

# SAFETY DATA SHEET



Hi-RPM Gene Expression Hybridization Kit, Large Volume, Part Number 5190-0404

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

### 1.1 Product identifier

**Product name** : Hi-RPM Gene Expression Hybridization Kit, Large Volume, Part Number 5190-0404  
**Part no. (chemical kit)** : 5190-0404  
**Part no.** :  Hi-RPM Hybridization Buffer 5188-6415  
10X Gene Expression Blocking Agent 5188-5973  
25X Fragmentation Buffer 5188-1196

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

**Material uses** : Analytical reagent.  
 Hi-RPM Hybridization Buffer 25 ml  
10X Gene Expression Blocking Agent 25 Hybs lyophilised  
25X Fragmentation Buffer 10 ml

### 1.3 Details of the supplier of the safety data sheet

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

**e-mail address of person responsible for this SDS** : pdl-msds\_author@agilent.com

### 1.4 Emergency telephone number

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

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** :  Hi-RPM Hybridization Buffer Mixture  
10X Gene Expression Blocking Agent Mixture  
25X Fragmentation Buffer Mixture

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

##### Hi-RPM Hybridization Buffer

H315 SKIN CORROSION/IRRITATION - Category 2  
H319 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2  
H412 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

##### 10X Gene Expression Blocking Agent

H315 SKIN CORROSION/IRRITATION - Category 2  
H319 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2  
H335 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract)

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## SECTION 2: Hazards identification

irritation) - Category 3

### 25X Fragmentation Buffer




H315	SKIN CORROSION/IRRITATION - Category 2
H319	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
H412	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

<b>Ingredients of unknown toxicity</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 10 - 30% Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30% Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 10 - 30%
	10X Gene Expression Blocking Agent	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 10 - 30% Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: > 60% Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 10 - 30%
	25X Fragmentation Buffer	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30% Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%
<b>Ingredients of unknown ecotoxicity</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 17.9%
	10X Gene Expression Blocking Agent	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 30%
	25X Fragmentation Buffer	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 7.3%

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

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

### 2.2 Label elements

<b>Hazard pictograms</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	
	10X Gene Expression Blocking Agent	
	25X Fragmentation Buffer	
<b>Signal word</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Warning
	10X Gene Expression Blocking Agent	Warning
	25X Fragmentation Buffer	Warning

**Hi-RPM Gene Expression Hybridization Kit, Large Volume, Part Number 5190-0404**

**SECTION 2: Hazards identification**

<b>Hazard statements</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	H319 - Causes serious eye irritation. H315 - Causes skin irritation. H412 - Harmful to aquatic life with long lasting effects.
	10X Gene Expression Blocking Agent	H319 - Causes serious eye irritation. H315 - Causes skin irritation. H335 - May cause respiratory irritation.
	25X Fragmentation Buffer	H319 - Causes serious eye irritation. H315 - Causes skin irritation. H412 - Harmful to aquatic life with long lasting effects.
<b><u>Precautionary statements</u></b>		
<b>Prevention</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	P280 - Wear protective gloves. Wear eye or face protection. P273 - Avoid release to the environment.
	10X Gene Expression Blocking Agent	P280 - Wear protective gloves. Wear eye or face protection. P261 - Avoid breathing dust.
	25X Fragmentation Buffer	P280 - Wear protective gloves. Wear eye or face protection. P273 - Avoid release to the environment.
<b>Response</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	10X Gene Expression Blocking Agent	P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
	25X Fragmentation Buffer	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>Storage</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Not applicable.
	10X Gene Expression Blocking Agent	P405 - Store locked up.
	25X Fragmentation Buffer	Not applicable.
<b>Disposal</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	10X Gene Expression Blocking Agent	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	25X Fragmentation Buffer	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Hazardous ingredients</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Not applicable.
	10X Gene Expression Blocking Agent	- Trometamol - 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride
	25X Fragmentation Buffer	Not applicable.
<b>Supplemental label elements</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Not applicable.
	10X Gene Expression Blocking Agent	Not applicable.
	25X Fragmentation Buffer	Not applicable.

