTP Mix	Put on appropriate personal protective equipment (see Section 8).
	Exo(-) Klenow	Put on appropriate personal protective equipment (see Section 8).
	Cyanine-3-dUTP	Put on appropriate personal protective equipment (see Section 8).
	Cyanine-5-dUTP	Put on appropriate personal protective equipment (see Section 8).

SECTION 7: Handling and storage

Advice on general occupational hygiene

: Nuclease Free Water	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.
Random Primers	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.
5X gDNA Reaction Buffer	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Alu I	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.
Rsa I	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.
10X Restriction Enzyme Buffer	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
BSA	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.
10X dNTP Mix	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.
Exo(-) Klenow	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.
Cyanine-3-dUTP	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.
Cyanine-5-dUTP	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.

SECTION 7: Handling and storage

Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage

: Nuclease Free Water

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Random Primers

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

5X gDNA Reaction Buffer

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Alu I

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Rsa I

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

10X Restriction Enzyme 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

SECTION 7: Handling and storage

	been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
BSA	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
10X dNTP Mix	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Exo(-) Klenow	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Cyanine-3-dUTP	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Cyanine-5-dUTP	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

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SECTION 7: Handling and storage

Recommendations	:	Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I Rsa I 10X Restriction Enzyme Buffer BSA 10X dNTP Mix Exo(-) Klenow Cyanine-3-dUTP Cyanine-5-dUTP	Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications.
Industrial sector specific solutions	:	Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I Rsa I 10X Restriction Enzyme Buffer BSA 10X dNTP Mix Exo(-) Klenow Cyanine-3-dUTP Cyanine-5-dUTP	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Alu I Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist
Rsa I Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist
Exo(-) Klenow Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist

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

DNELs/DMELs

No DNELs/DMELs available.

PNECs

Date of issue/Date of revision : 17/01/2018

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SECTION 8: Exposure controls/personal protection

No PNECs available

8.2 Exposure controls

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

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: Nuclease Free Water	Liquid.
	Random Primers	Liquid.
	5X gDNA Reaction Buffer	Liquid.
	Alu I	Liquid.
	Rsa I	Liquid.
	10X Restriction Enzyme Buffer	Liquid.
	BSA	Liquid.
	10X dNTP Mix	Liquid.
	Exo(-) Klenow	Liquid.
	Cyanine-3-dUTP	Liquid.
	Cyanine-5-dUTP	Liquid.

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SECTION 9: Physical and chemical properties

Colour	:	Nuclease Free Water	Colourless.	
		Random Primers	Not available.	
		5X gDNA Reaction Buffer	Not available.	
		Alu I	Not available.	
		Rsa I	Not available.	
		10X Restriction Enzyme Buffer	Not available.	
		BSA	Not available.	
		10X dNTP Mix	Not available.	
		Exo(-) Klenow	Not available.	
		Cyanine-3-dUTP	Not available.	
		Cyanine-5-dUTP	Not available.	
	Odour	:	Nuclease Free Water	Odourless.
			Random Primers	Not available.
			5X gDNA Reaction Buffer	Not available.
		Alu I	Not available.	
		Rsa I	Not available.	
		10X Restriction Enzyme Buffer	Not available.	
		BSA	Not available.	
		10X dNTP Mix	Not available.	
		Exo(-) Klenow	Not available.	
		Cyanine-3-dUTP	Not available.	
		Cyanine-5-dUTP	Not available.	
Odour threshold		:	Nuclease Free Water	Not available.
			Random Primers	Not available.
			5X gDNA Reaction Buffer	Not available.
		Alu I	Not available.	
		Rsa I	Not available.	
		10X Restriction Enzyme Buffer	Not available.	
		BSA	Not available.	
		10X dNTP Mix	Not available.	
		Exo(-) Klenow	Not available.	
		Cyanine-3-dUTP	Not available.	
		Cyanine-5-dUTP	Not available.	
	pH	:	Nuclease Free Water	7
			Random Primers	8
			5X gDNA Reaction Buffer	7.5
		Alu I	7.4	
		Rsa I	7.4	
		10X Restriction Enzyme Buffer	7.9	
		BSA	Not available.	
		10X dNTP Mix	8	
		Exo(-) Klenow	7.5	
		Cyanine-3-dUTP	Not available.	
		Cyanine-5-dUTP	Not available.	
Melting point/freezing point		:	Nuclease Free Water	0°C
			Random Primers	0°C
			5X gDNA Reaction Buffer	0°C
		Alu I	Not available.	
		Rsa I	Not available.	
		10X Restriction Enzyme Buffer	Not available.	

