

SAFETY DATA SHEET



miRNA Labeling and Hyb Kit, Part Number 5190-0456

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

False

1.1 Product identifier

Product name	:	miRNA Labeling and Hyb Kit, Part Number 5190-0456
Part No. (Kit)	:	5190-0456
Part No.	:	Nuclease Free Water 5190-0425
		Dimethyl sulfoxide 5190-0428
		10X GE Blocking Agent Lyophilized 5190-0415
		10X Calf Intestinal Phosphatase Buffer 5190-0426
		Calf Intestinal Phosphatase 5190-0427
		10 mM dNTP Mix 5190-2323
		10X T4 RNA Ligase Buffer 5190-0429
		T4 RNA Ligase 5190-0430
		Cyanine 3-Cytidine Bisphosphate 5190-0408-P
		2X Hi-RPM Hybridization Buffer 5190-0416

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

Identified uses	
Analytical chemistry. 5190-0431, 5190-0411, 5190-0408-P	
Nuclease Free Water	0.45 ml
Dimethyl sulfoxide	0.18 ml
10X GE Blocking Agent Lyophilized	125 µg
10X Calf Intestinal Phosphatase Buffer	0.09 ml
Calf Intestinal Phosphatase	0.022 ml
10 mM dNTP Mix	20 µl
10X T4 RNA Ligase Buffer	0.09 ml
T4 RNA Ligase	0.027 ml
Cyanine 3-Cytidine Bisphosphate	27 µl
2X Hi-RPM Hybridization Buffer	600 µl

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
		Dimethyl sulfoxide	Mono-constituent substance
		10X GE Blocking Agent	UVCB
		Lyophilized	
		10X Calf Intestinal	Mixture
		Phosphatase Buffer	
		Calf Intestinal	Mixture
		Phosphatase	
		10 mM dNTP Mix	Mixture
		10X T4 RNA Ligase	Mixture
		Buffer	
		T4 RNA Ligase	Mixture
		Cyanine 3-Cytidine	Mixture
		Bisphosphate	
		2X Hi-RPM Hybridization	Mixture
		Buffer	

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

H412 LONG-TERM AQUATIC HAZARD - Category 3

2X Hi-RPM Hybridization**Buffer**

H315 SKIN CORROSION/IRRITATION - Category 2
H318 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
H412 LONG-TERM AQUATIC HAZARD - Category 3

Ingredients of unknown toxicity

:	Nuclease Free Water	Not applicable.
	Dimethyl sulfoxide	Not applicable.
	10X GE Blocking Agent	Not applicable.
	Lyophilized	
	10X Calf Intestinal	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 7.9%
	Phosphatase Buffer	
	Calf Intestinal	Not applicable.
	Phosphatase	
	10 mM dNTP Mix	Not applicable.
	10X T4 RNA Ligase Buffer	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 7.9%
	T4 RNA Ligase	Not applicable.
	Cyanine 3-Cytidine	Not applicable.
	Bisphosphate	
	2X Hi-RPM Hybridization	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 9.4%
	Buffer	

Ingredients of unknown ecotoxicity

:	Nuclease Free Water	Not applicable.
	Dimethyl sulfoxide	Not applicable.
	10X GE Blocking Agent	Not applicable.
	Lyophilized	
	10X Calf Intestinal	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 7.9%
	Phosphatase Buffer	
	Calf Intestinal	Not applicable.
	Phosphatase	
	10 mM dNTP Mix	Not applicable.
	10X T4 RNA Ligase Buffer	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 9.9%
	T4 RNA Ligase	Not applicable.
	Cyanine 3-Cytidine	Not applicable.
	Bisphosphate	
	2X Hi-RPM Hybridization	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 9.4%
	Buffer	

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.

SECTION 2: Hazards identification

2.2 Label elements

Hazard pictograms

:



Signal word

: Nuclease Free Water No signal word.
 Dimethyl sulfoxide No signal word.
 10X GE Blocking Agent No signal word.
 Lyophilized
 10X Calf Intestinal No signal word.
 Phosphatase Buffer
 Calf Intestinal No signal word.
 Phosphatase
 10 mM dNTP Mix No signal word.
 10X T4 RNA Ligase No signal word.
 Buffer
 T4 RNA Ligase No signal word.
 Cyanine 3-Cytidine No signal word.
 Bisphosphate
 2X Hi-RPM Hybridization Buffer Danger

Hazard statements

: Nuclease Free Water No known significant effects or critical hazards.
 Dimethyl sulfoxide No known significant effects or critical hazards.
 10X GE Blocking Agent No known significant effects or critical hazards.
 Lyophilized
 10X Calf Intestinal No known significant effects or critical hazards.
 Phosphatase Buffer Harmful to aquatic life with long lasting effects.
 Calf Intestinal Phosphatase
 10 mM dNTP Mix No known significant effects or critical hazards.
 10X T4 RNA Ligase No known significant effects or critical hazards.
 Buffer
 T4 RNA Ligase No known significant effects or critical hazards.
 Cyanine 3-Cytidine No known significant effects or critical hazards.
 Bisphosphate
 2X Hi-RPM Hybridization Buffer **GHS05 -**
 Causes serious eye damage.
GHS07 -
 Causes skin irritation.
 Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention

: Nuclease Free Water Not applicable.
 Dimethyl sulfoxide Not applicable.
 10X GE Blocking Agent Not applicable.
 Lyophilized
 10X Calf Intestinal Not applicable.
 Phosphatase Buffer P273 - Avoid release to the environment.
 Calf Intestinal Phosphatase
 10 mM dNTP Mix Not applicable.
 10X T4 RNA Ligase Not applicable.
 Buffer
 T4 RNA Ligase Not applicable.
 Cyanine 3-Cytidine Not applicable.
 Bisphosphate
 2X Hi-RPM Hybridization Buffer P280 - Wear protective gloves. Wear eye or face protection.
 Buffer P273 - Avoid release to the environment.

SECTION 2: Hazards identification

Response	:	Nuclease Free Water	Not applicable.
		Dimethyl sulfoxide	Not applicable.
		10X GE Blocking Agent	Not applicable.
		Lyophilized	
		10X Calf Intestinal	Not applicable.
		Phosphatase Buffer	
		Calf Intestinal	Not applicable.
		Phosphatase	
		10 mM dNTP Mix	Not applicable.
		10X T4 RNA Ligase	Not applicable.
		Buffer	
		T4 RNA Ligase	Not applicable.
		Cyanine 3-Cytidine	Not applicable.
		Bisphosphate	
		2X Hi-RPM Hybridization	P305 + P351 + P310 - IF IN EYES: Rinse cautiously with
		Buffer	water for several minutes. Immediately call a POISON
			CENTER or physician.
Storage	:	Nuclease Free Water	Not applicable.
		Dimethyl sulfoxide	Not applicable.
		10X GE Blocking Agent	Not applicable.
		Lyophilized	
		10X Calf Intestinal	Not applicable.
		Phosphatase Buffer	
		Calf Intestinal	Not applicable.
		Phosphatase	
		10 mM dNTP Mix	Not applicable.
		10X T4 RNA Ligase	Not applicable.
		Buffer	
		T4 RNA Ligase	Not applicable.
		Cyanine 3-Cytidine	Not applicable.
		Bisphosphate	
		2X Hi-RPM Hybridization	Not applicable.
		Buffer	
Disposal	:	Nuclease Free Water	Not applicable.
		Dimethyl sulfoxide	Not applicable.
		10X GE Blocking Agent	Not applicable.
		Lyophilized	
		10X Calf Intestinal	Not applicable.
		Phosphatase Buffer	
		Calf Intestinal	P501 - Dispose of contents and container in accordance
		Phosphatase	with all local, regional, national and international regulations.
		10 mM dNTP Mix	Not applicable.
		10X T4 RNA Ligase	Not applicable.
		Buffer	
		T4 RNA Ligase	Not applicable.
		Cyanine 3-Cytidine	Not applicable.
		Bisphosphate	
		2X Hi-RPM Hybridization	P501 - Dispose of contents and container in accordance
		Buffer	with all local, regional, national and international regulations.
Hazardous ingredients	:	2X Hi-RPM Hybridization Buffer	
		Lithium dodecyl sulphate	
Supplemental label elements	:	Nuclease Free Water	Not applicable.
		Dimethyl sulfoxide	Not applicable.
		10X GE Blocking Agent	Not applicable.
		Lyophilized	
		10X Calf Intestinal	Safety data sheet available on request.
		Phosphatase Buffer	
		Calf Intestinal	Not applicable.
		Phosphatase	
		10 mM dNTP Mix	Not applicable.
		10X T4 RNA Ligase	Safety data sheet available on request.
		Buffer	
		T4 RNA Ligase	Not applicable.