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## SECTION 2: Hazards identification

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** :  Hi-RPM Hybridization Buffer Not applicable.  
 10X Gene Expression Buffer Not applicable.  
 Blocking Agent Not applicable.  
 25X Fragmentation Buffer Not applicable.

### Special packaging requirements

**Tactile warning of danger** :  Hi-RPM Hybridization Buffer Not applicable.  
 10X Gene Expression Buffer Not applicable.  
 Blocking Agent Not applicable.  
 25X Fragmentation Buffer Not applicable.

### 2.3 Other hazards

**Other hazards which do not result in classification** :  Hi-RPM Hybridization Buffer None known.  
 10X Gene Expression Buffer None known.  
 Blocking Agent None known.  
 25X Fragmentation Buffer None known.

## SECTION 3: Composition/information on ingredients

**3.1 Substances** :  Hi-RPM Hybridization Buffer Mixture  
 10X Gene Expression Blocking Agent Mixture  
 25X Fragmentation Buffer Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
<input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer Lithium chloride	EC: 231-212-3 CAS: 7447-41-8	≤12	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319	[1]
Lithium dodecyl sulphate	EC: 218-058-2 CAS: 2044-56-6	≤6.4	Flam. Sol. 1, H228 Acute Tox. 4, H302 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Chronic 3, H412	[1]
Polyoxyethylene octyl phenyl ether	CAS: 9002-93-1	≤6.4	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Chronic 2, H411	[1] [5]
Oxirane, 2-methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyloxy)-1-disiloxanyl]propyl] ether	CAS: 134180-76-0	≤3	Acute Tox. 4, H312 Acute Tox. 4, H332 Eye Irrit. 2, H319 Aquatic Chronic 3, H412	[1]
<b>10X Gene Expression Blocking Agent</b> Trometamol	EC: 201-064-4 CAS: 77-86-1	≥25 - ≤50	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
2-Amino-2-(hydroxymethyl) propane-1,3-diol hydrochloride	EC: 214-684-5 CAS: 1185-53-1	≥25 - ≤50	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]

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**SECTION 3: Composition/information on ingredients**

<b>25X Fragmentation Buffer</b> Trometamol	EC: 201-064-4 CAS: 77-86-1	<10	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
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]
Zinc acetate, dihydrate	EC: 209-170-2 CAS: 5970-45-6	<1	Acute Tox. 4, H302 Eye Irrit. 2, H319 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)  <b>See Section 16 for the full text of the H statements declared above.</b>	[1]

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

Type

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

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

**Eye contact**

- :  Hi-RPM Hybridization Buffer  
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- : 10X Gene Expression Blocking Agent  
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.
- : 25X Fragmentation Buffer  
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

**Inhalation**

- :  Hi-RPM Hybridization Buffer  
Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- : 10X Gene Expression Blocking Agent  
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-

## SECTION 4: First aid measures

		<p>mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. 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.</p>
	25X Fragmentation Buffer	<p>Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.</p>
<b>Skin contact</b>	: <input checked="" type="checkbox"/> 25X Fragmentation Buffer	<p>Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.</p>
	: <input checked="" type="checkbox"/> 10X Gene Expression Blocking Agent	<p>Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.</p>
	: <input checked="" type="checkbox"/> 25X Fragmentation Buffer	<p>Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.</p>
<b>Ingestion</b>	: <input checked="" type="checkbox"/> 25X Fragmentation Buffer	<p>Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.</p>
	: <input checked="" type="checkbox"/> 10X Gene Expression Blocking Agent	<p>Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.</p>

## SECTION 4: First aid measures

	25X Fragmentation Buffer	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
<b>Protection of first-aiders</b>	: <input checked="" type="checkbox"/> 25X Fragmentation Buffer	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	: <input checked="" type="checkbox"/> 10X Gene Expression Blocking Agent	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.
	: <input checked="" type="checkbox"/> 25X Fragmentation Buffer	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

