

SAFETY DATA SHEET



miRNA Hybridization Kit, Part Number 5190-0411

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

1.1 Product identifier

Product name : miRNA Hybridization Kit, Part Number 5190-0411
Part No. (Kit) : 5190-0411
Part No. : 10X GE Blocking Agent 5190-0415
Lyophilized
2X Hi-RPM Hybridization 5190-0416
Buffer

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

Identified uses	
Analytical chemistry.	
10X GE Blocking Agent Lyophilized	125 µg
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 : 10X GE Blocking Agent UVCB
Lyophilized
2X Hi-RPM Hybridization Mixture
Buffer

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

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 : 10X GE Blocking Agent Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 100%
Lyophilized
2X Hi-RPM Hybridization Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 10.9%
Buffer

Ingredients of unknown ecotoxicity : 10X GE Blocking Agent Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 100%
Lyophilized
2X Hi-RPM Hybridization Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 10.9%
Buffer

Date of issue/Date of revision : 23/02/2016

SECTION 2: Hazards identification

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

Hazard pictograms :



Signal word : 10X GE Blocking Agent Lyophilized No signal word.
2X Hi-RPM Hybridization Buffer Danger

Hazard statements : 10X GE Blocking Agent Lyophilized No known significant effects or critical hazards.
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 : 10X GE Blocking Agent Lyophilized Not applicable.
2X Hi-RPM Hybridization Buffer P280 - Wear protective gloves. Wear eye or face protection.
P273 - Avoid release to the environment.

Response : 10X GE Blocking Agent Lyophilized Not applicable.
2X Hi-RPM Hybridization Buffer P305 + P351 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Immediately call a POISON CENTER or physician.

Storage : 10X GE Blocking Agent Lyophilized Not applicable.
2X Hi-RPM Hybridization Buffer Not applicable.

Disposal : 10X GE Blocking Agent Lyophilized Not applicable.
2X Hi-RPM Hybridization Buffer P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients : **2X Hi-RPM Hybridization Buffer**
Lithium dodecyl sulphate

Supplemental label elements : 10X GE Blocking Agent Lyophilized Not applicable.
2X Hi-RPM Hybridization Buffer Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : 10X GE Blocking Agent Lyophilized Not applicable.
2X Hi-RPM Hybridization Buffer Not applicable.

Special packaging requirements

Tactile warning of danger : 10X GE Blocking Agent Lyophilized Not applicable.
2X Hi-RPM Hybridization Buffer Not applicable.

2.3 Other hazards

Date of issue/Date of revision : 23/02/2016

miRNA Hybridization Kit, Part Number 5190-0411

SECTION 2: Hazards identification

Other hazards which do not result in classification : 10X GE Blocking Agent Lyophilized None known.
 2X Hi-RPM Hybridization Buffer None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures : 10X GE Blocking Agent UVCB
 Lyophilized
 2X Hi-RPM Hybridization Buffer Mixture

Product/ingredient name	Identifiers	%	Classification	Type
10X GE Blocking Agent Lyophilized DNA		100	Not classified.	[A]
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 Skin Irrit. 2, H315 Eye Dam. 1, H318 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 2, H411 See Section 16 for the full text of the H statements declared above.	[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
- [A] Constituent
- [B] Impurity
- [C] Stabilising additive

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : 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.
 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.

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SECTION 4: First aid measures

Inhalation	: 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.
	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.
Skin contact	: 10X GE Blocking Agent Lyophilized	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	: 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.
	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	: 10X GE Blocking Agent Lyophilized	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.

SECTION 4: First aid measures**4.2 Most important symptoms and effects, both acute and delayed****Potential acute health effects**

Eye contact	: 10X GE Blocking Agent Lyophilized	No known significant effects or critical hazards.
	2X Hi-RPM Hybridization Buffer	Causes serious eye damage.
Inhalation	: 10X GE Blocking Agent Lyophilized	No known significant effects or critical hazards.
	2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.
Skin contact	: 10X GE Blocking Agent Lyophilized	No known significant effects or critical hazards.
	2X Hi-RPM Hybridization Buffer	Causes skin irritation.
Ingestion	: 10X GE Blocking Agent Lyophilized	No known significant effects or critical hazards.
	2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: 10X GE Blocking Agent Lyophilized	No specific data.
	2X Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: pain watering redness
Inhalation	: 10X GE Blocking Agent Lyophilized	No specific data.
	2X Hi-RPM Hybridization Buffer	No specific data.
Skin contact	: 10X GE Blocking Agent Lyophilized	No specific data.
	2X Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	: 10X GE Blocking Agent Lyophilized	No specific data.
	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	: 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.
	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	: 10X GE Blocking Agent Lyophilized	No specific treatment.
	2X Hi-RPM Hybridization Buffer	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	: 10X GE Blocking Agent Lyophilized	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	: 10X GE Blocking Agent Lyophilized	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	: 10X GE Blocking Agent Lyophilized	No specific fire or explosion hazard.
	: 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	: 10X GE Blocking Agent Lyophilized	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
	: 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	: 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.
	: 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	: 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.
	: 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	: 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.
	: 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.
For emergency responders	: 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".
	: 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