SECTION 2: Hazards identification

	Cyanine 3-Cytidine	Not applicable.
	Bisphosphate	
	2X Hi-RPM Hybridization	Not applicable.
	Buffer	
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	Nuclease Free Water	Not applicable.
	Dimethyl sulfoxide	Not applicable.
	10X GE Blocking Agent	Not applicable.
	Lyophilized	
	10X Calf Intestinal	Not applicable.
	Phosphatase Buffer	
	Calf Intestinal	Not applicable.
	Phosphatase	
	10 mM dNTP Mix	Not applicable.
	10X T4 RNA Ligase	Not applicable.
	Buffer	
	T4 RNA Ligase	Not applicable.
	Cyanine 3-Cytidine	Not applicable.
	Bisphosphate	
2X Hi-RPM Hybridization	Not applicable.	
Buffer		

Special packaging requirements

Tactile warning of danger	Nuclease Free Water	Not applicable.
	Dimethyl sulfoxide	Not applicable.
	10X GE Blocking Agent	Not applicable.
	Lyophilized	
	10X Calf Intestinal	Not applicable.
	Phosphatase Buffer	
	Calf Intestinal	Not applicable.
	Phosphatase	
	10 mM dNTP Mix	Not applicable.
	10X T4 RNA Ligase	Not applicable.
	Buffer	
	T4 RNA Ligase	Not applicable.
	Cyanine 3-Cytidine	Not applicable.
	Bisphosphate	
2X Hi-RPM Hybridization	Not applicable.	
Buffer		

2.3 Other hazards

Other hazards which do not result in classification	Nuclease Free Water	None known.
	Dimethyl sulfoxide	None known.
	10X GE Blocking Agent	None known.
	Lyophilized	
	10X Calf Intestinal	None known.
	Phosphatase Buffer	
	Calf Intestinal	None known.
	Phosphatase	
	10 mM dNTP Mix	None known.
	10X T4 RNA Ligase	None known.
	Buffer	
	T4 RNA Ligase	None known.
	Cyanine 3-Cytidine	None known.
	Bisphosphate	
2X Hi-RPM Hybridization	None known.	
Buffer		

SECTION 3: Composition/information on ingredients

3.2 Mixtures	:	Nuclease Free Water	Mono-constituent substance
		Dimethyl sulfoxide	Mono-constituent substance
		10X GE Blocking Agent	UVCB
		Lyophilized	
		10X Calf Intestinal Phosphatase	Mixture
		Buffer	
		Calf Intestinal Phosphatase	Mixture
		10 mM dNTP Mix	Mixture
		10X T4 RNA Ligase Buffer	Mixture
		T4 RNA Ligase	Mixture
		Cyanine 3-Cytidine Bisphosphate	Mixture
		2X Hi-RPM Hybridization Buffer	Mixture

Product/ingredient name	Identifiers	%	Classification	Type
Nuclease Free Water Water	7732-18-5	100	Not classified.	[A]
Dimethyl sulfoxide Dimethyl sulfoxide	67-68-5	100	Not classified.	[A]
10X GE Blocking Agent Lyophilized DNA	-	100	Not classified.	[*]
10X Calf Intestinal Phosphatase Buffer 2-Amino-2-(hydroxymethyl) propane-1,3-diol hydrochloride	EC: 214-684-5 CAS: 1185-53-1	<10	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
Calf Intestinal Phosphatase Glycerol	EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified.	[2]
Zinc chloride	EC: 231-592-0 CAS: 7646-85-7 Index: 030-003-00-2	<1	Acute Tox. 4, H302 Skin Corr. 1B, H314 STOT SE 3, H335 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=1)	[1] [2]
10X T4 RNA Ligase Buffer 2-Amino-2-(hydroxymethyl) propane-1,3-diol hydrochloride	EC: 214-684-5 CAS: 1185-53-1	≤8	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
(R*,R*)-1,4-Dimercaptobutane-2, 3-diol	EC: 222-468-7 CAS: 3483-12-3	≤1.5	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Chronic 3, H412	[1]
T4 RNA Ligase Glycerol	EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified.	[2]
2X Hi-RPM Hybridization Buffer 4-Morpholineethanesulfonic acid, hydrate (1:1)	EC: 224-632-3 CAS: 145224-94-8	≤10	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
Lithium chloride	EC: 231-212-3 CAS: 7447-41-8	≤10	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319	[1]
Lithium dodecyl sulphate	EC: 218-058-2 CAS: 2044-56-6	≤5	Flam. Sol. 2, H228 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335	[1]
Polyoxyethylene octyl phenyl ether	CAS: 9002-93-1	≤3	Acute Tox. 4, H302	[1] [5]

SECTION 3: Composition/information on ingredients

Oxirane, 2-methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyloxy]-1-disiloxanyl]propyl] ether	CAS: 134180-76-0	≤3	Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411 Acute Tox. 4, H312 Acute Tox. 4, H332 Eye Irrit. 2, H319 Aquatic Chronic 2, H411 See Section 16 for the full text of the H statements declared above.	[1]
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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
- [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.
	Dimethyl sulfoxide	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 GE Blocking Agent Lyophilized	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	10X Calf Intestinal Phosphatase 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.
	Calf Intestinal Phosphatase	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
	10 mM 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.
	10X T4 RNA Ligase 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.
	T4 RNA Ligase	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-Cytidine Bisphosphate	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.
	2X Hi-RPM Hybridization Buffer	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.

SECTION 4: First aid measures

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.
	Dimethyl sulfoxide	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	10X GE Blocking Agent Lyophilized	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.
	10X Calf Intestinal Phosphatase 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.
	Calf Intestinal Phosphatase	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.
	10 mM dNTP Mix	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	10X T4 RNA Ligase 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.
	T4 RNA Ligase	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Cyanine 3-Cytidine Bisphosphate	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	2X Hi-RPM Hybridization Buffer	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.

SECTION 4: First aid measures

Skin contact	: Nuclease Free Water	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Dimethyl sulfoxide	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	10X GE Blocking Agent Lyophilized	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	10X Calf Intestinal Phosphatase Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Calf Intestinal Phosphatase	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	10 mM dNTP Mix	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	10X T4 RNA Ligase Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	T4 RNA Ligase	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Cyanine 3-Cytidine Bisphosphate	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	2X Hi-RPM Hybridization Buffer	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.
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.
	Dimethyl sulfoxide	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 GE Blocking Agent Lyophilized	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	10X Calf Intestinal Phosphatase 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.
	Calf Intestinal Phosphatase	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

SECTION 4: First aid measures

	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.
10 mM 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.
10X T4 RNA Ligase 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.
T4 RNA Ligase	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-Cytidine Bisphosphate	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.
2X Hi-RPM Hybridization Buffer	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders	:	Nuclease Free Water	No action shall be taken involving any personal risk or without suitable training.
		Dimethyl sulfoxide	No action shall be taken involving any personal risk or without suitable training.
		10X GE Blocking Agent Lyophilized	No action shall be taken involving any personal risk or without suitable training.
		10X Calf Intestinal Phosphatase Buffer	No action shall be taken involving any personal risk or without suitable training.
		Calf Intestinal Phosphatase	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.
		10 mM dNTP Mix	No action shall be taken involving any personal risk or without suitable training.
		10X T4 RNA Ligase Buffer	No action shall be taken involving any personal risk or without suitable training.

