

SAFETY DATA SHEET



GenetiSure Pre-Screen Amplification and Labeling Kit, Part Number 5190-7731

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

1.1 Product identifier

Product name	: GenetiSure Pre-Screen Amplification and Labeling Kit, Part Number 5190-7731
Part No. (Kit)	: 5190-7731
Part No.	: Nuclease Free Water 5190-7760 Random Primers 5190-0441 5X gDNA Reaction Buffer 5190-3387 Exo(-) Klenow 5190-0437 10X dNTP Mix 5190-3388 Cyanine-3-dUTP 5190-3389 Cyanine-5-dUTP 5190-3390 Buffer DLB 5190-7720 DTT 5190-7721 Stop Solution 5190-7722 Amplification Reaction Buffer 5190-7723 Amplification DNA Polymerase 5190-7724 PBS 5190-7761

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

Identified uses

Analytical reagent.	
Nuclease Free Water	1.5 ml
Random Primers	0.265 ml
5X gDNA Reaction Buffer	0.55 ml
Exo(-) Klenow	0.055 ml
10X dNTP Mix	0.265 ml
Cyanine-3-dUTP	0.078 ml
Cyanine-5-dUTP	0.078 ml
Buffer DLB	<1 mg
DTT	1 ml
Stop Solution	1.8 ml
Amplification Reaction Buffer	0.7 ml
Amplification DNA Polymerase	0.048 ml
PBS	1.5 ml

1.3 Details of the supplier of the safety data sheet

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

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

1.4 Emergency telephone number

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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition	:	Nuclease Free Water	Mono-constituent substance
		Random Primers	Mixture
		5X gDNA Reaction Buffer	Mixture
		Exo(-) Klenow	Mixture
		10X dNTP Mix	Mixture
		Cyanine-3-dUTP	Mixture
		Cyanine-5-dUTP	Mixture
		Buffer DLB	Mixture
		DTT	Mixture
		Stop Solution	Mixture
		Amplification Reaction Buffer	Mixture
		Amplification DNA Polymerase	Mixture
		PBS	Mixture

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

Buffer DLB

H302	ACUTE TOXICITY (oral) - Category 4
H314	SKIN CORROSION/IRRITATION - Category 1

DTT

H302	ACUTE TOXICITY (oral) - Category 4
H315	SKIN CORROSION/IRRITATION - Category 2
H319	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
H335	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3
H412	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

Amplification Reaction Buffer

H315	SKIN CORROSION/IRRITATION - Category 2
H319	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2




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%
		Exo(-) Klenow	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%
		DTT	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 10 - 30%
			Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%
		Amplification Reaction Buffer	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10%
Ingredients of unknown ecotoxicity	:	5X gDNA Reaction Buffer	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 3.2%

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

Hazard pictograms	: Buffer DLB	
	DTT	
	Amplification Reaction Buffer	
Signal word	: Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Exo(-) Klenow 10X dNTP Mix Cyanine-3-dUTP Cyanine-5-dUTP Buffer DLB DTT Stop Solution Amplification Reaction Buffer Amplification DNA Polymerase PBS	No signal word. No signal word. No signal word. No signal word. No signal word. No signal word. No signal word. Danger Warning No signal word. Warning No signal word. No signal word. No signal word.
Hazard statements	: Nuclease Free Water Random Primers 5X gDNA Reaction Buffer Exo(-) Klenow 10X dNTP Mix Cyanine-3-dUTP Cyanine-5-dUTP Buffer DLB DTT Stop Solution Amplification Reaction Buffer Amplification DNA Polymerase PBS	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. H302 - Harmful if swallowed. H314 - Causes severe skin burns and eye damage. H302 - Harmful if swallowed. H319 - Causes serious eye irritation. H315 - Causes skin irritation. H335 - May cause respiratory irritation. H412 - Harmful to aquatic life with long lasting effects. No known significant effects or critical hazards. H319 - Causes serious eye irritation. H315 - Causes skin irritation. 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 Exo(-) Klenow 10X dNTP Mix Cyanine-3-dUTP Cyanine-5-dUTP Buffer DLB	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. P280 - Wear protective gloves. Wear protective clothing. Wear eye or face protection.

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	DTT	P280 - Wear protective gloves. Wear eye or face protection. P273 - Avoid release to the environment.
	Stop Solution	Not applicable.
	Amplification Reaction Buffer	P280 - Wear protective gloves. Wear eye or face protection.
	Amplification DNA Polymerase	P264 - Wash hands thoroughly after handling. Not applicable.
	PBS	Not applicable.
Response	: Nuclease Free Water	Not applicable.
	Random Primers	Not applicable.
	5X gDNA Reaction Buffer	Not applicable.
	Exo(-) Klenow	Not applicable.
	10X dNTP Mix	Not applicable.
	Cyanine-3-dUTP	Not applicable.
	Cyanine-5-dUTP	Not applicable.
	Buffer DLB	P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P303 + P361 + P353 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or physician. P305 + P310 - IF IN EYES: Immediately call a POISON CENTER or physician.
	DTT	P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
	Stop Solution	Not applicable.
	Amplification Reaction Buffer	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	Amplification DNA Polymerase	Not applicable.
	PBS	Not applicable.
Storage	: Nuclease Free Water	Not applicable.
	Random Primers	Not applicable.
	5X gDNA Reaction Buffer	Not applicable.
	Exo(-) Klenow	Not applicable.
	10X dNTP Mix	Not applicable.
	Cyanine-3-dUTP	Not applicable.
	Cyanine-5-dUTP	Not applicable.
	Buffer DLB	P405 - Store locked up.
	DTT	P405 - Store locked up.
	Stop Solution	Not applicable.
	Amplification Reaction Buffer	Not applicable.
	Amplification DNA Polymerase	Not applicable.
	PBS	Not applicable.
Disposal	: Nuclease Free Water	Not applicable.
	Random Primers	Not applicable.
	5X gDNA Reaction Buffer	Not applicable.
	Exo(-) Klenow	Not applicable.
	10X dNTP Mix	Not applicable.
	Cyanine-3-dUTP	Not applicable.
	Cyanine-5-dUTP	Not applicable.
	Buffer DLB	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	DTT	P501 - Dispose of contents and container in accordance