### 4.2 Most important symptoms and effects, both acute and delayed

#### Potential acute health effects

<b>Eye contact</b>	: <input checked="" type="checkbox"/> 25X Fragmentation Buffer	Causes serious eye irritation.
	: <input checked="" type="checkbox"/> 10X Gene Expression Blocking Agent	Causes serious eye irritation.
	: <input checked="" type="checkbox"/> 25X Fragmentation Buffer	Causes serious eye irritation.
<b>Inhalation</b>	: <input checked="" type="checkbox"/> 25X Fragmentation Buffer	No known significant effects or critical hazards.
	: <input checked="" type="checkbox"/> 10X Gene Expression Blocking Agent	May cause respiratory irritation.
	: <input checked="" type="checkbox"/> 25X Fragmentation Buffer	No known significant effects or critical hazards.
<b>Skin contact</b>	: <input checked="" type="checkbox"/> 25X Fragmentation Buffer	Causes skin irritation.
	: <input checked="" type="checkbox"/> 10X Gene Expression Blocking Agent	Causes skin irritation.
	: <input checked="" type="checkbox"/> 25X Fragmentation Buffer	Causes skin irritation.
<b>Ingestion</b>	: <input checked="" type="checkbox"/> 25X Fragmentation Buffer	No known significant effects or critical hazards.
	: <input checked="" type="checkbox"/> 10X Gene Expression Blocking Agent	No known significant effects or critical hazards.
	: <input checked="" type="checkbox"/> 25X Fragmentation Buffer	No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

## SECTION 4: First aid measures

<b>Eye contact</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: pain or irritation watering redness
	10X Gene Expression Blocking Agent	Adverse symptoms may include the following: pain or irritation watering redness
	25X Fragmentation Buffer	Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	No specific data.
	10X Gene Expression Blocking Agent	Adverse symptoms may include the following: respiratory tract irritation coughing
	25X Fragmentation Buffer	No specific data.
<b>Skin contact</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: irritation redness
	10X Gene Expression Blocking Agent	Adverse symptoms may include the following: irritation redness
	25X Fragmentation Buffer	Adverse symptoms may include the following: irritation redness
<b>Ingestion</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	No specific data.
	10X Gene Expression Blocking Agent	No specific data.
	25X Fragmentation Buffer	No specific data.

### 4.3 Indication of any immediate medical attention and special treatment needed

<b>Notes to physician</b>	: <input checked="" type="checkbox"/> 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.
	10X Gene Expression Blocking Agent	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.
	25X Fragmentation 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.
<b>Specific treatments</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	No specific treatment.
	10X Gene Expression Blocking Agent	No specific treatment.
	25X Fragmentation Buffer	No specific treatment.



## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Use an extinguishing agent suitable for the surrounding fire.
	10X Gene Expression Blocking Agent	Use an extinguishing agent suitable for the surrounding fire.
	25X Fragmentation Buffer	Use an extinguishing agent suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	None known.
	10X Gene Expression Blocking Agent	None known.
	25X Fragmentation Buffer	None known.

### 5.2 Special hazards arising from the substance or mixture

<b>Hazards from the substance or mixture</b>	: <input checked="" type="checkbox"/> 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.
	10X Gene Expression Blocking Agent	No specific fire or explosion hazard.
	25X Fragmentation 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.
<b>Hazardous combustion products</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds metal oxide/oxides
	10X Gene Expression Blocking Agent	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides halogenated compounds
	25X Fragmentation Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds

### 5.3 Advice for firefighters

<b>Special precautions for fire-fighters</b>	: <input checked="" type="checkbox"/> 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.
	10X Gene Expression Blocking Agent	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.
	25X Fragmentation Buffer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

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**SECTION 5: Firefighting measures**

<b>Special protective equipment for fire-fighters</b>	: <input checked="" type="checkbox"/> 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.
	10X Gene Expression Blocking Agent	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.
	25X Fragmentation 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**

<b>For non-emergency personnel</b>	: <input checked="" type="checkbox"/> 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	10X Gene Expression Blocking Agent	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	25X Fragmentation Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
<b>For emergency responders</b>	: <input checked="" type="checkbox"/> 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".
	10X Gene Expression Blocking Agent	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".
	25X Fragmentation 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".