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SECTION 9: Physical and chemical properties

	BSA	0°C
	10X dNTP Mix	0°C
	Exo(-) Klenow	Not available.
	Cyanine-3-dUTP	0°C
	Cyanine-5-dUTP	0°C
Initial boiling point and boiling range	: Nuclease Free Water	100°C
	Random Primers	100°C
	5X gDNA Reaction Buffer	100°C
	Alu I	Not available.
	Rsa I	Not available.
	10X Restriction Enzyme Buffer	Not available.
	BSA	100°C
	10X dNTP Mix	100°C
	Exo(-) Klenow	Not available.
	Cyanine-3-dUTP	100°C
	Cyanine-5-dUTP	100°C
Flash point	: Nuclease Free Water	Not applicable.
	Random Primers	Not available.
	5X gDNA Reaction Buffer	Not available.
	Alu I	Not available.
	Rsa I	Not available.
	10X Restriction Enzyme Buffer	Not available.
	BSA	Not available.
	10X dNTP Mix	Not available.
	Exo(-) Klenow	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
Evaporation rate	: Nuclease Free Water	Not available.
	Random Primers	Not available.
	5X gDNA Reaction Buffer	Not available.
	Alu I	Not available.
	Rsa I	Not available.
	10X Restriction Enzyme Buffer	Not available.
	BSA	Not available.
	10X dNTP Mix	Not available.
	Exo(-) Klenow	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
Flammability (solid, gas)	: Nuclease Free Water	Not applicable.
	Random Primers	Not applicable.
	5X gDNA Reaction Buffer	Not applicable.
	Alu I	Not applicable.
	Rsa I	Not applicable.
	10X Restriction Enzyme Buffer	Not applicable.
	BSA	Not applicable.
	10X dNTP Mix	Not applicable.
	Exo(-) Klenow	Not applicable.
	Cyanine-3-dUTP	Not applicable.
	Cyanine-5-dUTP	Not applicable.

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SECTION 9: Physical and chemical properties

Upper/lower flammability or explosive limits	:	Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I Rsa I 10X Restriction Enzyme Buffer BSA 10X dNTP Mix Exo(-) Klenow Cyanine-3-dUTP Cyanine-5-dUTP	Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.
Vapour pressure	:	Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I Rsa I 10X Restriction Enzyme Buffer BSA 10X dNTP Mix Exo(-) Klenow Cyanine-3-dUTP Cyanine-5-dUTP	3.2 kPa [room temperature] Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.
Vapour density	:	Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I Rsa I 10X Restriction Enzyme Buffer BSA 10X dNTP Mix Exo(-) Klenow Cyanine-3-dUTP Cyanine-5-dUTP	0.62 [Air = 1] Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.
Relative density	:	Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I Rsa I 10X Restriction Enzyme Buffer BSA 10X dNTP Mix Exo(-) Klenow Cyanine-3-dUTP Cyanine-5-dUTP	1 Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.
Solubility(ies)	:	Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I	Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water.