SECTION 2: Hazards identification

		with all local, regional, national and international regulations.
	Stop Solution	Not applicable.
	Amplification Reaction	Not applicable.
	Buffer	
	Amplification DNA	Not applicable.
	Polymerase	
	PBS	Not applicable.
Hazardous ingredients	: 5X gDNA Reaction Buffer	Not applicable.
	Buffer DLB	- potassium hydroxide
	DTT	- (R*,R*)-1,4-Dimercaptobutane-2,3-diol
	Amplification Reaction	Not applicable.
	Buffer	
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.
	Exo(-) Klenow	Not applicable.
	10X dNTP Mix	Not applicable.
	Cyanine-3-dUTP	Not applicable.
	Cyanine-5-dUTP	Not applicable.
	Buffer DLB	Not applicable.
	DTT	Not applicable.
	Stop Solution	Not applicable.
	Amplification Reaction	Not applicable.
	Buffer	
	Amplification DNA	Not applicable.
	Polymerase	
	PBS	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.
	Exo(-) Klenow	Not applicable.
	10X dNTP Mix	Not applicable.
	Cyanine-3-dUTP	Not applicable.
	Cyanine-5-dUTP	Not applicable.
	Buffer DLB	Not applicable.
	DTT	Not applicable.
	Stop Solution	Not applicable.
	Amplification Reaction	Not applicable.
	Buffer	
	Amplification DNA	Not applicable.
	Polymerase	
	PBS	Not applicable.
Special packaging requirements		
Tactile warning of danger	: Nuclease Free Water	Not applicable.
	Random Primers	Not applicable.
	5X gDNA Reaction Buffer	Not applicable.
	Exo(-) Klenow	Not applicable.
	10X dNTP Mix	Not applicable.
	Cyanine-3-dUTP	Not applicable.
	Cyanine-5-dUTP	Not applicable.
	Buffer DLB	Not applicable.
	DTT	Not applicable.
	Stop Solution	Not applicable.
	Amplification Reaction	Not applicable.
	Buffer	
	Amplification DNA	Not applicable.
	Polymerase	
	PBS	Not applicable.

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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.
		Exo(-) Klenow	None known.
		10X dNTP Mix	None known.
		Cyanine-3-dUTP	None known.
		Cyanine-5-dUTP	None known.
		Buffer DLB	Causes digestive tract burns.
		DTT	None known.
		Stop Solution	None known.
		Amplification Reaction Buffer	None known.
		Amplification DNA Polymerase	None known.
		PBS	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
		Exo(-) Klenow	Mixture
		10X dNTP Mix	Mixture
		Cyanine-3-dUTP	Mixture
		Cyanine-5-dUTP	Mixture
		Buffer DLB	Mixture
		DTT	Mixture
		Stop Solution	Mixture
		Amplification Reaction Buffer	Mixture
		Amplification DNA Polymerase	Mixture
		PBS	Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
Nuclease Free Water Nuclease Free 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]
Exo(-) Klenow Glycerol	REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified.	[2]
Buffer DLB Potassium hydroxide	EC: 215-181-3 CAS: 1310-58-3 Index: 019-002-00-8	≥90	Acute Tox. 4, H302 Skin Corr. 1A, H314	[1] [2]
Edetic acid	EC: 200-449-4 CAS: 60-00-4 Index: 607-429-00-8	≥25 - ≤50	Eye Irrit. 2, H319	[1]
DTT (R*,R*)-1,4-Dimercaptobutane-2, 3-diol	EC: 222-468-7 CAS: 3483-12-3	≥25 - ≤50	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319	[1]

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SECTION 3: Composition/information on ingredients

Amplification Reaction Buffer Trometamol	EC: 201-064-4 CAS: 77-86-1	≥10 - <20	STOT SE 3, H335 Aquatic Chronic 3, H412	[1]
			Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	
			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.
	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.
	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.
	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.
	Buffer DLB	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
	DTT	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
	Stop Solution	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove

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	Amplification Reaction Buffer	any contact lenses. Get medical attention if irritation occurs. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
	Amplification DNA Polymerase	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.
	PBS	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	: 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.
	Exo(-) Klenow	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.
	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.
	Buffer DLB	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. 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.
	DTT	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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	Stop Solution	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Amplification Reaction Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	Amplification DNA Polymerase	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	PBS	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.
	Exo(-) Klenow	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 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.
	Buffer DLB	Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	DTT	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	Stop Solution	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Amplification Reaction Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

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	Amplification DNA Polymerase	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	PBS	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.
	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 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.
	Cyanine-3-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.
	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.
	Buffer DLB	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt

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DTT	or waistband. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Stop Solution	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.
Amplification Reaction Buffer	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Amplification DNA Polymerase	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.
PBS	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.
Exo(-) Klenow	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.
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.
Buffer DLB	No action shall be taken involving any personal risk or

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	without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
DTT	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
Stop Solution	No action shall be taken involving any personal risk or without suitable training.
Amplification Reaction Buffer	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
Amplification DNA Polymerase	No action shall be taken involving any personal risk or without suitable training.
PBS	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.
		Exo(-) Klenow	No known significant effects or critical hazards.
		10X dNTP Mix	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.
		Buffer DLB	Causes serious eye damage.
		DTT	Causes serious eye irritation.
		Stop Solution	No known significant effects or critical hazards.
		Amplification Reaction Buffer	Causes serious eye irritation.
		Amplification DNA Polymerase	No known significant effects or critical hazards.
		PBS	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.
		Exo(-) Klenow	No known significant effects or critical hazards.
		10X dNTP Mix	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.
		Buffer DLB	No known significant effects or critical hazards.
		DTT	May cause respiratory irritation.
		Stop Solution	No known significant effects or critical hazards.
		Amplification Reaction Buffer	No known significant effects or critical hazards.
		Amplification DNA Polymerase	No known significant effects or critical hazards.
		PBS	No known significant effects or critical hazards.