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T4 RNA Ligase	No action shall be taken involving any personal risk or without suitable training.
Cyanine 3-Cytidine Bisphosphate	No action shall be taken involving any personal risk or without suitable training.
2X Hi-RPM Hybridization Buffer	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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.
		Dimethyl sulfoxide	No known significant effects or critical hazards.
		10X GE Blocking Agent Lyophilized	No known significant effects or critical hazards.
		10X Calf Intestinal Phosphatase Buffer	No known significant effects or critical hazards.
		Calf Intestinal Phosphatase	No known significant effects or critical hazards.
		10 mM dNTP Mix	No known significant effects or critical hazards.
		10X T4 RNA Ligase Buffer	No known significant effects or critical hazards.
		T4 RNA Ligase	No known significant effects or critical hazards.
		Cyanine 3-Cytidine Bisphosphate	No known significant effects or critical hazards.
		2X Hi-RPM Hybridization Buffer	Causes serious eye damage.
Inhalation	:	Nuclease Free Water	No known significant effects or critical hazards.
		Dimethyl sulfoxide	No known significant effects or critical hazards.
		10X GE Blocking Agent Lyophilized	No known significant effects or critical hazards.
		10X Calf Intestinal Phosphatase Buffer	No known significant effects or critical hazards.
		Calf Intestinal Phosphatase	No known significant effects or critical hazards.
		10 mM dNTP Mix	No known significant effects or critical hazards.
		10X T4 RNA Ligase Buffer	No known significant effects or critical hazards.
		T4 RNA Ligase	No known significant effects or critical hazards.
		Cyanine 3-Cytidine Bisphosphate	No known significant effects or critical hazards.
		2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.
Skin contact	:	Nuclease Free Water	No known significant effects or critical hazards.
		Dimethyl sulfoxide	No known significant effects or critical hazards.
		10X GE Blocking Agent Lyophilized	No known significant effects or critical hazards.
		10X Calf Intestinal Phosphatase Buffer	No known significant effects or critical hazards.
		Calf Intestinal Phosphatase	No known significant effects or critical hazards.
		10 mM dNTP Mix	No known significant effects or critical hazards.
		10X T4 RNA Ligase Buffer	No known significant effects or critical hazards.
		T4 RNA Ligase	No known significant effects or critical hazards.
		Cyanine 3-Cytidine Bisphosphate	No known significant effects or critical hazards.
		2X Hi-RPM Hybridization Buffer	Causes skin irritation.

SECTION 4: First aid measures

Ingestion	:	Nuclease Free Water	No known significant effects or critical hazards.
		Dimethyl sulfoxide	No known significant effects or critical hazards.
		10X GE Blocking Agent	No known significant effects or critical hazards.
		Lyophilized	
		10X Calf Intestinal Phosphatase Buffer	No known significant effects or critical hazards.
		Calf Intestinal Phosphatase	No known significant effects or critical hazards.
		10 mM dNTP Mix	No known significant effects or critical hazards.
		10X T4 RNA Ligase Buffer	No known significant effects or critical hazards.
		T4 RNA Ligase	No known significant effects or critical hazards.
		Cyanine 3-Cytidine	No known significant effects or critical hazards.
		Bisphosphate	
		2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	Nuclease Free Water	No specific data.
		Dimethyl sulfoxide	No specific data.
		10X GE Blocking Agent	No specific data.
		Lyophilized	
		10X Calf Intestinal Phosphatase Buffer	No specific data.
		Calf Intestinal Phosphatase	No specific data.
		10 mM dNTP Mix	No specific data.
		10X T4 RNA Ligase Buffer	No specific data.
		T4 RNA Ligase	No specific data.
		Cyanine 3-Cytidine	No specific data.
		Bisphosphate	
		2X Hi-RPM Hybridization Buffer	Adverse symptoms may include the following:
			pain
			watering
		redness	

Inhalation	:	Nuclease Free Water	No specific data.
		Dimethyl sulfoxide	No specific data.
		10X GE Blocking Agent	No specific data.
		Lyophilized	
		10X Calf Intestinal Phosphatase Buffer	No specific data.
		Calf Intestinal Phosphatase	No specific data.
		10 mM dNTP Mix	No specific data.
		10X T4 RNA Ligase Buffer	No specific data.
		T4 RNA Ligase	No specific data.
		Cyanine 3-Cytidine	No specific data.
		Bisphosphate	
		2X Hi-RPM Hybridization Buffer	No specific data.

Skin contact	:	Nuclease Free Water	No specific data.
		Dimethyl sulfoxide	No specific data.
		10X GE Blocking Agent	No specific data.
		Lyophilized	
		10X Calf Intestinal Phosphatase Buffer	No specific data.
		Calf Intestinal Phosphatase	No specific data.
		10 mM dNTP Mix	No specific data.
		10X T4 RNA Ligase Buffer	No specific data.

SECTION 4: First aid measures

	T4 RNA Ligase	No specific data.
	Cyanine 3-Cytidine	No specific data.
	Bisphosphate	
	2X Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	: Nuclease Free Water	No specific data.
	Dimethyl sulfoxide	No specific data.
	10X GE Blocking Agent Lyophilized	No specific data.
	10X Calf Intestinal Phosphatase Buffer	No specific data.
	Calf Intestinal Phosphatase	No specific data.
	10 mM dNTP Mix	No specific data.
	10X T4 RNA Ligase Buffer	No specific data.
	T4 RNA Ligase	No specific data.
	Cyanine 3-Cytidine	No specific data.
	Bisphosphate	
	2X Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: stomach pains

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	: Nuclease Free Water	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Dimethyl sulfoxide	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	10X GE Blocking Agent Lyophilized	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.
	10X Calf Intestinal Phosphatase 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.
	Calf Intestinal Phosphatase	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	10 mM dNTP Mix	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	10X T4 RNA Ligase 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.
	T4 RNA Ligase	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Cyanine 3-Cytidine	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Bisphosphate	
	2X Hi-RPM Hybridization 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.

Specific treatments	: Nuclease Free Water	No specific treatment.
	Dimethyl sulfoxide	No specific treatment.
	10X GE Blocking Agent Lyophilized	No specific treatment.
	10X Calf Intestinal Phosphatase Buffer	No specific treatment.
	Calf Intestinal Phosphatase	No specific treatment.
	10 mM dNTP Mix	No specific treatment.
	10X T4 RNA Ligase Buffer	No specific treatment.
	T4 RNA Ligase	No specific treatment.

SECTION 4: First aid measures

Cyanine 3-Cytidine	No specific treatment.
Bisphosphate	
2X Hi-RPM Hybridization Buffer	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.
	Dimethyl sulfoxide	Use an extinguishing agent suitable for the surrounding fire.
	10X GE Blocking Agent Lyophilized	Use an extinguishing agent suitable for the surrounding fire.
	10X Calf Intestinal Phosphatase Buffer	Use an extinguishing agent suitable for the surrounding fire.
	Calf Intestinal Phosphatase	Use an extinguishing agent suitable for the surrounding fire.
	10 mM dNTP Mix	Use an extinguishing agent suitable for the surrounding fire.
	10X T4 RNA Ligase Buffer	Use an extinguishing agent suitable for the surrounding fire.
	T4 RNA Ligase	Use an extinguishing agent suitable for the surrounding fire.
	Cyanine 3-Cytidine Bisphosphate	Use an extinguishing agent suitable for the surrounding fire.
	2X Hi-RPM Hybridization Buffer	Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media	: Nuclease Free Water	None known.
	Dimethyl sulfoxide	None known.
	10X GE Blocking Agent Lyophilized	None known.
	10X Calf Intestinal Phosphatase Buffer	None known.
	Calf Intestinal Phosphatase	None known.
	10 mM dNTP Mix	None known.
	10X T4 RNA Ligase Buffer	None known.
	T4 RNA Ligase	None known.
	Cyanine 3-Cytidine Bisphosphate	None known.
	2X Hi-RPM Hybridization Buffer	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.
	Dimethyl sulfoxide	In a fire or if heated, a pressure increase will occur and the container may burst.
	10X GE Blocking Agent Lyophilized	No specific fire or explosion hazard.
	10X Calf Intestinal Phosphatase Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	Calf Intestinal Phosphatase	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.
	10 mM dNTP Mix	In a fire or if heated, a pressure increase will occur and the container may burst.
	10X T4 RNA Ligase Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	T4 RNA Ligase	In a fire or if heated, a pressure increase will occur and the container may burst.
	Cyanine 3-Cytidine Bisphosphate	In a fire or if heated, a pressure increase will occur and the container may burst.

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	2X Hi-RPM Hybridization Buffer	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous combustion products	: Nuclease Free Water	No specific data.
	Dimethyl sulfoxide	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	10X GE Blocking Agent Lyophilized	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
	10X Calf Intestinal Phosphatase Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds
	Calf Intestinal Phosphatase	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	10 mM dNTP Mix	No specific data.
	10X T4 RNA Ligase Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds metal oxide/oxides
	T4 RNA Ligase	Decomposition products may include the following materials: carbon dioxide carbon monoxide
Cyanine 3-Cytidine Bisphosphate	No specific data.	
2X Hi-RPM Hybridization Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds 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.
	Dimethyl sulfoxide	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 GE Blocking Agent Lyophilized	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	10X Calf Intestinal Phosphatase 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.
	Calf Intestinal	Promptly isolate the scene by removing all persons from the

SECTION 5: Firefighting measures

	Phosphatase	vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	10 mM 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.
	10X T4 RNA Ligase 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.
	T4 RNA Ligase	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-Cytidine Bisphosphate	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.
	2X Hi-RPM Hybridization 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.
Special protective equipment for fire-fighters	: 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.
	Dimethyl sulfoxide	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 GE Blocking Agent Lyophilized	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 Calf Intestinal Phosphatase 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.
	Calf Intestinal Phosphatase	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.
	10 mM 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.
	10X T4 RNA Ligase 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.
	T4 RNA Ligase	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

SECTION 5: Firefighting measures

Cyanine 3-Cytidine Bisphosphate	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.
2X Hi-RPM Hybridization 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.