## SECTION 6: Accidental release measures

<b>6.2 Environmental precautions</b>	<b>:</b>	<input checked="" type="checkbox"/> 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.
		10X Gene Expression Blocking Agent	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).
		25X Fragmentation 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

<b>Methods for cleaning up</b>	<b>:</b>	<input checked="" type="checkbox"/> 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.
		10X Gene Expression Blocking Agent	Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
		25X Fragmentation 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.

<b>6.4 Reference to other sections</b>	<b>:</b>	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.
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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

<b>Protective measures</b>	<b>:</b>	<input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. 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.
		10X Gene Expression Blocking Agent	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
		25X Fragmentation Buffer	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. Keep in the original container or an

## SECTION 7: Handling and storage

### Advice on general occupational hygiene

:  Hi-RPM Hybridization Buffer

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.

10X Gene Expression Blocking Agent

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.

25X Fragmentation 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.

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

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage

:  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. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

10X Gene Expression Blocking Agent

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

25X Fragmentation Buffer

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

### 7.3 Specific end use(s)

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## SECTION 7: Handling and storage

<b>Recommendations</b>	:	<input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Industrial applications, Professional applications.
		10X Gene Expression Blocking Agent	Industrial applications, Professional applications.
		25X Fragmentation Buffer	Industrial applications, Professional applications.
<b>Industrial sector specific solutions</b>	:	<input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Not applicable.
		10X Gene Expression Blocking Agent	Not applicable.
		25X Fragmentation Buffer	Not applicable.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

No exposure limit value known.

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

#### DNELs/DMELs

No DNELs/DMELs available.

#### PNECs

No PNECs available

### 8.2 Exposure controls

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

#### Individual protection measures

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

**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.

#### Skin protection

## SECTION 8: Exposure controls/personal protection

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

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Liquid.
	: <input type="checkbox"/> 10X Gene Expression Blocking Agent	Solid. [lyophilised pellets]
	: <input type="checkbox"/> 25X Fragmentation Buffer	Liquid.
<b>Colour</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Yellow. [Light]
	: <input type="checkbox"/> 10X Gene Expression Blocking Agent	Not available.
	: <input type="checkbox"/> 25X Fragmentation Buffer	Yellow. [Light]
<b>Odour</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Not available.
	: <input type="checkbox"/> 10X Gene Expression Blocking Agent	Odourless.
	: <input type="checkbox"/> 25X Fragmentation Buffer	Odourless.
<b>Odour threshold</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Not available.
	: <input type="checkbox"/> 10X Gene Expression Blocking Agent	Not available.
	: <input type="checkbox"/> 25X Fragmentation Buffer	Not available.
<b>pH</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	6.1
	: <input type="checkbox"/> 10X Gene Expression Blocking Agent	Not available.
	: <input type="checkbox"/> 25X Fragmentation Buffer	7.6

## SECTION 9: Physical and chemical properties

<b>Melting point/freezing point</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not available. Not available. Not available.
<b>Initial boiling point and boiling range</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not available. Not available. Not available.
<b>Flash point</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not available. Not available. Not available.
<b>Evaporation rate</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not available. Not available. Not available.
<b>Flammability (solid, gas)</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not applicable. Not available. Not applicable.
<b>Upper/lower flammability or explosive limits</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not available. Not available. Not available.
<b>Vapour pressure</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not available. Not available. Not available.
<b>Vapour density</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not available. Not available. Not available.
<b>Relative density</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not available. Not available. Not available.