SECTION 4: First aid measures

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.
		Exo(-) Klenow	No known significant effects or critical hazards.
		10X dNTP Mix	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.
		Buffer DLB	Causes severe burns.
		DTT	Causes skin irritation.
		Stop Solution	No known significant effects or critical hazards.
		Amplification Reaction Buffer	Causes skin irritation.
		Amplification DNA Polymerase	No known significant effects or critical hazards.
		PBS	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.
		Exo(-) Klenow	No known significant effects or critical hazards.
		10X dNTP Mix	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.
		Buffer DLB	Harmful if swallowed. Corrosive to the digestive tract. Causes burns.
		DTT	Harmful if swallowed.
		Stop Solution	No known significant effects or critical hazards.
		Amplification Reaction Buffer	No known significant effects or critical hazards.
		Amplification DNA Polymerase	No known significant effects or critical hazards.
		PBS	No known significant effects or critical hazards.
<u>Over-exposure signs/symptoms</u>			
Eye contact	:	Nuclease Free Water	No specific data.
		Random Primers	No specific data.
		5X gDNA Reaction Buffer	No specific data.
		Exo(-) Klenow	No specific data.
		10X dNTP Mix	No specific data.
		Cyanine-3-dUTP	No specific data.
		Cyanine-5-dUTP	No specific data.
		Buffer DLB	Adverse symptoms may include the following: pain watering redness
		DTT	Adverse symptoms may include the following: pain or irritation watering redness
		Stop Solution	No specific data.
		Amplification Reaction Buffer	Adverse symptoms may include the following: pain or irritation watering redness
		Amplification DNA Polymerase	No specific data.
		PBS	No specific data.

SECTION 4: First aid measures

Inhalation	:	Nuclease Free Water	No specific data.
		Random Primers	No specific data.
		5X gDNA Reaction Buffer	No specific data.
		Exo(-) Klenow	No specific data.
		10X dNTP Mix	No specific data.
		Cyanine-3-dUTP	No specific data.
		Cyanine-5-dUTP	No specific data.
		Buffer DLB	No specific data.
		DTT	Adverse symptoms may include the following: respiratory tract irritation coughing
		Stop Solution	No specific data.
		Amplification Reaction Buffer	No specific data.
		Amplification DNA Polymerase	No specific data.
		PBS	No specific data.
Skin contact	:	Nuclease Free Water	No specific data.
		Random Primers	No specific data.
		5X gDNA Reaction Buffer	No specific data.
		Exo(-) Klenow	No specific data.
		10X dNTP Mix	No specific data.
		Cyanine-3-dUTP	No specific data.
		Cyanine-5-dUTP	No specific data.
		Buffer DLB	Adverse symptoms may include the following: pain or irritation redness blistering may occur
		DTT	Adverse symptoms may include the following: irritation redness
		Stop Solution	No specific data.
		Amplification Reaction Buffer	Adverse symptoms may include the following: irritation redness
		Amplification DNA Polymerase	No specific data.
		PBS	No specific data.
Ingestion	:	Nuclease Free Water	No specific data.
		Random Primers	No specific data.
		5X gDNA Reaction Buffer	No specific data.
		Exo(-) Klenow	No specific data.
		10X dNTP Mix	No specific data.
		Cyanine-3-dUTP	No specific data.
		Cyanine-5-dUTP	No specific data.
		Buffer DLB	Adverse symptoms may include the following: stomach pains
		DTT	No specific data.
		Stop Solution	No specific data.
		Amplification Reaction Buffer	No specific data.
		Amplification DNA Polymerase	No specific data.
		PBS	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

SECTION 4: First aid measures

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.
		Exo(-) Klenow	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.
		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.
		Buffer DLB	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.
		DTT	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Stop Solution	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Amplification 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.
		Amplification DNA Polymerase	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		PBS	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.
		Exo(-) Klenow	No specific treatment.
		10X dNTP Mix	No specific treatment.
		Cyanine-3-dUTP	No specific treatment.
		Cyanine-5-dUTP	No specific treatment.
		Buffer DLB	No specific treatment.
		DTT	No specific treatment.
		Stop Solution	No specific treatment.
		Amplification Reaction Buffer	No specific treatment.
		Amplification DNA Polymerase	No specific treatment.
		PBS	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.
		Exo(-) Klenow	Use an extinguishing agent suitable for the surrounding fire.
		10X dNTP Mix	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.
		Buffer DLB	Use an extinguishing agent suitable for the surrounding fire.
		DTT	Use an extinguishing agent suitable for the surrounding fire.
		Stop Solution	Use an extinguishing agent suitable for the surrounding fire.
		Amplification Reaction Buffer	Use an extinguishing agent suitable for the surrounding fire.
		Amplification DNA	Use an extinguishing agent suitable for the surrounding fire.

SECTION 5: Firefighting measures

	Polymerase	
	PBS	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.
	Exo(-) Klenow	None known.
	10X dNTP Mix	None known.
	Cyanine-3-dUTP	None known.
	Cyanine-5-dUTP	None known.
	Buffer DLB	None known.
	DTT	None known.
	Stop Solution	None known.
	Amplification Reaction Buffer	None known.
	Amplification DNA	None known.
	Polymerase	
PBS	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.
	Exo(-) Klenow	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.
	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.
	Buffer DLB	No specific fire or explosion hazard.
	DTT	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
	Stop Solution	In a fire or if heated, a pressure increase will occur and the container may burst.
	Amplification Reaction Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	Amplification DNA	In a fire or if heated, a pressure increase will occur and the container may burst.
	Polymerase	
PBS	In a fire or if heated, a pressure increase will occur and the container may burst.	
Hazardous combustion products	: Nuclease Free Water	No specific data.
	Random Primers	No specific data.
	5X gDNA Reaction Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds
	Exo(-) Klenow	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	10X dNTP Mix	No specific data.
	Cyanine-3-dUTP	No specific data.
Cyanine-5-dUTP	No specific data.	

SECTION 5: Firefighting measures

Buffer DLB	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides metal oxide/oxides
DTT	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
Stop Solution	Decomposition products may include the following materials: carbon dioxide carbon monoxide
Amplification Reaction Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides
Amplification DNA Polymerase	Decomposition products may include the following materials: carbon dioxide carbon monoxide
PBS	Decomposition products may include the following materials: carbon dioxide carbon monoxide phosphorus oxides metal oxide/oxides

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.
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 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.
Cyanine-3-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.
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.
Buffer DLB	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.
DTT	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.
Stop Solution	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Amplification 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.