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.
	Dimethyl sulfoxide	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 GE Blocking Agent Lyophilized	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	10X Calf Intestinal Phosphatase 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.
	Calf Intestinal Phosphatase	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.
	10 mM 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.
	10X T4 RNA Ligase 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.
	T4 RNA Ligase	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-Cytidine Bisphosphate	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.

SECTION 6: Accidental release measures

For emergency responders

2X Hi-RPM Hybridization 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. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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".
Dimethyl sulfoxide	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 GE Blocking Agent Lyophilized	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
10X Calf Intestinal Phosphatase 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".
Calf Intestinal Phosphatase	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".
10 mM 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".
10X T4 RNA Ligase 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".
T4 RNA Ligase	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-Cytidine Bisphosphate	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".
2X Hi-RPM Hybridization 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".

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).
Dimethyl sulfoxide	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 GE Blocking Agent Lyophilized	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
10X Calf Intestinal Phosphatase 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).

SECTION 6: Accidental release measures

Calf Intestinal Phosphatase	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.
10 mM 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).
10X T4 RNA Ligase 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).
T4 RNA Ligase	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-Cytidine Bisphosphate	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).
2X Hi-RPM Hybridization Buffer	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

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.
Dimethyl sulfoxide	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 GE Blocking Agent Lyophilized	Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
10X Calf Intestinal Phosphatase 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.
Calf Intestinal Phosphatase	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.
10 mM 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.
10X T4 RNA Ligase Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

SECTION 6: Accidental release measures

T4 RNA Ligase	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-Cytidine Bisphosphate	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.
2X Hi-RPM Hybridization 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.

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).
	Dimethyl sulfoxide	Put on appropriate personal protective equipment (see Section 8).
	10X GE Blocking Agent Lyophilized	Put on appropriate personal protective equipment (see Section 8).
	10X Calf Intestinal Phosphatase Buffer	Put on appropriate personal protective equipment (see Section 8).
	Calf Intestinal Phosphatase	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. 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.
	10 mM dNTP Mix	Put on appropriate personal protective equipment (see Section 8).
	10X T4 RNA Ligase Buffer	Put on appropriate personal protective equipment (see Section 8).
	T4 RNA Ligase	Put on appropriate personal protective equipment (see Section 8).
	Cyanine 3-Cytidine Bisphosphate	Put on appropriate personal protective equipment (see Section 8).
	2X Hi-RPM Hybridization Buffer	Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. 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.

SECTION 7: Handling and storage**Advice on general occupational hygiene**

: Nuclease Free Water	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Dimethyl sulfoxide	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 GE Blocking Agent Lyophilized	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 Calf Intestinal Phosphatase 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.
Calf Intestinal Phosphatase	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.
10 mM 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.
10X T4 RNA Ligase 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.
T4 RNA Ligase	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-Cytidine Bisphosphate	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.
2X Hi-RPM Hybridization 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.

SECTION 7: Handling and storage**7.2 Conditions for safe storage, including any incompatibilities**

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.
Dimethyl sulfoxide	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.
10X GE Blocking Agent Lyophilized	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
10X Calf Intestinal Phosphatase 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.
Calf Intestinal Phosphatase	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.
10 mM 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.
10X T4 RNA Ligase 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.
T4 RNA Ligase	Store in accordance with local regulations. Store in original

SECTION 7: Handling and storage

	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.
Cyanine 3-Cytidine Bisphosphate	Do not store above the following temperature: -20°C (-4°F). 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.
2X Hi-RPM Hybridization 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. 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.

Seveso Directive - Reporting thresholds (in tonnes)

7.3 Specific end use(s)

Recommendations	:	Nuclease Free Water	Industrial applications, Professional applications.
		Dimethyl sulfoxide	Industrial applications, Professional applications.
		10X GE Blocking Agent Lyophilized	Industrial applications, Professional applications.
		10X Calf Intestinal Phosphatase Buffer	Industrial applications, Professional applications.
		Calf Intestinal Phosphatase	Industrial applications, Professional applications.
		10 mM dNTP Mix	Industrial applications, Professional applications.
		10X T4 RNA Ligase Buffer	Industrial applications, Professional applications.
		T4 RNA Ligase	Industrial applications, Professional applications.
		Cyanine 3-Cytidine Bisphosphate	Industrial applications, Professional applications.
		2X Hi-RPM Hybridization Buffer	Industrial applications, Professional applications.
Industrial sector specific solutions	:	Nuclease Free Water	Not applicable.
		Dimethyl sulfoxide	Not applicable.
		10X GE Blocking Agent Lyophilized	Not applicable.
		10X Calf Intestinal Phosphatase Buffer	Not applicable.
		Calf Intestinal Phosphatase	Not applicable.
		10 mM dNTP Mix	Not applicable.
		10X T4 RNA Ligase Buffer	Not applicable.
		T4 RNA Ligase	Not applicable.
		Cyanine 3-Cytidine Bisphosphate	Not applicable.
		2X Hi-RPM Hybridization Buffer	Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Calf Intestinal Phosphatase Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist
Zinc chloride	EH40/2005 WELs (United Kingdom (UK), 12/2011). STEL: 2 mg/m ³ 15 minutes. Form: Fume TWA: 1 mg/m ³ 8 hours. Form: Fume
T4 RNA Ligase Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist

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

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

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

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles 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.

SECTION 8: Exposure controls/personal protection

- 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.
	Dimethyl sulfoxide	Liquid.
	10X GE Blocking Agent Lyophilized	Solid. [lyophilised]
	10X Calf Intestinal Phosphatase Buffer	Liquid.
	Calf Intestinal Phosphatase	Liquid.
	10 mM dNTP Mix	Liquid.
	10X T4 RNA Ligase Buffer	Liquid.
	T4 RNA Ligase	Liquid.
	Cyanine 3-Cytidine Bisphosphate	Liquid.
	2X Hi-RPM Hybridization Buffer	Liquid.

Colour	Nuclease Free Water	Colourless.
	Dimethyl sulfoxide	Not available.
	10X GE Blocking Agent Lyophilized	Not available.
	10X Calf Intestinal Phosphatase Buffer	Not available.
	Calf Intestinal Phosphatase	Not available.
	10 mM dNTP Mix	Not available.
	10X T4 RNA Ligase Buffer	Not available.
	T4 RNA Ligase	Not available.
	Cyanine 3-Cytidine Bisphosphate	Not available.
	2X Hi-RPM Hybridization Buffer	Not available.

Odour	Nuclease Free Water	Odourless.
	Dimethyl sulfoxide	Not available.
	10X GE Blocking Agent Lyophilized	Not available.
	10X Calf Intestinal Phosphatase Buffer	Not available.
	Calf Intestinal Phosphatase	Not available.
	10 mM dNTP Mix	Not available.
	10X T4 RNA Ligase Buffer	Not available.
	T4 RNA Ligase	Not available.
	Cyanine 3-Cytidine Bisphosphate	Not available.
	2X Hi-RPM Hybridization Buffer	Not available.