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**SECTION 9: Physical and chemical properties**

<b>Solubility(ies)</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water.
<b>Partition coefficient: n-octanol/water</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not available. Not available. Not available.
<b>Auto-ignition temperature</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not available. Not available. Not available.
<b>Decomposition temperature</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not available. Not available. Not available.
<b>Viscosity</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not available. Not available. Not available.
<b>Explosive properties</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not available. Not available. Not available.
<b>Oxidising properties</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not available. Not available. Not available.

**9.2 Other information**

No additional information.

**SECTION 10: Stability and reactivity**

<b>10.1 Reactivity</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
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## SECTION 10: Stability and reactivity

<b>10.2 Chemical stability</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	The product is stable. The product is stable. The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
<b>10.4 Conditions to avoid</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	No specific data. No specific data. No specific data.
<b>10.5 Incompatible materials</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials.
<b>10.6 Hazardous decomposition products</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. 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
<input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer				
Lithium chloride	LC50 Inhalation Dusts and mists	Rat	>5.57 mg/l	4 hours
	LD50 Dermal	Rabbit	1629 mg/kg	-
	LD50 Dermal	Rat	1488 mg/kg	-
	LD50 Oral	Rat	526 mg/kg	-
Lithium dodecyl sulphate	LD50 Oral	Rat	>5000 mg/kg	-
Polyoxyethylene octyl phenyl ether	LD50 Oral	Rat	1800 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	-
<b>10X Gene Expression Blocking Agent</b>				

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**SECTION 11: Toxicological information**

Trometamol	LD50 Dermal LD50 Oral	Rat Rat	>5000 mg/kg 5000 mg/kg	- -
<b>25X Fragmentation Buffer</b>				
Trometamol	LD50 Dermal LD50 Oral	Rat Rat	>5000 mg/kg 5000 mg/kg	- -
Zinc acetate, dihydrate	LD50 Oral	Rat	794 mg/kg	-

**Acute toxicity estimates**

Route	ATE value
<b>2X Hi-RPM Hybridization Buffer</b>	
Oral	2583.6 mg/kg
Dermal	9381.9 mg/kg
Inhalation (dusts and mists)	16.33 mg/l

**Irritation/Corrosion**

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>2X Hi-RPM Hybridization Buffer</b>					
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	-	-	-
<b>10X Gene Expression Blocking Agent</b>					
Trometamol	Skin - Moderate irritant	Rabbit	-	25 Percent	-
	Skin - Severe irritant	Rabbit	-	500 milligrams	-
<b>25X Fragmentation Buffer</b>					
Trometamol	Skin - Moderate irritant	Rabbit	-	25 Percent	-
	Skin - Severe irritant	Rabbit	-	500 milligrams	-
Zinc acetate, dihydrate	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

**Sensitiser**

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

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## SECTION 11: Toxicological information

### Mutagenicity

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
<input checked="" type="checkbox"/> <b>Hi-RPM Hybridization Buffer</b> Lithium dodecyl sulphate	Category 3	Not applicable.	Respiratory tract irritation
<b>10X Gene Expression Blocking Agent</b> Trometamol	Category 3	Not applicable.	Respiratory tract irritation
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation
<b>25X Fragmentation Buffer</b> Trometamol	Category 3	Not applicable.	Respiratory tract irritation
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

### Information on likely routes of exposure

Hi-RPM Hybridization Buffer Routes of entry anticipated: Oral, Dermal, Inhalation.  
 10X Gene Expression Blocking Agent Routes of entry anticipated: Oral, Dermal, Inhalation.  
 25X Fragmentation Buffer Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

**Inhalation** :  Hi-RPM Hybridization Buffer No known significant effects or critical hazards.  
 10X Gene Expression Blocking Agent May cause respiratory irritation.  
 25X Fragmentation Buffer No known significant effects or critical hazards.