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Special protective equipment for fire-fighters

Amplification DNA Polymerase	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.
PBS	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.
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.
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.
Cyanine-3-dUTP	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-5-dUTP	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.
Buffer DLB	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.
DTT	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.
Stop Solution	Fire-fighters should wear appropriate protective equipment

SECTION 5: Firefighting measures

Amplification Reaction Buffer	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.
Amplification DNA Polymerase	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.
PBS	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.
	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.
	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.
	Cyanine-3-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.
	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.

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Buffer DLB	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. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
DTT	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
Stop Solution	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
Amplification 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
Amplification DNA Polymerase	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.
PBS	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.
: 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".
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".
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".
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

For emergency responders

SECTION 6: Accidental release measures

	unsuitable materials. See also the information in "For non-emergency personnel".
Buffer DLB	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".
DTT	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".
Stop Solution	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Amplification 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".
Amplification DNA Polymerase	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".
PBS	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	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).
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).
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).
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).
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).
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).
Buffer DLB	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).
DTT	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

SECTION 6: Accidental release measures

	(sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.
Stop Solution	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Amplification 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).
Amplification DNA Polymerase	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).
PBS	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.
	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.
	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.
	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.
	Buffer DLB	Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

SECTION 6: Accidental release measures

DTT	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.
Stop Solution	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Amplification 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.
Amplification DNA Polymerase	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.
PBS	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).
	Exo(-) Klenow	Put on appropriate personal protective equipment (see Section 8).
	10X dNTP Mix	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).
	Buffer DLB	Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	DTT	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made

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

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DTT	protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Stop Solution	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Amplification 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.
Amplification DNA Polymerase	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.
PBS	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage	: 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

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	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.
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.
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.
Buffer DLB	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. Store locked up. 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.
DTT	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. Store locked up. 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

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

7.3 Specific end use(s)

Recommendations

: Nuclease Free Water	Industrial applications, Professional applications.
Random Primers	Industrial applications, Professional applications.
5X gDNA Reaction Buffer	Industrial applications, Professional applications.
Exo(-) Klenow	Industrial applications, Professional applications.
10X dNTP Mix	Industrial applications, Professional applications.
Cyanine-3-dUTP	Industrial applications, Professional applications.
Cyanine-5-dUTP	Industrial applications, Professional applications.
Buffer DLB	Industrial applications, Professional applications.
DTT	Industrial applications, Professional applications.
Stop Solution	Industrial applications, Professional applications.
Amplification Reaction Buffer	Industrial applications, Professional applications.
Amplification DNA Polymerase	Industrial applications, Professional applications.
PBS	Industrial applications, Professional applications.

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Industrial sector specific solutions	Nuclease Free Water	Not applicable.
	Random Primers	Not applicable.
	5X gDNA Reaction Buffer	Not applicable.
	Exo(-) Klenow	Not applicable.
	10X dNTP Mix	Not applicable.
	Cyanine-3-dUTP	Not applicable.
	Cyanine-5-dUTP	Not applicable.
	Buffer DLB	Not applicable.
	DTT	Not applicable.
	Stop Solution	Not applicable.
	Amplification Reaction Buffer	Not applicable.
	Amplification DNA Polymerase	Not applicable.
	PBS	Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Exo(-) Klenow Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist
Buffer DLB Potassium hydroxide	EH40/2005 WELs (United Kingdom (UK), 12/2011). STEL: 2 mg/m ³ 15 minutes.

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

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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.

SECTION 8: Exposure controls/personal protection

- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: Nuclease Free Water	Liquid.	
	Random Primers	Liquid.	
	5X gDNA Reaction Buffer	Liquid.	
	Exo(-) Klenow	Liquid.	
	10X dNTP Mix	Liquid.	
	Cyanine-3-dUTP	Liquid.	
	Cyanine-5-dUTP	Liquid.	
	Buffer DLB	Solid.	
	DTT	Liquid. [Fluid.]	
	Stop Solution	Liquid.	
	Amplification Reaction Buffer	Liquid. [Fluid.]	
	Amplification DNA Polymerase	Liquid.	
	PBS	Liquid.	
	Colour	: Nuclease Free Water	Colourless.
		Random Primers	Not available.
		5X gDNA Reaction Buffer	Not available.
Exo(-) Klenow		Not available.	
10X dNTP Mix		Not available.	
Cyanine-3-dUTP		Not available.	
Cyanine-5-dUTP		Not available.	
Buffer DLB		White.	
DTT		Clear.	
Stop Solution		Not available.	
Amplification Reaction Buffer	Not available.		

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	Buffer	
	Amplification DNA	Not available.
	Polymerase	
	PBS	Not available.
Odour	: Nuclease Free Water	Odourless.
	Random Primers	Not available.
	5X gDNA Reaction	Not available.
	Buffer	
	Exo(-) Klenow	Not available.
	10X dNTP Mix	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
	Buffer DLB	Characteristic.
	DTT	Characteristic.
	Stop Solution	Not available.
	Amplification Reaction	Characteristic.
	Buffer	
	Amplification DNA	Not available.
	Polymerase	
	PBS	Not available.
Odour threshold	: Nuclease Free Water	Not available.
	Random Primers	Not available.
	5X gDNA Reaction	Not available.
	Buffer	
	Exo(-) Klenow	Not available.
	10X dNTP Mix	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
	Buffer DLB	Not available.
	DTT	Not available.
	Stop Solution	Not available.
	Amplification Reaction	Not available.
	Buffer	
	Amplification DNA	Not available.
	Polymerase	
	PBS	Not available.
pH	: Nuclease Free Water	7
	Random Primers	8
	5X gDNA Reaction	7.5
	Buffer	
	Exo(-) Klenow	7.5
	10X dNTP Mix	8
	Cyanine-3-dUTP	7.6
	Cyanine-5-dUTP	7.6
	Buffer DLB	14
	DTT	Not available.
	Stop Solution	Not available.
	Amplification Reaction	Not available.
	Buffer	
	Amplification DNA	Not available.
	Polymerase	
	PBS	Not available.
Melting point/freezing point	: Nuclease Free Water	0°C
	Random Primers	0°C
	5X gDNA Reaction	0°C
	Buffer	
	Exo(-) Klenow	Not available.
	10X dNTP Mix	0°C
	Cyanine-3-dUTP	0°C
	Cyanine-5-dUTP	0°C
	Buffer DLB	Not available.