SECTION 9: Physical and chemical properties

	Rsa I	Soluble in the following materials: cold water and hot water.
	10X Restriction Enzyme Buffer	Easily soluble in the following materials: cold water and hot water.
	BSA	Easily soluble in the following materials: cold water and hot water.
	10X dNTP Mix	Easily soluble in the following materials: cold water and hot water.
	Exo(-) Klenow	Soluble in the following materials: cold water and hot water.
	Cyanine-3-dUTP	Easily soluble in the following materials: cold water and hot water.
	Cyanine-5-dUTP	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: Nuclease Free Water	-1.38
	Random Primers	Not available.
	5X gDNA Reaction Buffer	Not available.
	Alu I	Not available.
	Rsa I	Not available.
	10X Restriction Enzyme Buffer	Not available.
	BSA	Not available.
	10X dNTP Mix	Not available.
	Exo(-) Klenow	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
Auto-ignition temperature	: Nuclease Free Water	Not applicable.
	Random Primers	Not available.
	5X gDNA Reaction Buffer	Not available.
	Alu I	Not available.
	Rsa I	Not available.
	10X Restriction Enzyme Buffer	Not available.
	BSA	Not available.
	10X dNTP Mix	Not available.
	Exo(-) Klenow	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
Decomposition temperature	: Nuclease Free Water	Not available.
	Random Primers	Not available.
	5X gDNA Reaction Buffer	Not available.
	Alu I	Not available.
	Rsa I	Not available.
	10X Restriction Enzyme Buffer	Not available.
	BSA	Not available.
	10X dNTP Mix	Not available.
	Exo(-) Klenow	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
Viscosity	: Nuclease Free Water	Not available.
	Random Primers	Not available.
	5X gDNA Reaction Buffer	Not available.
	Alu I	Not available.
	Rsa I	Not available.
	10X Restriction	Not available.

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SECTION 9: Physical and chemical properties

	Enzyme Buffer	
	BSA	Not available.
	10X dNTP Mix	Not available.
	Exo(-) Klenow	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
Explosive properties	: Nuclease Free Water	Not available.
	Random Primers	Not available.
	5X gDNA Reaction Buffer	Not available.
	Alu I	Not available.
	Rsa I	Not available.
	10X Restriction Enzyme Buffer	Not available.
	BSA	Not available.
	10X dNTP Mix	Not available.
	Exo(-) Klenow	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
Oxidising properties	: Nuclease Free Water	Not applicable.
	Random Primers	Not available.
	5X gDNA Reaction Buffer	Not available.
	Alu I	Not available.
	Rsa I	Not available.
	10X Restriction Enzyme Buffer	Not available.
	BSA	Not available.
	10X dNTP Mix	Not available.
	Exo(-) Klenow	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: Nuclease Free Water	No specific test data related to reactivity available for this product or its ingredients.
	Random Primers	No specific test data related to reactivity available for this product or its ingredients.
	5X gDNA Reaction Buffer	No specific test data related to reactivity available for this product or its ingredients.
	Alu I	No specific test data related to reactivity available for this product or its ingredients.
	Rsa I	No specific test data related to reactivity available for this product or its ingredients.
	10X Restriction Enzyme Buffer	No specific test data related to reactivity available for this product or its ingredients.
	BSA	No specific test data related to reactivity available for this product or its ingredients.
	10X dNTP Mix	No specific test data related to reactivity available for this product or its ingredients.
	Exo(-) Klenow	No specific test data related to reactivity available for this product or its ingredients.
	Cyanine-3-dUTP	No specific test data related to reactivity available for this product or its ingredients.
	Cyanine-5-dUTP	No specific test data related to reactivity available for this product or its ingredients.

SECTION 10: Stability and reactivity

10.2 Chemical stability	: Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I Rsa I 10X Restriction Enzyme Buffer BSA 10X dNTP Mix Exo(-) Klenow Cyanine-3-dUTP Cyanine-5-dUTP	The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable.
10.3 Possibility of hazardous reactions	: Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I Rsa I 10X Restriction Enzyme Buffer BSA 10X dNTP Mix Exo(-) Klenow Cyanine-3-dUTP Cyanine-5-dUTP	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I Rsa I 10X Restriction Enzyme Buffer BSA 10X dNTP Mix Exo(-) Klenow Cyanine-3-dUTP Cyanine-5-dUTP	No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data.
10.5 Incompatible materials	: Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Alu I Rsa I 10X Restriction Enzyme	May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials.

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SECTION 10: Stability and reactivity

Buffer	May react or be incompatible with oxidising materials.
BSA	May react or be incompatible with oxidising materials.
10X dNTP Mix	May react or be incompatible with oxidising materials.
Exo(-) Klenow	May react or be incompatible with oxidising materials.
Cyanine-3-dUTP	May react or be incompatible with oxidising materials.
Cyanine-5-dUTP	May react or be incompatible with oxidising materials.