**Ingestion** :  Hi-RPM Hybridization Buffer No known significant effects or critical hazards.  
 10X Gene Expression Blocking Agent No known significant effects or critical hazards.  
 25X Fragmentation Buffer No known significant effects or critical hazards.

## SECTION 11: Toxicological information

<b>Skin contact</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Causes skin irritation.
	10X Gene Expression Blocking Agent	Causes skin irritation.
	25X Fragmentation Buffer	Causes skin irritation.
	<b>Eye contact</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer
	10X Gene Expression Blocking Agent	Causes serious eye irritation.
	25X Fragmentation Buffer	Causes serious eye irritation.

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Inhalation</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	No specific data.
	10X Gene Expression Blocking Agent	Adverse symptoms may include the following: respiratory tract irritation coughing
	25X Fragmentation Buffer	No specific data.
	<b>Ingestion</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer
	10X Gene Expression Blocking Agent	No specific data.
	25X Fragmentation Buffer	No specific data.
<b>Skin contact</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: irritation redness
	10X Gene Expression Blocking Agent	Adverse symptoms may include the following: irritation redness
	25X Fragmentation Buffer	Adverse symptoms may include the following: irritation redness
	<b>Eye contact</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer
	10X Gene Expression Blocking Agent	Adverse symptoms may include the following: pain or irritation watering redness
	25X Fragmentation Buffer	Adverse symptoms may include the following: pain or irritation 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.

## SECTION 11: Toxicological information

**Potential delayed effects** : Not available.

### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

### Potential chronic health effects

<b>General</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Mutagenicity</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Teratogenicity</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Developmental effects</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Fertility effects</b>	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

## SECTION 12: Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer Lithium chloride	Acute EC50 112 mg/l Fresh water	Algae	72 hours
	Acute EC50 249 mg/l Fresh water	Daphnia	48 hours
	Acute LC50 17000 µg/l Fresh water	Fish - <i>Ptychocheilus lucius</i> - Swim-up	96 hours
	Acute NOEC 25 mg/l Fresh water	Algae	72 hours
	Acute NOEC 63.4 mg/l Fresh water	Daphnia	48 hours
	Acute NOEC 59.4 mg/l Fresh water	Fish	96 hours

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**SECTION 12: Ecological information**

Polyoxyethylene octyl phenyl ether	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
Oxirane, 2-methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[trimethylsilyloxy]-1-disiloxanyl]propyl] ether	Acute LC50 4500 µg/l Fresh water EC50 28.2 mg/l	Fish - Pimephales promelas Algae	96 hours 72 hours
<b>10X Gene Expression Blocking Agent</b> Trometamol	EC50 1.1 mg/l	Daphnia	48 hours
<b>25X Fragmentation Buffer</b> Trometamol	Acute EC50 >980 mg/l Fresh water Acute NOEC 520 mg/l Fresh water	Daphnia Daphnia	48 hours 48 hours
<b>25X Fragmentation Buffer</b> Trometamol	Acute EC50 >980 mg/l Fresh water Acute NOEC 520 mg/l Fresh water	Daphnia Daphnia	48 hours 48 hours

**12.2 Persistence and degradability**

Not available.

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

**12.3 Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>2X Hi-RPM Hybridization Buffer</b> Polyoxyethylene octyl phenyl ether	4.86	-	high
<b>10X Gene Expression Blocking Agent</b> Trometamol	-1.56	-	low
<b>25X Fragmentation Buffer</b> Trometamol	-1.56	-	low

**12.4 Mobility in soil**

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Not available.