SECTION 9: Physical and chemical properties

	DTT	Not available.
	Stop Solution	Not available.
	Amplification Reaction	Not available.
	Buffer	
	Amplification DNA	Not available.
	Polymerase	
	PBS	Not available.
Initial boiling point and boiling range	: Nuclease Free Water	100°C
	Random Primers	100°C
	5X gDNA Reaction	100°C
	Buffer	
	Exo(-) Klenow	Not available.
	10X dNTP Mix	100°C
	Cyanine-3-dUTP	100°C
	Cyanine-5-dUTP	100°C
	Buffer DLB	Not available.
	DTT	Not available.
	Stop Solution	Not available.
	Amplification Reaction	Not available.
	Buffer	
	Amplification DNA	Not available.
	Polymerase	
	PBS	Not available.
Flash point	: Nuclease Free Water	Not applicable.
	Random Primers	Not available.
	5X gDNA Reaction	Not available.
	Buffer	
	Exo(-) Klenow	Not available.
	10X dNTP Mix	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
	Buffer DLB	Not available.
	DTT	Not available.
	Stop Solution	Not available.
	Amplification Reaction	Not available.
	Buffer	
	Amplification DNA	Not available.
	Polymerase	
	PBS	Not available.
Evaporation rate	: Nuclease Free Water	Not available.
	Random Primers	Not available.
	5X gDNA Reaction	Not available.
	Buffer	
	Exo(-) Klenow	Not available.
	10X dNTP Mix	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
	Buffer DLB	Not available.
	DTT	Not available.
	Stop Solution	Not available.
	Amplification Reaction	Not available.
	Buffer	
	Amplification DNA	Not available.
	Polymerase	
	PBS	Not available.

SECTION 9: Physical and chemical properties

Flammability (solid, gas)	:	Nuclease Free Water	Not applicable.
		Random Primers	Not applicable.
		5X gDNA Reaction Buffer	Not applicable.
		Exo(-) Klenow	Not applicable.
		10X dNTP Mix	Not applicable.
		Cyanine-3-dUTP	Not applicable.
		Cyanine-5-dUTP	Not applicable.
		Buffer DLB	Not available.
		DTT	Not applicable.
		Stop Solution	Not applicable.
		Amplification Reaction Buffer	Not applicable.
		Amplification DNA Polymerase	Not applicable.
		PBS	Not applicable.
Upper/lower flammability or explosive limits	:	Nuclease Free Water	Not available.
		Random Primers	Not available.
		5X gDNA Reaction Buffer	Not available.
		Exo(-) Klenow	Not available.
		10X dNTP Mix	Not available.
		Cyanine-3-dUTP	Not available.
		Cyanine-5-dUTP	Not available.
		Buffer DLB	Not available.
		DTT	Not available.
		Stop Solution	Not available.
		Amplification Reaction Buffer	Not available.
		Amplification DNA Polymerase	Not available.
		PBS	Not available.
Vapour pressure	:	Nuclease Free Water	3.2 kPa [room temperature]
		Random Primers	Not available.
		5X gDNA Reaction Buffer	Not available.
		Exo(-) Klenow	Not available.
		10X dNTP Mix	Not available.
		Cyanine-3-dUTP	Not available.
		Cyanine-5-dUTP	Not available.
		Buffer DLB	Not available.
		DTT	Not available.
		Stop Solution	Not available.
		Amplification Reaction Buffer	Not available.
		Amplification DNA Polymerase	Not available.
		PBS	Not available.
Vapour density	:	Nuclease Free Water	0.62 [Air = 1]
		Random Primers	Not available.
		5X gDNA Reaction Buffer	Not available.
		Exo(-) Klenow	Not available.
		10X dNTP Mix	Not available.
		Cyanine-3-dUTP	Not available.
		Cyanine-5-dUTP	Not available.
		Buffer DLB	Not available.
		DTT	Not available.
		Stop Solution	Not available.
		Amplification Reaction Buffer	Not available.

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	Amplification DNA Polymerase	Not available.
	PBS	Not available.
Relative density	: Nuclease Free Water	1
	Random Primers	Not available.
	5X gDNA Reaction Buffer	Not available.
	Exo(-) Klenow	Not available.
	10X dNTP Mix	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
	Buffer DLB	Not available.
	DTT	Not available.
	Stop Solution	Not available.
	Amplification Reaction Buffer	Not available.
	Amplification DNA Polymerase	Not available.
	PBS	Not available.
Solubility(ies)	: Nuclease Free Water	Easily soluble in the following materials: cold water and hot water.
	Random Primers	Easily soluble in the following materials: cold water and hot water.
	5X gDNA Reaction Buffer	Easily soluble in the following materials: cold water and hot water.
	Exo(-) Klenow	Soluble in the following materials: cold water and hot water.
	10X dNTP Mix	Easily 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.
	Buffer DLB	Easily soluble in the following materials: cold water and hot water.
	DTT	Easily soluble in the following materials: cold water and hot water.
	Stop Solution	Not available.
	Amplification Reaction Buffer	Easily soluble in the following materials: cold water and hot water.
	Amplification DNA Polymerase	Not available.
	PBS	Not available.
Partition coefficient: n-octanol/water	: Nuclease Free Water	-1.38
	Random Primers	Not available.
	5X gDNA Reaction Buffer	Not available.
	Exo(-) Klenow	Not available.
	10X dNTP Mix	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
	Buffer DLB	Not available.
	DTT	Not available.
	Stop Solution	Not available.
	Amplification Reaction Buffer	Not available.
	Amplification DNA Polymerase	Not available.
	PBS	Not available.