SECTION 9: Physical and chemical properties

		Hybridization Buffer	
Odour threshold	:	Nuclease Free Water	Not available.
		Dimethyl sulfoxide	Not available.
		10X GE Blocking Agent	Not available.
		Lyophilized	
		10X Calf Intestinal	Not available.
		Phosphatase Buffer	
		Calf Intestinal	Not available.
		Phosphatase	
		10 mM dNTP Mix	Not available.
		10X T4 RNA Ligase	Not available.
		Buffer	
		T4 RNA Ligase	Not available.
		Cyanine 3-Cytidine	Not available.
		Bisphosphate	
		2X Hi-RPM	Not available.
		Hybridization Buffer	
pH	:	Nuclease Free Water	Not available.
		Dimethyl sulfoxide	Not available.
		10X GE Blocking Agent	Not available.
		Lyophilized	
		10X Calf Intestinal	9
		Phosphatase Buffer	
		Calf Intestinal	8
		Phosphatase	
		10 mM dNTP Mix	Not available.
		10X T4 RNA Ligase	Not available.
		Buffer	
		T4 RNA Ligase	7.5
		Cyanine 3-Cytidine	Not available.
		Bisphosphate	
		2X Hi-RPM	6.1
		Hybridization Buffer	
Melting point/freezing point	:	Nuclease Free Water	0°C
		Dimethyl sulfoxide	Not available.
		10X GE Blocking Agent	Not available.
		Lyophilized	
		10X Calf Intestinal	Not available.
		Phosphatase Buffer	
		Calf Intestinal	Not available.
		Phosphatase	
		10 mM dNTP Mix	0°C
		10X T4 RNA Ligase	Not available.
		Buffer	
		T4 RNA Ligase	Not available.
		Cyanine 3-Cytidine	0°C
		Bisphosphate	
		2X Hi-RPM	Not available.
		Hybridization Buffer	
Initial boiling point and boiling range	:	Nuclease Free Water	100°C
		Dimethyl sulfoxide	Not available.
		10X GE Blocking Agent	Not available.
		Lyophilized	
		10X Calf Intestinal	Not available.
		Phosphatase Buffer	
		Calf Intestinal	Not available.
		Phosphatase	
		10 mM dNTP Mix	100°C
		10X T4 RNA Ligase	Not available.
		Buffer	
		T4 RNA Ligase	Not available.
		Cyanine 3-Cytidine	100°C
		Bisphosphate	

SECTION 9: Physical and chemical properties

	2X Hi-RPM Hybridization Buffer	Not available.
Flash point	: Nuclease Free Water	Not available.
	Dimethyl sulfoxide	Open cup: 87°C
	10X GE Blocking Agent Lyophilized	Not available.
	10X Calf Intestinal Phosphatase Buffer	Not available.
	Calf Intestinal Phosphatase	Not available.
	10 mM dNTP Mix	Not available.
	10X T4 RNA Ligase Buffer	Not available.
	T4 RNA Ligase	Not available.
	Cyanine 3-Cytidine Bisphosphate	Not available.
	2X Hi-RPM Hybridization Buffer	Not available.
Evaporation rate	: Nuclease Free Water	Not available.
	Dimethyl sulfoxide	Not available.
	10X GE Blocking Agent Lyophilized	Not available.
	10X Calf Intestinal Phosphatase Buffer	Not available.
	Calf Intestinal Phosphatase	Not available.
	10 mM dNTP Mix	Not available.
	10X T4 RNA Ligase Buffer	Not available.
	T4 RNA Ligase	Not available.
	Cyanine 3-Cytidine Bisphosphate	Not available.
	2X Hi-RPM Hybridization Buffer	Not available.
Flammability (solid, gas)	: Nuclease Free Water	Not applicable.
	Dimethyl sulfoxide	Not applicable.
	10X GE Blocking Agent Lyophilized	Not available.
	10X Calf Intestinal Phosphatase Buffer	Not applicable.
	Calf Intestinal Phosphatase	Not applicable.
	10 mM dNTP Mix	Not applicable.
	10X T4 RNA Ligase Buffer	Not applicable.
	T4 RNA Ligase	Not applicable.
	Cyanine 3-Cytidine Bisphosphate	Not applicable.
	2X Hi-RPM Hybridization Buffer	Not applicable.
Upper/lower flammability or explosive limits	: Nuclease Free Water	Not available.
	Dimethyl sulfoxide	Not available.
	10X GE Blocking Agent Lyophilized	Not available.
	10X Calf Intestinal Phosphatase Buffer	Not available.
	Calf Intestinal Phosphatase	Not available.
	10 mM dNTP Mix	Not available.
	10X T4 RNA Ligase Buffer	Not available.
	T4 RNA Ligase	Not available.
	Cyanine 3-Cytidine	Not available.

SECTION 9: Physical and chemical properties

	Bisphosphate	
	2X Hi-RPM	Not available.
	Hybridization Buffer	
Vapour pressure	: Nuclease Free Water	Not available.
	Dimethyl sulfoxide	Not available.
	10X GE Blocking Agent	Not available.
	Lyophilized	
	10X Calf Intestinal	Not available.
	Phosphatase Buffer	
	Calf Intestinal	Not available.
	Phosphatase	
	10 mM dNTP Mix	Not available.
	10X T4 RNA Ligase	Not available.
	Buffer	
	T4 RNA Ligase	Not available.
	Cyanine 3-Cytidine	Not available.
	Bisphosphate	
	2X Hi-RPM	Not available.
	Hybridization Buffer	
Vapour density	: Nuclease Free Water	Not available.
	Dimethyl sulfoxide	Not available.
	10X GE Blocking Agent	Not available.
	Lyophilized	
	10X Calf Intestinal	Not available.
	Phosphatase Buffer	
	Calf Intestinal	Not available.
	Phosphatase	
	10 mM dNTP Mix	Not available.
	10X T4 RNA Ligase	Not available.
	Buffer	
	T4 RNA Ligase	Not available.
	Cyanine 3-Cytidine	Not available.
	Bisphosphate	
	2X Hi-RPM	Not available.
	Hybridization Buffer	
Relative density	: Nuclease Free Water	1
	Dimethyl sulfoxide	Not available.
	10X GE Blocking Agent	Not available.
	Lyophilized	
	10X Calf Intestinal	Not available.
	Phosphatase Buffer	
	Calf Intestinal	Not available.
	Phosphatase	
	10 mM dNTP Mix	Not available.
	10X T4 RNA Ligase	Not available.
	Buffer	
	T4 RNA Ligase	Not available.
	Cyanine 3-Cytidine	Not available.
	Bisphosphate	
	2X Hi-RPM	Not available.
	Hybridization Buffer	
Solubility(ies)	: Nuclease Free Water	Easily soluble in the following materials: cold water and hot water.
	Dimethyl sulfoxide	Not available.
	10X GE Blocking Agent	Soluble in the following materials: cold water and hot water.
	Lyophilized	
	10X Calf Intestinal	Easily soluble in the following materials: cold water and hot water.
	Phosphatase Buffer	
	Calf Intestinal	Soluble in the following materials: cold water and hot water.
	Phosphatase	
	10 mM dNTP Mix	Easily soluble in the following materials: cold water and hot water.
	10X T4 RNA Ligase	Easily soluble in the following materials: cold water and hot water.

SECTION 9: Physical and chemical properties

	Buffer	hot water.
	T4 RNA Ligase	Soluble in the following materials: cold water and hot water.
	Cyanine 3-Cytidine Bisphosphate	Easily soluble in the following materials: cold water, hot water, methanol, diethyl ether and acetone.
	2X Hi-RPM Hybridization Buffer	Soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: Nuclease Free Water	Not available.
	Dimethyl sulfoxide	Not available.
	10X GE Blocking Agent Lyophilized	Not available.
	10X Calf Intestinal Phosphatase Buffer	Not available.
	Calf Intestinal Phosphatase	Not available.
	10 mM dNTP Mix	Not available.
	10X T4 RNA Ligase Buffer	Not available.
	T4 RNA Ligase	Not available.
	Cyanine 3-Cytidine Bisphosphate	Not available.
	2X Hi-RPM Hybridization Buffer	Not available.
Auto-ignition temperature	: Nuclease Free Water	Not available.
	Dimethyl sulfoxide	Not available.
	10X GE Blocking Agent Lyophilized	Not available.
	10X Calf Intestinal Phosphatase Buffer	Not available.
	Calf Intestinal Phosphatase	Not available.
	10 mM dNTP Mix	Not available.
	10X T4 RNA Ligase Buffer	Not available.
	T4 RNA Ligase	Not available.
	Cyanine 3-Cytidine Bisphosphate	Not available.
	2X Hi-RPM Hybridization Buffer	Not available.
Decomposition temperature	: Nuclease Free Water	>1200°C
	Dimethyl sulfoxide	Not available.
	10X GE Blocking Agent Lyophilized	Not available.
	10X Calf Intestinal Phosphatase Buffer	Not available.
	Calf Intestinal Phosphatase	Not available.
	10 mM dNTP Mix	Not available.
	10X T4 RNA Ligase Buffer	Not available.
	T4 RNA Ligase	Not available.
	Cyanine 3-Cytidine Bisphosphate	Not available.
	2X Hi-RPM Hybridization Buffer	Not available.
Viscosity	: Nuclease Free Water	Not available.
	Dimethyl sulfoxide	Not available.
	10X GE Blocking Agent Lyophilized	Not available.
	10X Calf Intestinal Phosphatase Buffer	Not available.
	Calf Intestinal Phosphatase	Not available.