10.6 Hazardous decomposition products

: Nuclease Free Water	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Random Primers	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
5X gDNA Reaction Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Alu I	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Rsa I	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
10X Restriction Enzyme Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
BSA	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
10X dNTP Mix	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Exo(-) Klenow	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Cyanine-3-dUTP	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Cyanine-5-dUTP	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
Rsa I Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
10X Restriction Enzyme Buffer Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

Acute toxicity estimates

Route	ATE value
5X gDNA Reaction Buffer Oral Dermal Inhalation (vapours)	61000 mg/kg 50000 mg/kg 500 mg/l

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Rsa I Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
10X Restriction Enzyme					

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SECTION 11: Toxicological information

Buffer	Effects	Species	Route	Dose	Duration
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitiser

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
5X gDNA Reaction Buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation
10X Restriction Enzyme Buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	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

Nuclease Free Water	Not available.
Random Primers	Not available.
5X gDNA Reaction Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
Alu I	Routes of entry anticipated: Oral, Dermal, Inhalation.
Rsa I	Routes of entry anticipated: Oral, Dermal, Inhalation.
10X Restriction Enzyme Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
BSA	Not available.
10X dNTP Mix	Not available.
Exo(-) Klenow	Routes of entry anticipated: Oral, Dermal, Inhalation.
Cyanine-3-dUTP	Not available.
Cyanine-5-dUTP	Not available.

Potential acute health effects

Inhalation

Nuclease Free Water	No known significant effects or critical hazards.
Random Primers	No known significant effects or critical hazards.
5X gDNA Reaction Buffer	No known significant effects or critical hazards.
Alu I	No known significant effects or critical hazards.
Rsa I	No known significant effects or critical hazards.
10X Restriction Enzyme Buffer	No known significant effects or critical hazards.
BSA	No known significant effects or critical hazards.
10X dNTP Mix	No known significant effects or critical hazards.
Exo(-) Klenow	No known significant effects or critical hazards.
Cyanine-3-dUTP	No known significant effects or critical hazards.
Cyanine-5-dUTP	No known significant effects or critical hazards.

Ingestion

Nuclease Free Water	No known significant effects or critical hazards.
Random Primers	No known significant effects or critical hazards.
5X gDNA Reaction Buffer	No known significant effects or critical hazards.
Alu I	No known significant effects or critical hazards.
Rsa I	No known significant effects or critical hazards.
10X Restriction Enzyme	No known significant effects or critical hazards.

SECTION 11: Toxicological information

	Buffer	
	BSA	No known significant effects or critical hazards.
	10X dNTP Mix	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	Cyanine-3-dUTP	No known significant effects or critical hazards.
	Cyanine-5-dUTP	No known significant effects or critical hazards.
Skin contact	: Nuclease Free Water	No known significant effects or critical hazards.
	Random Primers	No known significant effects or critical hazards.
	5X gDNA Reaction	No known significant effects or critical hazards.
	Buffer	
	Alu I	No known significant effects or critical hazards.
	Rsa I	No known significant effects or critical hazards.
	10X Restriction Enzyme	No known significant effects or critical hazards.
	Buffer	
	BSA	No known significant effects or critical hazards.
	10X dNTP Mix	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	Cyanine-3-dUTP	No known significant effects or critical hazards.
	Cyanine-5-dUTP	No known significant effects or critical hazards.
Eye contact	: Nuclease Free Water	No known significant effects or critical hazards.
	Random Primers	No known significant effects or critical hazards.
	5X gDNA Reaction	No known significant effects or critical hazards.
	Buffer	
	Alu I	No known significant effects or critical hazards.
	Rsa I	No known significant effects or critical hazards.
	10X Restriction Enzyme	No known significant effects or critical hazards.
	Buffer	
	BSA	No known significant effects or critical hazards.
	10X dNTP Mix	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	Cyanine-3-dUTP	No known significant effects or critical hazards.
	Cyanine-5-dUTP	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	: Nuclease Free Water	No specific data.
	Random Primers	No specific data.
	5X gDNA Reaction	No specific data.
	Buffer	
	Alu I	No specific data.
	Rsa I	No specific data.
	10X Restriction Enzyme	No specific data.
	Buffer	
	BSA	No specific data.
	10X dNTP Mix	No specific data.
	Exo(-) Klenow	No specific data.
	Cyanine-3-dUTP	No specific data.
	Cyanine-5-dUTP	No specific data.
Ingestion	: Nuclease Free Water	No specific data.
	Random Primers	No specific data.
	5X gDNA Reaction	No specific data.
	Buffer	
	Alu I	No specific data.
	Rsa I	No specific data.
	10X Restriction Enzyme	No specific data.
	Buffer	
	BSA	No specific data.
	10X dNTP Mix	No specific data.
	Exo(-) Klenow	No specific data.
	Cyanine-3-dUTP	No specific data.
	Cyanine-5-dUTP	No specific data.