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Auto-ignition temperature	: Nuclease Free Water	Not applicable.
	Random Primers	Not available.
	5X gDNA Reaction Buffer	Not available.
	Exo(-) Klenow	Not available.
	10X dNTP Mix	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
	Buffer DLB	Not available.
	DTT	Not available.
	Stop Solution	Not available.
	Amplification Reaction Buffer	Not available.
	Amplification DNA Polymerase	Not available.
	PBS	Not available.
Decomposition temperature	: Nuclease Free Water	Not available.
	Random Primers	Not available.
	5X gDNA Reaction Buffer	Not available.
	Exo(-) Klenow	Not available.
	10X dNTP Mix	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
	Buffer DLB	Not available.
	DTT	Not available.
	Stop Solution	Not available.
	Amplification Reaction Buffer	Not available.
	Amplification DNA Polymerase	Not available.
	PBS	Not available.
Viscosity	: Nuclease Free Water	Not available.
	Random Primers	Not available.
	5X gDNA Reaction Buffer	Not available.
	Exo(-) Klenow	Not available.
	10X dNTP Mix	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
	Buffer DLB	Not available.
	DTT	Not available.
	Stop Solution	Not available.
	Amplification Reaction Buffer	Not available.
	Amplification DNA Polymerase	Not available.
	PBS	Not available.
Explosive properties	: Nuclease Free Water	Not available.
	Random Primers	Not available.
	5X gDNA Reaction Buffer	Not available.
	Exo(-) Klenow	Not available.
	10X dNTP Mix	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
	Buffer DLB	Not available.
	DTT	Not available.
	Stop Solution	Not available.
	Amplification Reaction Buffer	Not available.

SECTION 9: Physical and chemical properties

Oxidising properties	Amplification DNA Polymerase	Not available.
	PBS	Not available.
	: Nuclease Free Water	Not applicable.
	Random Primers	Not available.
	5X gDNA Reaction Buffer	Not available.
	Exo(-) Klenow	Not available.
	10X dNTP Mix	Not available.
	Cyanine-3-dUTP	Not available.
	Cyanine-5-dUTP	Not available.
	Buffer DLB	Not available.
	DTT	Not available.
	Stop Solution	Not available.
	Amplification Reaction Buffer	Not available.
	Amplification DNA Polymerase	Not available.
	PBS	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.	
	Exo(-) Klenow	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.	
	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.	
	Buffer DLB	No specific test data related to reactivity available for this product or its ingredients.	
	DTT	No specific test data related to reactivity available for this product or its ingredients.	
	Stop Solution	No specific test data related to reactivity available for this product or its ingredients.	
	Amplification Reaction Buffer	No specific test data related to reactivity available for this product or its ingredients.	
	Amplification DNA Polymerase	No specific test data related to reactivity available for this product or its ingredients.	
	PBS	No specific test data related to reactivity available for this product or its ingredients.	
	10.2 Chemical stability	: Nuclease Free Water	The product is stable.
		Random Primers	The product is stable.
		5X gDNA Reaction Buffer	The product is stable.
		Exo(-) Klenow	The product is stable.
10X dNTP Mix		The product is stable.	
Cyanine-3-dUTP	The product is stable.		
Cyanine-5-dUTP	The product is stable.		
Buffer DLB	The product is stable.		
DTT	The product is stable.		

SECTION 10: Stability and reactivity

Stop Solution	The product is stable.
Amplification Reaction	The product is stable.
Buffer	
Amplification DNA	The product is stable.
Polymerase	
PBS	The product is stable.

10.3 Possibility of hazardous reactions

: Nuclease Free Water	Under normal conditions of storage and use, hazardous reactions will not occur.
Random Primers	Under normal conditions of storage and use, hazardous reactions will not occur.
5X gDNA Reaction Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
Exo(-) Klenow	Under normal conditions of storage and use, hazardous reactions will not occur.
10X dNTP Mix	Under normal conditions of storage and use, hazardous reactions will not occur.
Cyanine-3-dUTP	Under normal conditions of storage and use, hazardous reactions will not occur.
Cyanine-5-dUTP	Under normal conditions of storage and use, hazardous reactions will not occur.
Buffer DLB	Under normal conditions of storage and use, hazardous reactions will not occur.
DTT	Under normal conditions of storage and use, hazardous reactions will not occur.
Stop Solution	Under normal conditions of storage and use, hazardous reactions will not occur.
Amplification Reaction	Under normal conditions of storage and use, hazardous reactions will not occur.
Buffer	
Amplification DNA	Under normal conditions of storage and use, hazardous reactions will not occur.
Polymerase	
PBS	Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

: Nuclease Free Water	No specific data.
Random Primers	No specific data.
5X gDNA Reaction Buffer	No specific data.
Exo(-) Klenow	No specific data.
10X dNTP Mix	No specific data.
Cyanine-3-dUTP	No specific data.
Cyanine-5-dUTP	No specific data.
Buffer DLB	No specific data.
DTT	No specific data.
Stop Solution	No specific data.
Amplification Reaction	No specific data.
Buffer	
Amplification DNA	No specific data.
Polymerase	
PBS	No specific data.

10.5 Incompatible materials

: Nuclease Free Water	May react or be incompatible with oxidising materials.
Random Primers	May react or be incompatible with oxidising materials.
5X gDNA Reaction Buffer	May react or be incompatible with oxidising materials.
Exo(-) Klenow	May react or be incompatible with oxidising materials.
10X dNTP Mix	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.
Buffer DLB	May react or be incompatible with oxidising materials.
DTT	May react or be incompatible with oxidising materials.
Stop Solution	May react or be incompatible with oxidising materials.
Amplification Reaction	May react or be incompatible with oxidising materials.