**12.5 Results of PBT and vPvB assessment**

**PBT** : Not applicable.

**vPvB** : Not applicable.

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

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

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

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

#### Packaging

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

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

## SECTION 14: Transport information

**ADR/RID / IMDG / IATA** : Not regulated.

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

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

## SECTION 15: Regulatory information

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

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

##### Annex XIV - List of substances subject to authorisation

#### Annex XIV

Ingredient name	Intrinsic property	Status	Reference number	Date of revision
<input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer Polyoxyethylene octyl phenyl ether	Substance of equivalent concern for environment	Listed	42	7/3/2017

#### Substances of very high concern

Ingredient name	Intrinsic property	Status	Reference number	Date of revision
<input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer Polyoxyethylene octyl phenyl ether	Substance of equivalent concern for environment	Recommended	ED/169/2012	2/10/2014

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** :  Hi-RPM Hybridization Buffer Not applicable.  
10X Gene Expression Blocking Agent Not applicable.  
25X Fragmentation Buffer Not applicable.

## SECTION 15: Regulatory information

### Other EU regulations

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

### Ozone depleting substances (1005/2009/EU)

Not listed.

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

Not listed.

### Seveso Directive

This product is not controlled under the Seveso Directive.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### Inventory list

<b>Australia</b>	: Not determined.
<b>Canada</b>	: Not determined.
<b>China</b>	: Not determined.
<b>Europe</b>	: Not determined.
<b>Japan</b>	: <b>Japan inventory (ENCS):</b> Not determined. <b>Japan inventory (ISHL):</b> Not determined.
<b>Malaysia</b>	: Not determined.
<b>New Zealand</b>	: Not determined.
<b>Philippines</b>	: Not determined.
<b>Republic of Korea</b>	: Not determined.
<b>Taiwan</b>	: Not determined.
<b>Thailand</b>	: <input checked="" type="checkbox"/> Not determined.
<b>Turkey</b>	: Not determined.
<b>United States</b>	: Not determined.
<b>Viet Nam</b>	: <input checked="" type="checkbox"/> Not determined.

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



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## 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
<b>✔ Hi-RPM Hybridization Buffer</b> Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Chronic 3, H412	Calculation method Calculation method Calculation method
<b>10X Gene Expression Blocking Agent</b> Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	Calculation method Calculation method Calculation method
<b>25X Fragmentation Buffer</b> Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Chronic 3, H412	Calculation method Calculation method Calculation method

### Full text of abbreviated H statements

<b>✔ Hi-RPM Hybridization Buffer</b> H228 H302 H312 H315 H318 H319 H332 H335 H411 H412	Flammable solid. Harmful if swallowed. Harmful in contact with skin. Causes skin irritation. Causes serious eye damage. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation. Toxic to aquatic life with long lasting effects. Harmful to aquatic life with long lasting effects.
<b>10X Gene Expression Blocking Agent</b> H315 H319 H335	Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.
<b>25X Fragmentation Buffer</b> H302 H315 H319 H335 H400 H410 H412	Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. Harmful to aquatic life with long lasting effects.

### Full text of classifications [CLP/GHS]

Hi-RPM Gene Expression Hybridization Kit, Large Volume, Part Number 5190-0404

## SECTION 16: Other information

### **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. 1, H228  
 Skin Irrit. 2, H315  
 STOT SE 3, H335

ACUTE TOXICITY (oral) - Category 4  
 ACUTE TOXICITY (dermal) - Category 4  
 ACUTE TOXICITY (inhalation) - Category 4  
 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2  
 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3  
 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1  
 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2  
 FLAMMABLE SOLIDS - Category 1  
 SKIN CORROSION/IRRITATION - Category 2  
 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE  
 (Respiratory tract irritation) - Category 3

### **10X Gene Expression Blocking Agent**

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

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

### **25X Fragmentation Buffer**

Acute Tox. 4, H302  
 Aquatic Acute 1, H400  
 Aquatic Chronic 1, H410  
 Aquatic Chronic 3, H412  
 Eye Irrit. 2, H319  
 Skin Irrit. 2, H315  
 STOT SE 3, H335

ACUTE TOXICITY (oral) - Category 4  
 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1  
 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1  
 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3  
 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2  
 SKIN CORROSION/IRRITATION - Category 2  
 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE  
 (Respiratory tract irritation) - Category 3

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#### Notice to reader

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