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SECTION 11: Toxicological information

Skin contact	:	Nuclease Free Water	No specific data.	
		Random Primers	No specific data.	
		5X gDNA Reaction Buffer	No specific data.	
		Alu I	No specific data.	
		Rsa I	No specific data.	
		10X Restriction Enzyme Buffer	No specific data.	
		BSA	No specific data.	
		10X dNTP Mix	No specific data.	
		Exo(-) Klenow	No specific data.	
		Cyanine-3-dUTP	No specific data.	
		Cyanine-5-dUTP	No specific data.	
	Eye contact	:	Nuclease Free Water	No specific data.
			Random Primers	No specific data.
		5X gDNA Reaction Buffer	No specific data.	
		Alu I	No specific data.	
		Rsa I	No specific data.	
		10X Restriction Enzyme Buffer	No specific data.	
		BSA	No specific data.	
		10X dNTP Mix	No specific data.	
		Exo(-) Klenow	No specific data.	
		Cyanine-3-dUTP	No specific data.	
		Cyanine-5-dUTP	No specific data.	

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	:	Nuclease Free Water	No known significant effects or critical hazards.	
		Random Primers	No known significant effects or critical hazards.	
		5X gDNA Reaction Buffer	No known significant effects or critical hazards.	
		Alu I	No known significant effects or critical hazards.	
		Rsa I	No known significant effects or critical hazards.	
		10X Restriction Enzyme Buffer	No known significant effects or critical hazards.	
		BSA	No known significant effects or critical hazards.	
		10X dNTP Mix	No known significant effects or critical hazards.	
		Exo(-) Klenow	No known significant effects or critical hazards.	
		Cyanine-3-dUTP	No known significant effects or critical hazards.	
		Cyanine-5-dUTP	No known significant effects or critical hazards.	
	Carcinogenicity	:	Nuclease Free Water	No known significant effects or critical hazards.
			Random Primers	No known significant effects or critical hazards.
		5X gDNA Reaction Buffer	No known significant effects or critical hazards.	
		Alu I	No known significant effects or critical hazards.	
		Rsa I	No known significant effects or critical hazards.	
	10X Restriction Enzyme	No known significant effects or critical hazards.		