SECTION 10: Stability and reactivity

Buffer	
Amplification DNA Polymerase	May react or be incompatible with oxidising materials.
PBS	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.
Exo(-) Klenow	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.
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.
Buffer DLB	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
DTT	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Stop Solution	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Amplification Reaction Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Amplification DNA Polymerase	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
PBS	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
Buffer DLB Potassium hydroxide	LD50 Oral	Rat	273 mg/kg	-
Amplification Reaction Buffer Trometamol	LD50 Dermal LD50 Oral	Rat Rat	>5000 mg/kg 5000 mg/kg	- -

Acute toxicity estimates

Route	ATE value
5X gDNA Reaction Buffer Oral Dermal Inhalation (vapours)	69714.3 mg/kg 57142.9 mg/kg 571.4 mg/l
Buffer DLB Oral	625 mg/kg
DTT Oral	2000 mg/kg

Irritation/Corrosion

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SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
Buffer DLB Potassium hydroxide	Eyes - Moderate irritant	Rabbit	-	24 hours 1 milligrams	-
	Skin - Severe irritant	Guinea pig	-	24 hours 50 milligrams	-
	Skin - Severe irritant	Rabbit	-	24 hours 50 milligrams	-
Amplification Reaction Buffer Trometamol	Skin - Moderate irritant	Rabbit	-	25 Percent	-
	Skin - Severe irritant	Rabbit	-	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
DTT (R*,R*)-1,4-Dimercaptobutane-2,3-diol	Category 3	Not applicable.	Respiratory tract irritation
Amplification Reaction Buffer Trometamol	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.
Exo(-) Klenow	Routes of entry anticipated: Oral, Dermal, Inhalation.
10X dNTP Mix	Not available.
Cyanine-3-dUTP	Not available.
Cyanine-5-dUTP	Not available.
Buffer DLB	Routes of entry anticipated: Oral, Dermal, Inhalation.
DTT	Routes of entry anticipated: Oral, Dermal, Inhalation.
Stop Solution	Not available.
Amplification Reaction Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
Amplification DNA Polymerase	Not available.
PBS	Not available.

Potential acute health effects

SECTION 11: Toxicological information

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.
		Exo(-) Klenow	No known significant effects or critical hazards.
		10X dNTP Mix	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.
		Buffer DLB	No known significant effects or critical hazards.
		DTT	May cause respiratory irritation.
		Stop Solution	No known significant effects or critical hazards.
		Amplification Reaction Buffer	No known significant effects or critical hazards.
		Amplification DNA Polymerase	No known significant effects or critical hazards.
		PBS	No known significant effects or critical hazards.
	Ingestion	:	Nuclease Free Water
		Random Primers	No known significant effects or critical hazards.
		5X gDNA Reaction Buffer	No known significant effects or critical hazards.
		Exo(-) Klenow	No known significant effects or critical hazards.
		10X dNTP Mix	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.
		Buffer DLB	Harmful if swallowed. Corrosive to the digestive tract. Causes burns.
		DTT	Harmful if swallowed.
		Stop Solution	No known significant effects or critical hazards.
		Amplification Reaction Buffer	No known significant effects or critical hazards.
		Amplification DNA Polymerase	No known significant effects or critical hazards.
		PBS	No known significant effects or critical hazards.
Skin contact		:	Nuclease Free Water
		Random Primers	No known significant effects or critical hazards.
		5X gDNA Reaction Buffer	No known significant effects or critical hazards.
		Exo(-) Klenow	No known significant effects or critical hazards.
		10X dNTP Mix	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.
		Buffer DLB	Causes severe burns.
		DTT	Causes skin irritation.
		Stop Solution	No known significant effects or critical hazards.
		Amplification Reaction Buffer	Causes skin irritation.
		Amplification DNA Polymerase	No known significant effects or critical hazards.
		PBS	No known significant effects or critical hazards.
	Eye contact	:	Nuclease Free Water
		Random Primers	No known significant effects or critical hazards.
		5X gDNA Reaction Buffer	No known significant effects or critical hazards.
		Exo(-) Klenow	No known significant effects or critical hazards.
		10X dNTP Mix	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.
		Buffer DLB	Causes serious eye damage.
		DTT	Causes serious eye irritation.
		Stop Solution	No known significant effects or critical hazards.
		Amplification Reaction Buffer	Causes serious eye irritation.
		Amplification DNA Polymerase	No known significant effects or critical hazards.
		PBS	No known significant effects or critical hazards.

SECTION 11: Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	:	Nuclease Free Water	No specific data.
		Random Primers	No specific data.
		5X gDNA Reaction Buffer	No specific data.
		Exo(-) Klenow	No specific data.
		10X dNTP Mix	No specific data.
		Cyanine-3-dUTP	No specific data.
		Cyanine-5-dUTP	No specific data.
		Buffer DLB	No specific data.
		DTT	Adverse symptoms may include the following: respiratory tract irritation coughing
		Stop Solution	No specific data.
		Amplification Reaction Buffer	No specific data.
		Amplification DNA Polymerase	No specific data.
		PBS	No specific data.
Ingestion	:	Nuclease Free Water	No specific data.
		Random Primers	No specific data.
		5X gDNA Reaction Buffer	No specific data.
		Exo(-) Klenow	No specific data.
		10X dNTP Mix	No specific data.
		Cyanine-3-dUTP	No specific data.
		Cyanine-5-dUTP	No specific data.
		Buffer DLB	Adverse symptoms may include the following: stomach pains
		DTT	No specific data.
		Stop Solution	No specific data.
		Amplification Reaction Buffer	No specific data.
		Amplification DNA Polymerase	No specific data.
		PBS	No specific data.
Skin contact	:	Nuclease Free Water	No specific data.
		Random Primers	No specific data.
		5X gDNA Reaction Buffer	No specific data.
		Exo(-) Klenow	No specific data.
		10X dNTP Mix	No specific data.
		Cyanine-3-dUTP	No specific data.
		Cyanine-5-dUTP	No specific data.
		Buffer DLB	Adverse symptoms may include the following: pain or irritation redness blistering may occur
		DTT	Adverse symptoms may include the following: irritation redness
		Stop Solution	No specific data.
		Amplification Reaction Buffer	Adverse symptoms may include the following: irritation redness
		Amplification DNA Polymerase	No specific data.
		PBS	No specific data.

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Eye contact	: Nuclease Free Water	No specific data.
	Random Primers	No specific data.
	5X gDNA Reaction Buffer	No specific data.
	Exo(-) Klenow	No specific data.
	10X dNTP Mix	No specific data.
	Cyanine-3-dUTP	No specific data.
	Cyanine-5-dUTP	No specific data.
	Buffer DLB	Adverse symptoms may include the following: pain watering redness
	DTT	Adverse symptoms may include the following: pain or irritation watering redness
	Stop Solution	No specific data.
	Amplification Reaction Buffer	Adverse symptoms may include the following: pain or irritation watering redness
	Amplification DNA Polymerase	No specific data.
	PBS	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.
	Exo(-) Klenow	No known significant effects or critical hazards.
	10X dNTP Mix	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.
	Buffer DLB	No known significant effects or critical hazards.
	DTT	No known significant effects or critical hazards.
	Stop Solution	No known significant effects or critical hazards.
	Amplification Reaction Buffer	No known significant effects or critical hazards.
	Amplification DNA Polymerase	No known significant effects or critical hazards.
	PBS	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.
	Exo(-) Klenow	No known significant effects or critical hazards.
	10X dNTP Mix	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.