SECTION 9: Physical and chemical properties

	10 mM dNTP Mix	Not available.
	10X T4 RNA Ligase Buffer	Not available.
	T4 RNA Ligase	Not available.
	Cyanine 3-Cytidine Bisphosphate	Not available.
	2X Hi-RPM Hybridization Buffer	Not available.
Explosive properties	: Nuclease Free Water	Not available.
	Dimethyl sulfoxide	Not available.
	10X GE Blocking Agent Lyophilized	Not available.
	10X Calf Intestinal Phosphatase Buffer	Not available.
	Calf Intestinal Phosphatase	Not available.
	10 mM dNTP Mix	Not available.
	10X T4 RNA Ligase Buffer	Not available.
	T4 RNA Ligase	Not available.
	Cyanine 3-Cytidine Bisphosphate	Not available.
	2X Hi-RPM Hybridization Buffer	Not available.
Oxidising properties	: Nuclease Free Water	Not available.
	Dimethyl sulfoxide	Not available.
	10X GE Blocking Agent Lyophilized	Not available.
	10X Calf Intestinal Phosphatase Buffer	Not available.
	Calf Intestinal Phosphatase	Not available.
	10 mM dNTP Mix	Not available.
	10X T4 RNA Ligase Buffer	Not available.
	T4 RNA Ligase	Not available.
	Cyanine 3-Cytidine Bisphosphate	Not available.
	2X Hi-RPM Hybridization Buffer	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.
	Dimethyl sulfoxide	No specific test data related to reactivity available for this product or its ingredients.
	10X GE Blocking Agent Lyophilized	No specific test data related to reactivity available for this product or its ingredients.
	10X Calf Intestinal Phosphatase Buffer	No specific test data related to reactivity available for this product or its ingredients.
	Calf Intestinal Phosphatase	No specific test data related to reactivity available for this product or its ingredients.
	10 mM dNTP Mix	No specific test data related to reactivity available for this product or its ingredients.
	10X T4 RNA Ligase Buffer	No specific test data related to reactivity available for this product or its ingredients.
	T4 RNA Ligase	No specific test data related to reactivity available for this product or its ingredients.
	Cyanine 3-Cytidine Bisphosphate	No specific test data related to reactivity available for this product or its ingredients.

SECTION 10: Stability and reactivity

2X Hi-RPM Hybridization Buffer 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.
 Dimethyl sulfoxide The product is stable.
 10X GE Blocking Agent Lyophilized The product is stable.
 10X Calf Intestinal Phosphatase Buffer The product is stable.
 Calf Intestinal Phosphatase The product is stable.
 10 mM dNTP Mix The product is stable.
 10X T4 RNA Ligase Buffer The product is stable.
 T4 RNA Ligase The product is stable.
 Cyanine 3-Cytidine Bisphosphate The product is stable.
 2X Hi-RPM Hybridization Buffer 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.
 Dimethyl sulfoxide Under normal conditions of storage and use, hazardous reactions will not occur.
 10X GE Blocking Agent Lyophilized Under normal conditions of storage and use, hazardous reactions will not occur.
 10X Calf Intestinal Phosphatase Buffer Under normal conditions of storage and use, hazardous reactions will not occur.
 Calf Intestinal Phosphatase Under normal conditions of storage and use, hazardous reactions will not occur.
 10 mM dNTP Mix Under normal conditions of storage and use, hazardous reactions will not occur.
 10X T4 RNA Ligase Buffer Under normal conditions of storage and use, hazardous reactions will not occur.
 T4 RNA Ligase Under normal conditions of storage and use, hazardous reactions will not occur.
 Cyanine 3-Cytidine Bisphosphate Under normal conditions of storage and use, hazardous reactions will not occur.
 2X Hi-RPM Hybridization Buffer Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : Nuclease Free Water No specific data.
 Dimethyl sulfoxide No specific data.
 10X GE Blocking Agent Lyophilized No specific data.
 10X Calf Intestinal Phosphatase Buffer No specific data.
 Calf Intestinal Phosphatase No specific data.
 10 mM dNTP Mix No specific data.
 10X T4 RNA Ligase Buffer No specific data.
 T4 RNA Ligase No specific data.
 Cyanine 3-Cytidine Bisphosphate No specific data.
 2X Hi-RPM Hybridization Buffer No specific data.

SECTION 10: Stability and reactivity

10.5 Incompatible materials	:	Nuclease Free Water	May react or be incompatible with oxidising materials.
		Dimethyl sulfoxide	May react or be incompatible with oxidising materials.
		10X GE Blocking Agent Lyophilized	May react or be incompatible with oxidising materials.
		10X Calf Intestinal Phosphatase Buffer	May react or be incompatible with oxidising materials.
		Calf Intestinal Phosphatase	May react or be incompatible with oxidising materials.
		10 mM dNTP Mix	May react or be incompatible with oxidising materials.
		10X T4 RNA Ligase Buffer	May react or be incompatible with oxidising materials.
		T4 RNA Ligase	May react or be incompatible with oxidising materials.
		Cyanine 3-Cytidine Bisphosphate	May react or be incompatible with oxidising materials.
		2X Hi-RPM Hybridization Buffer	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.
		Dimethyl sulfoxide	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		10X GE Blocking Agent Lyophilized	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		10X Calf Intestinal Phosphatase Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		Calf Intestinal Phosphatase	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		10 mM dNTP Mix	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		10X T4 RNA Ligase Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		T4 RNA Ligase	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		Cyanine 3-Cytidine Bisphosphate	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		2X Hi-RPM Hybridization Buffer	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
Calf Intestinal Phosphatase Zinc chloride	LD50 Oral	Rat	350 mg/kg	-
2X Hi-RPM Hybridization Buffer Lithium chloride	LD50 Dermal	Rabbit	1629 mg/kg	-
	LD50 Dermal	Rat	1488 mg/kg	-
	LD50 Oral	Rat	526 mg/kg	-
Oxirane, 2-methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-(trimethylsilyloxy)-1-disiloxany]propyl] ether	LC50 Inhalation Dusts and mists	Rat	1.08 mg/l	4 hours
	LD50 Dermal	Rabbit	1550 mg/kg	-
	LD50 Oral	Rat	3200 mg/kg	-

Acute toxicity estimates

SECTION 11: Toxicological information

Route	ATE value
10X T4 RNA Ligase Buffer Oral	32467.5 mg/kg
2X Hi-RPM Hybridization Buffer Oral	7211.4 mg/kg
Dermal	102310.2 mg/kg
Inhalation (dusts and mists)	71.29 mg/l

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Calf Intestinal Phosphatase Zinc chloride	Skin - Severe irritant	Rabbit	-	120 hours 1 Percent	-
2X Hi-RPM Hybridization Buffer Lithium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Skin - Severe irritant	Rabbit	-	24 hours 500 milligrams	-
Polyoxyethylene octyl phenyl ether	Eyes - Moderate irritant	Rabbit	-	24 hours 10 microliters	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 microliters	-
Oxirane, 2-methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-(trimethylsilyloxy)-1-disiloxanyl]propyl] ether	Skin - Mild irritant	Rabbit	-	-	-
	Eyes - Severe irritant	Rabbit	-	-	-

Sensitiser

Product/ingredient name	Route of exposure	Species	Result
2X Hi-RPM Hybridization Buffer Oxirane, 2-methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-(trimethylsilyloxy)-1-disiloxanyl]propyl] ether	skin	Guinea pig	Not sensitizing

Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
10X Calf Intestinal Phosphatase Buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation
Calf Intestinal Phosphatase Zinc chloride	Category 3	Not applicable.	Respiratory tract irritation
10X T4 RNA Ligase Buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation
(R*,R*)-1,4-Dimercaptobutane-2,3-diol	Category 3	Not applicable.	Respiratory tract irritation

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2X Hi-RPM Hybridization Buffer 4-Morpholineethanesulfonic acid, hydrate (1:1)	Category 3	Not applicable.	Respiratory tract irritation
Lithium dodecyl sulphate	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure

Nuclease Free Water	Not available.
Dimethyl sulfoxide	Routes of entry anticipated: Oral, Dermal, Inhalation.
10X GE Blocking Agent Lyophilized	Not available.
10X Calf Intestinal Phosphatase Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
Calf Intestinal Phosphatase	Routes of entry anticipated: Oral, Dermal, Inhalation.
10 mM dNTP Mix	Not available.
10X T4 RNA Ligase Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
T4 RNA Ligase	Routes of entry anticipated: Oral, Dermal, Inhalation.
Cyanine 3-Cytidine Bisphosphate	Not available.
2X Hi-RPM Hybridization Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation

Nuclease Free Water	No known significant effects or critical hazards.
Dimethyl sulfoxide	No known significant effects or critical hazards.
10X GE Blocking Agent Lyophilized	No known significant effects or critical hazards.
10X Calf Intestinal Phosphatase Buffer	No known significant effects or critical hazards.
Calf Intestinal Phosphatase	No known significant effects or critical hazards.
10 mM dNTP Mix	No known significant effects or critical hazards.
10X T4 RNA Ligase Buffer	No known significant effects or critical hazards.
T4 RNA Ligase	No known significant effects or critical hazards.
Cyanine 3-Cytidine Bisphosphate	No known significant effects or critical hazards.
2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.