SECTION 11: Toxicological information

	Buffer	
	BSA	No known significant effects or critical hazards.
	10X dNTP Mix	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	Cyanine-3-dUTP	No known significant effects or critical hazards.
	Cyanine-5-dUTP	No known significant effects or critical hazards.
Mutagenicity	: Nuclease Free Water	No known significant effects or critical hazards.
	Random Primers	No known significant effects or critical hazards.
	5X gDNA Reaction	No known significant effects or critical hazards.
	Buffer	
	Alu I	No known significant effects or critical hazards.
	Rsa I	No known significant effects or critical hazards.
	10X Restriction Enzyme	No known significant effects or critical hazards.
	Buffer	
	BSA	No known significant effects or critical hazards.
	10X dNTP Mix	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	Cyanine-3-dUTP	No known significant effects or critical hazards.
	Cyanine-5-dUTP	No known significant effects or critical hazards.
Teratogenicity	: Nuclease Free Water	No known significant effects or critical hazards.
	Random Primers	No known significant effects or critical hazards.
	5X gDNA Reaction	No known significant effects or critical hazards.
	Buffer	
	Alu I	No known significant effects or critical hazards.
	Rsa I	No known significant effects or critical hazards.
	10X Restriction Enzyme	No known significant effects or critical hazards.
	Buffer	
	BSA	No known significant effects or critical hazards.
	10X dNTP Mix	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	Cyanine-3-dUTP	No known significant effects or critical hazards.
	Cyanine-5-dUTP	No known significant effects or critical hazards.
Developmental effects	: Nuclease Free Water	No known significant effects or critical hazards.
	Random Primers	No known significant effects or critical hazards.
	5X gDNA Reaction	No known significant effects or critical hazards.
	Buffer	
	Alu I	No known significant effects or critical hazards.
	Rsa I	No known significant effects or critical hazards.
	10X Restriction Enzyme	No known significant effects or critical hazards.
	Buffer	
	BSA	No known significant effects or critical hazards.
	10X dNTP Mix	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	Cyanine-3-dUTP	No known significant effects or critical hazards.
	Cyanine-5-dUTP	No known significant effects or critical hazards.
Fertility effects	: Nuclease Free Water	No known significant effects or critical hazards.
	Random Primers	No known significant effects or critical hazards.
	5X gDNA Reaction	No known significant effects or critical hazards.
	Buffer	
	Alu I	No known significant effects or critical hazards.
	Rsa I	No known significant effects or critical hazards.
	10X Restriction Enzyme	No known significant effects or critical hazards.
	Buffer	
	BSA	No known significant effects or critical hazards.
	10X dNTP Mix	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	Cyanine-3-dUTP	No known significant effects or critical hazards.
	Cyanine-5-dUTP	No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Rsa I Sodium chloride	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute EC50 402600 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 21 days 8 weeks
10X Restriction Enzyme Buffer Sodium chloride	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute EC50 402600 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 21 days 8 weeks

12.2 Persistence and degradability

Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Nuclease Free Water Water	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Nuclease Free Water Water	-1.38	-	low

12.4 Mobility in soil

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

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

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SECTION 12: Ecological information

vPvB : Not applicable.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Packaging

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

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

ADR/RID / IMDG / IATA : Not regulated.

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

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

SECTION 15: Regulatory information

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

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

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	Nuclease Free Water	Not applicable.
	Random Primers	Not applicable.
	5X gDNA Reaction Buffer	Not applicable.
	Alu I	Not applicable.
	Rsa I	Not applicable.
	10X Restriction Enzyme Buffer	Not applicable.
	BSA	Not applicable.
	10X dNTP Mix	Not applicable.
	Exo(-) Klenow	Not applicable.
	Cyanine-3-dUTP	Not applicable.
	Cyanine-5-dUTP	Not applicable.

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SECTION 15: Regulatory information

Other EU regulations

Ozone depleting substances (1005/2009/EU)

Not listed.

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

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	: Not determined.
Canada	: Not determined.
China	: Not determined.
Europe	: Not determined.
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	: Not determined.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: Not determined.
Viet Nam	: Not determined.

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

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms	: ATE = Acute Toxicity Estimate CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008] DNEL = Derived No Effect Level EUH statement = CLP-specific Hazard statement PNEC = Predicted No Effect Concentration RRN = REACH Registration Number
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SECTION 16: Other information

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

Classification	Justification
Not classified.	

[Full text of abbreviated H statements](#)

<p>5X gDNA Reaction Buffer H315 H319 H335</p> <p>Rsa I H319</p> <p>10X Restriction Enzyme Buffer H315 H319 H335</p>	<p>Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.</p> <p>Causes serious eye irritation.</p> <p>Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.</p>
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[Full text of classifications \[CLP/GHS\]](#)

<p>5X gDNA Reaction Buffer Eye Irrit. 2, H319 Skin Irrit. 2, H315 STOT SE 3, H335</p> <p>Rsa I Eye Irrit. 2, H319</p> <p>10X Restriction Enzyme Buffer Eye Irrit. 2, H319 Skin Irrit. 2, H315 STOT SE 3, H335</p>	<p>SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3</p> <p>SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2</p> <p>SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3</p>
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Date of issue/ Date of revision : 17/01/2018

Date of previous issue : No previous validation.

Version : 1

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