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	Buffer DLB	No known significant effects or critical hazards.
	DTT	No known significant effects or critical hazards.
	Stop Solution	No known significant effects or critical hazards.
	Amplification Reaction Buffer	No known significant effects or critical hazards.
	Amplification DNA Polymerase	No known significant effects or critical hazards.
	PBS	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 Buffer	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	10X dNTP Mix	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.
	Buffer DLB	No known significant effects or critical hazards.
	DTT	No known significant effects or critical hazards.
	Stop Solution	No known significant effects or critical hazards.
	Amplification Reaction Buffer	No known significant effects or critical hazards.
	Amplification DNA Polymerase	No known significant effects or critical hazards.
	PBS	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 Buffer	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	10X dNTP Mix	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.
	Buffer DLB	No known significant effects or critical hazards.
	DTT	No known significant effects or critical hazards.
	Stop Solution	No known significant effects or critical hazards.
	Amplification Reaction Buffer	No known significant effects or critical hazards.
	Amplification DNA Polymerase	No known significant effects or critical hazards.
	PBS	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 Buffer	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	10X dNTP Mix	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.
	Buffer DLB	No known significant effects or critical hazards.
	DTT	No known significant effects or critical hazards.
	Stop Solution	No known significant effects or critical hazards.
	Amplification Reaction Buffer	No known significant effects or critical hazards.
	Amplification DNA Polymerase	No known significant effects or critical hazards.
	PBS	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 Buffer	No known significant effects or critical hazards.
	Exo(-) Klenow	No known significant effects or critical hazards.
	10X dNTP Mix	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.
	Buffer DLB	No known significant effects or critical hazards.

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SECTION 11: Toxicological information

DTT	No known significant effects or critical hazards.
Stop Solution	No known significant effects or critical hazards.
Amplification Reaction	No known significant effects or critical hazards.
Buffer	
Amplification DNA	No known significant effects or critical hazards.
Polymerase	
PBS	No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Buffer DLB Potassium hydroxide Edetic acid	Acute LC50 80 ppm Fresh water Acute EC50 113000 µg/l Fresh water	Fish - Gambusia affinis - Adult Daphnia - Daphnia magna - Neonate	96 hours 48 hours
	Acute LC50 59.8 mg/l Fresh water	Fish - Pimephales promelas	96 hours
DTT (R*,R*)-1, 4-Dimercaptobutane-2,3-diol	Acute LC50 27000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
Amplification Reaction Buffer Trometamol	Acute EC50 >980 mg/l Fresh water Acute NOEC 520 mg/l Fresh water	Daphnia Daphnia	48 hours 48 hours

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Nuclease Free Water Nuclease Free water	-	100 % - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Nuclease Free Water Nuclease Free water	-	-	Readily
Buffer DLB Potassium hydroxide Edetic acid	- - -	- - -	Readily Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Nuclease Free Water Nuclease Free water	-1.38	-	low
Buffer DLB Edetic acid	-3.86	1.8	low
Amplification Reaction Buffer Trometamol	-1.56	-	low

12.4 Mobility in soil

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

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SECTION 12: Ecological information

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

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

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

Packaging

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

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

ADR/RID / IMDG / IATA : Not regulated.

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

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

SECTION 15: Regulatory information

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

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

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

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.
	Exo(-) Klenow	Not applicable.
	10X dNTP Mix	Not applicable.
	Cyanine-3-dUTP	Not applicable.
	Cyanine-5-dUTP	Not applicable.

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SECTION 15: Regulatory information

Buffer DLB	Not applicable.
DTT	Not applicable.
Stop Solution	Not applicable.
Amplification Reaction Buffer	Not applicable.
Amplification DNA	Not applicable.
Polymerase	
PBS	Not applicable.

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

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

Classification	Justification
Buffer DLB Acute Tox. 4, H302 Skin Corr. 1, H314	Calculation method On basis of test data
DTT Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Chronic 3, H412	Calculation method Calculation method Calculation method Calculation method Calculation method
Amplification Reaction Buffer Skin Irrit. 2, H315 Eye Irrit. 2, H319	Calculation method Calculation method

Full text of abbreviated H statements

5X gDNA Reaction Buffer H315 H319 H335	Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.
Buffer DLB H302 H314 H319	Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye irritation.
DTT H302 H315 H319 H335 H412	Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. Harmful to aquatic life with long lasting effects.
Amplification Reaction Buffer H315 H319 H335	Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

Full text of classifications [CLP/GHS]

5X gDNA Reaction Buffer Eye Irrit. 2, H319 Skin Irrit. 2, H315 STOT SE 3, H335	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3
Buffer DLB Acute Tox. 4, H302 Eye Irrit. 2, H319 Skin Corr. 1, H314 Skin Corr. 1A, H314	ACUTE TOXICITY (oral) - Category 4 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 SKIN CORROSION/IRRITATION - Category 1 SKIN CORROSION/IRRITATION - Category 1A

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SECTION 16: Other information

DTT

Acute Tox. 4, H302
Aquatic Chronic 3, H412
Eye Irrit. 2, H319
Skin Irrit. 2, H315
STOT SE 3, H335

ACUTE TOXICITY (oral) - Category 4
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
SKIN CORROSION/IRRITATION - Category 2
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE
(Respiratory tract irritation) - Category 3

Amplification Reaction Buffer

Eye Irrit. 2, H319
Skin Irrit. 2, H315
STOT SE 3, H335

SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
SKIN CORROSION/IRRITATION - Category 2
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE
(Respiratory tract irritation) - Category 3

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Date of previous issue : No previous validation.

Version : 1

Notice to reader

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