Ingestion

Nuclease Free Water	No known significant effects or critical hazards.
Dimethyl sulfoxide	No known significant effects or critical hazards.
10X GE Blocking Agent Lyophilized	No known significant effects or critical hazards.
10X Calf Intestinal Phosphatase Buffer	No known significant effects or critical hazards.
Calf Intestinal Phosphatase	No known significant effects or critical hazards.
10 mM dNTP Mix	No known significant effects or critical hazards.
10X T4 RNA Ligase Buffer	No known significant effects or critical hazards.
T4 RNA Ligase	No known significant effects or critical hazards.
Cyanine 3-Cytidine Bisphosphate	No known significant effects or critical hazards.
2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.

SECTION 11: Toxicological information

Skin contact	:	Nuclease Free Water	No known significant effects or critical hazards.
		Dimethyl sulfoxide	No known significant effects or critical hazards.
		10X GE Blocking Agent	No known significant effects or critical hazards.
		Lyophilized	
		10X Calf Intestinal	No known significant effects or critical hazards.
		Phosphatase Buffer	
		Calf Intestinal	No known significant effects or critical hazards.
		Phosphatase	
		10 mM dNTP Mix	No known significant effects or critical hazards.
		10X T4 RNA Ligase	No known significant effects or critical hazards.
		Buffer	
		T4 RNA Ligase	No known significant effects or critical hazards.
		Cyanine 3-Cytidine	No known significant effects or critical hazards.
	Bisphosphate		
	2X Hi-RPM Hybridization	Causes skin irritation.	
	Buffer		
Eye contact	:	Nuclease Free Water	No known significant effects or critical hazards.
		Dimethyl sulfoxide	No known significant effects or critical hazards.
		10X GE Blocking Agent	No known significant effects or critical hazards.
		Lyophilized	
		10X Calf Intestinal	No known significant effects or critical hazards.
		Phosphatase Buffer	
		Calf Intestinal	No known significant effects or critical hazards.
		Phosphatase	
		10 mM dNTP Mix	No known significant effects or critical hazards.
		10X T4 RNA Ligase	No known significant effects or critical hazards.
		Buffer	
		T4 RNA Ligase	No known significant effects or critical hazards.
		Cyanine 3-Cytidine	No known significant effects or critical hazards.
	Bisphosphate		
	2X Hi-RPM Hybridization	Causes serious eye damage.	
	Buffer		

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	:	Nuclease Free Water	No specific data.
		Dimethyl sulfoxide	No specific data.
		10X GE Blocking Agent	No specific data.
		Lyophilized	
		10X Calf Intestinal	No specific data.
		Phosphatase Buffer	
		Calf Intestinal	No specific data.
		Phosphatase	
		10 mM dNTP Mix	No specific data.
		10X T4 RNA Ligase	No specific data.
		Buffer	
		T4 RNA Ligase	No specific data.
		Cyanine 3-Cytidine	No specific data.
	Bisphosphate		
	2X Hi-RPM Hybridization	No specific data.	
	Buffer		
Ingestion	:	Nuclease Free Water	No specific data.
		Dimethyl sulfoxide	No specific data.
		10X GE Blocking Agent	No specific data.
		Lyophilized	
		10X Calf Intestinal	No specific data.
		Phosphatase Buffer	
		Calf Intestinal	No specific data.
		Phosphatase	
		10 mM dNTP Mix	No specific data.
		10X T4 RNA Ligase	No specific data.
		Buffer	
		T4 RNA Ligase	No specific data.
		Cyanine 3-Cytidine	No specific data.
	Bisphosphate		

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	2X Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: stomach pains
Skin contact	: Nuclease Free Water	No specific data.
	Dimethyl sulfoxide	No specific data.
	10X GE Blocking Agent	No specific data.
	Lyophilized	
	10X Calf Intestinal Phosphatase Buffer	No specific data.
	Calf Intestinal Phosphatase	No specific data.
	10 mM dNTP Mix	No specific data.
	10X T4 RNA Ligase Buffer	No specific data.
	T4 RNA Ligase	No specific data.
	Cyanine 3-Cytidine Bisphosphate	No specific data.
	2X Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Eye contact	: Nuclease Free Water	No specific data.
	Dimethyl sulfoxide	No specific data.
	10X GE Blocking Agent	No specific data.
	Lyophilized	
	10X Calf Intestinal Phosphatase Buffer	No specific data.
	Calf Intestinal Phosphatase	No specific data.
	10 mM dNTP Mix	No specific data.
	10X T4 RNA Ligase Buffer	No specific data.
	T4 RNA Ligase	No specific data.
	Cyanine 3-Cytidine Bisphosphate	No specific data.
	2X Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: pain watering redness

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.
	Dimethyl sulfoxide	No known significant effects or critical hazards.
	10X GE Blocking Agent	No known significant effects or critical hazards.
	Lyophilized	
	10X Calf Intestinal Phosphatase Buffer	No known significant effects or critical hazards.
	Calf Intestinal Phosphatase	No known significant effects or critical hazards.

SECTION 11: Toxicological information

	Phosphatase	
	10 mM dNTP Mix	No known significant effects or critical hazards.
	10X T4 RNA Ligase	No known significant effects or critical hazards.
	Buffer	
	T4 RNA Ligase	No known significant effects or critical hazards.
	Cyanine 3-Cytidine	No known significant effects or critical hazards.
	Bisphosphate	
	2X Hi-RPM Hybridization	No known significant effects or critical hazards.
	Buffer	
Carcinogenicity	: Nuclease Free Water	No known significant effects or critical hazards.
	Dimethyl sulfoxide	No known significant effects or critical hazards.
	10X GE Blocking Agent	No known significant effects or critical hazards.
	Lyophilized	
	10X Calf Intestinal	No known significant effects or critical hazards.
	Phosphatase Buffer	
	Calf Intestinal	No known significant effects or critical hazards.
	Phosphatase	
	10 mM dNTP Mix	No known significant effects or critical hazards.
	10X T4 RNA Ligase	No known significant effects or critical hazards.
	Buffer	
	T4 RNA Ligase	No known significant effects or critical hazards.
	Cyanine 3-Cytidine	No known significant effects or critical hazards.
	Bisphosphate	
	2X Hi-RPM Hybridization	No known significant effects or critical hazards.
	Buffer	
Mutagenicity	: Nuclease Free Water	No known significant effects or critical hazards.
	Dimethyl sulfoxide	No known significant effects or critical hazards.
	10X GE Blocking Agent	No known significant effects or critical hazards.
	Lyophilized	
	10X Calf Intestinal	No known significant effects or critical hazards.
	Phosphatase Buffer	
	Calf Intestinal	No known significant effects or critical hazards.
	Phosphatase	
	10 mM dNTP Mix	No known significant effects or critical hazards.
	10X T4 RNA Ligase	No known significant effects or critical hazards.
	Buffer	
	T4 RNA Ligase	No known significant effects or critical hazards.
	Cyanine 3-Cytidine	No known significant effects or critical hazards.
	Bisphosphate	
	2X Hi-RPM Hybridization	No known significant effects or critical hazards.
	Buffer	
Teratogenicity	: Nuclease Free Water	No known significant effects or critical hazards.
	Dimethyl sulfoxide	No known significant effects or critical hazards.
	10X GE Blocking Agent	No known significant effects or critical hazards.
	Lyophilized	
	10X Calf Intestinal	No known significant effects or critical hazards.
	Phosphatase Buffer	
	Calf Intestinal	No known significant effects or critical hazards.
	Phosphatase	
	10 mM dNTP Mix	No known significant effects or critical hazards.
	10X T4 RNA Ligase	No known significant effects or critical hazards.
	Buffer	
	T4 RNA Ligase	No known significant effects or critical hazards.
	Cyanine 3-Cytidine	No known significant effects or critical hazards.
	Bisphosphate	
	2X Hi-RPM Hybridization	No known significant effects or critical hazards.
	Buffer	

SECTION 11: Toxicological information

Developmental effects	:	Nuclease Free Water	No known significant effects or critical hazards.	
		Dimethyl sulfoxide	No known significant effects or critical hazards.	
		10X GE Blocking Agent	No known significant effects or critical hazards.	
		Lyophilized		
		10X Calf Intestinal Phosphatase Buffer	No known significant effects or critical hazards.	
		Calf Intestinal Phosphatase	No known significant effects or critical hazards.	
		10 mM dNTP Mix	No known significant effects or critical hazards.	
		10X T4 RNA Ligase Buffer	No known significant effects or critical hazards.	
		T4 RNA Ligase	No known significant effects or critical hazards.	
		Cyanine 3-Cytidine Bisphosphate	No known significant effects or critical hazards.	
		2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.	
	Fertility effects	:	Nuclease Free Water	No known significant effects or critical hazards.
			Dimethyl sulfoxide	No known significant effects or critical hazards.
			10X GE Blocking Agent	No known significant effects or critical hazards.
		Lyophilized		
		10X Calf Intestinal Phosphatase Buffer	No known significant effects or critical hazards.	
		Calf Intestinal Phosphatase	No known significant effects or critical hazards.	
		10 mM dNTP Mix	No known significant effects or critical hazards.	
		10X T4 RNA Ligase Buffer	No known significant effects or critical hazards.	
		T4 RNA Ligase	No known significant effects or critical hazards.	
		Cyanine 3-Cytidine Bisphosphate	No known significant effects or critical hazards.	
		2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.	
Other information		:	Nuclease Free Water	Not available.
			Dimethyl sulfoxide	Not available.
			10X GE Blocking Agent	Not available.
		Lyophilized		
		10X Calf Intestinal Phosphatase Buffer	Not available.	
		Calf Intestinal Phosphatase	Not available.	
		10 mM dNTP Mix	Not available.	
		10X T4 RNA Ligase Buffer	Not available.	
		T4 RNA Ligase	Not available.	
		Cyanine 3-Cytidine Bisphosphate	Not available.	
		2X Hi-RPM Hybridization Buffer	Not available.	

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Calf Intestinal Phosphatase Zinc chloride	Acute EC50 26 µg/l	Algae - Navicula incerta	96 hours
	Acute EC50 34 µg/l Fresh water	Algae - Chlorella vulgaris - Exponential growth phase	72 hours
	Acute EC50 1.8 mg/l Fresh water	Aquatic plants - Lemna aquinoctialis	96 hours
	Acute EC50 100 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 49.99 µg/l Fresh water	Crustaceans - Moina irrasa - Neonate	48 hours
	Acute LC50 0.027 mg/l Marine water	Fish - Limanda punctatissima -	96 hours

SECTION 12: Ecological information

<p>10X T4 RNA Ligase Buffer (R*,R*)-1, 4-Dimercaptobutane-2,3-diol</p> <p>2X Hi-RPM Hybridization Buffer Lithium chloride Polyoxyethylene octyl phenyl ether</p> <p>Oxirane, 2-methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyloxy)-1-disiloxanyl]propyl] ether</p>	Chronic NOEC 20 µg/l Marine water	Pre-larvae Algae - Chlorella sp. - Exponential growth phase	72 hours
	Chronic NOEC 1000 µg/l Fresh water	Crustaceans - Procambarus clarkii - Intermolt	21 days
	Chronic NOEC 80 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	21 days
	Chronic NOEC 31.5 µg/l Fresh water	Fish - Oncorhynchus mykiss	30 days
	Acute LC50 27000 to 30000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 22000 µg/l Fresh water	Fish - Gila elegans - Swim-up	96 hours
	Acute LC50 5.85 mg/l Fresh water	Crustaceans - Ceriodaphnia rigaudi - Neonate	48 hours
	Acute LC50 11.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4500 µg/l Fresh water EC50 28.2 mg/l	Fish - Pimephales promelas Algae	96 hours 72 hours
	EC50 1.1 mg/l LC50 2.1 mg/l	Daphnia Fish	48 hours 96 hours

12.2 Persistence and degradability

Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2X Hi-RPM Hybridization Buffer Lithium chloride Polyoxyethylene octyl phenyl ether	- -	- -	Readily Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Calf Intestinal Phosphatase Zinc chloride	-	60960	high
2X Hi-RPM Hybridization Buffer Polyoxyethylene octyl phenyl ether	4.86	-	high

12.4 Mobility in soil

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

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

SECTION 12: Ecological information

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 spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

Regulatory 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

Ingredient name	Intrinsic property	Status	Reference number	Date of revision
2X Hi-RPM Hybridization Buffer 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]; 4-tert-Octylphenol ethoxylates	Substance of equivalent concern for environment	Recommended	ED/169/2012	10/29/2013

SECTION 15: Regulatory information

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: Nuclease Free Water	Not applicable.
	Dimethyl sulfoxide	Not applicable.
	10X GE Blocking Agent	Not applicable.
	Lyophilized	
	10X Calf Intestinal Phosphatase Buffer	Not applicable.
	Calf Intestinal Phosphatase	Not applicable.
	10 mM dNTP Mix	Not applicable.
	10X T4 RNA Ligase Buffer	Not applicable.
	T4 RNA Ligase	Not applicable.
	Cyanine 3-Cytidine Bisphosphate	Not applicable.
	2X Hi-RPM Hybridization Buffer	Not applicable.

Other EU regulations

Europe inventory : Not determined.

Industrial emissions (integrated pollution prevention and control) - Air : Listed

Seveso Directive

This product is not controlled under the Seveso Directive.

National regulations

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 Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

Australia	: Not determined.
Canada	: Not determined.
China	: 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.
Turkey	: Not determined.
United States	: Not determined.

SECTION 15: Regulatory information

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
Calf Intestinal Phosphatase Aquatic Chronic 3, H412	Calculation method
2X Hi-RPM Hybridization Buffer Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 3, H412	Calculation method Calculation method Calculation method

Full text of abbreviated H statements : **10X Calf Intestinal Phosphatase Buffer**
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.

Calf Intestinal Phosphatase
 H302 Harmful if swallowed.
 H314 Causes severe skin burns and eye damage.
 H335 May cause respiratory irritation.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.
 H412 Harmful to aquatic life with long lasting effects.

10X T4 RNA Ligase Buffer
 H302 Harmful if swallowed.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.
 H412 Harmful to aquatic life with long lasting effects.

2X Hi-RPM Hybridization Buffer
 H228 Flammable solid.
 H302 Harmful if swallowed.
 H312 Harmful in contact with skin.
 H315 Causes skin irritation.
 H318 Causes serious eye damage.
 H319 Causes serious eye irritation.
 H332 Harmful if inhaled.
 H335 May cause respiratory irritation.
 H411 Toxic to aquatic life with long lasting effects.
 H412 Harmful to aquatic life with long lasting effects.

SECTION 16: Other information

<p>Full text of classifications [CLP/GHS]</p>	<p>: 10X Calf Intestinal Phosphatase Buffer Eye Irrit. 2, H319 Skin Irrit. 2, H315 STOT SE 3, H335</p> <p>Calf Intestinal Phosphatase Acute Tox. 4, H302 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Aquatic Chronic 3, H412 Skin Corr. 1B, H314 STOT SE 3, H335</p> <p>10X T4 RNA Ligase Buffer Acute Tox. 4, H302 Aquatic Chronic 3, H412 Eye Irrit. 2, H319 Skin Irrit. 2, H315 STOT SE 3, H335</p> <p>2X Hi-RPM Hybridization Buffer Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Aquatic Chronic 2, H411 Aquatic Chronic 3, H412 Eye Dam. 1, H318 Eye Irrit. 2, H319 Flam. Sol. 2, H228 Skin Irrit. 2, H315 STOT SE 3, H335</p>	<p>SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3</p> <p>ACUTE TOXICITY (oral) - Category 4 ACUTE AQUATIC HAZARD - Category 1 LONG-TERM AQUATIC HAZARD - Category 1 LONG-TERM AQUATIC HAZARD - Category 3 SKIN CORROSION/IRRITATION - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3</p> <p>ACUTE TOXICITY (oral) - Category 4 LONG-TERM 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</p> <p>ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 LONG-TERM AQUATIC HAZARD - Category 2 LONG-TERM AQUATIC HAZARD - Category 3 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 FLAMMABLE SOLIDS - Category 2 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3</p>
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