: 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).
: 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	: 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.
	: 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	: 10X GE Blocking Agent Lyophilized	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	: 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.
	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.
7.2 Conditions for safe storage, including any incompatibilities	: 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.
	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.
7.3 Specific end use(s)		
Recommendations	: 10X GE Blocking Agent Lyophilized	Industrial applications, Professional applications.
	2X Hi-RPM Hybridization Buffer	Industrial applications, Professional applications.
Industrial sector specific solutions	: 10X GE Blocking Agent Lyophilized	Not applicable.
	2X Hi-RPM Hybridization 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.

SECTION 8: Exposure controls/personal protection

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.

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	: 10X GE Blocking Agent	Solid. [lyophilised]
	Lyophilized	
	2X Hi-RPM	Liquid.
	Hybridization Buffer	
Colour	: 10X GE Blocking Agent	Not available.
	Lyophilized	
	2X Hi-RPM	Not available.
	Hybridization Buffer	
Odour	: 10X GE Blocking Agent	Not available.
	Lyophilized	
	2X Hi-RPM	Not available.
	Hybridization Buffer	

SECTION 9: Physical and chemical properties

Odour threshold	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not available. Not available.
pH	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not available. 6.1
Melting point/freezing point	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not available. Not available.
Initial boiling point and boiling range	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not available. Not available.
Flash point	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not available. Not available.
Evaporation rate	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not available. Not available.
Flammability (solid, gas)	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not available. Not applicable.
Upper/lower flammability or explosive limits	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not available. Not available.
Vapour pressure	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not available. Not available.
Vapour density	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not available. Not available.
Relative density	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not available. Not available.
Solubility(ies)	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not available. Not available.
Auto-ignition temperature	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not available. Not available.
Decomposition temperature	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not available. Not available.

SECTION 9: Physical and chemical properties

Viscosity	: 10X GE Blocking Agent	Not available.
	Lyophilized	
	2X Hi-RPM Hybridization Buffer	Not available.
Explosive properties	: 10X GE Blocking Agent	Not available.
	Lyophilized	
	2X Hi-RPM Hybridization Buffer	Not available.
Oxidising properties	: 10X GE Blocking Agent	Not available.
	Lyophilized	
	2X Hi-RPM Hybridization Buffer	Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: 10X GE Blocking Agent	No specific test data related to reactivity available for this product or its ingredients.
	Lyophilized	
	: 2X Hi-RPM Hybridization Buffer	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: 10X GE Blocking Agent	The product is stable.
	Lyophilized	
	: 2X Hi-RPM Hybridization Buffer	The product is stable.
10.3 Possibility of hazardous reactions	: 10X GE Blocking Agent	Under normal conditions of storage and use, hazardous reactions will not occur.
	Lyophilized	
	: 2X Hi-RPM Hybridization Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: 10X GE Blocking Agent	No specific data.
	Lyophilized	
	: 2X Hi-RPM Hybridization Buffer	No specific data.
10.5 Incompatible materials	: 10X GE Blocking Agent	May react or be incompatible with oxidising materials.
	Lyophilized	
	: 2X Hi-RPM Hybridization Buffer	May react or be incompatible with oxidising materials.
10.6 Hazardous decomposition products	: 10X GE Blocking Agent	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Lyophilized	
	: 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**

SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
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

Route	ATE value
2X Hi-RPM Hybridization Buffer	
Oral	6426.4 mg/kg
Dermal	91173.8 mg/kg
Inhalation (dusts and mists)	63.53 mg/l

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
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-disiloxany]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-disiloxany]propyl] ether	skin	Guinea pig	Not sensitizing

Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

Specific target organ toxicity (single exposure)

SECTION 11: Toxicological information

Product/ingredient name	Category	Route of exposure	Target organs
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 : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation : 10X GE Blocking Agent Lyophilized No known significant effects or critical hazards.
2X Hi-RPM Hybridization Buffer No known significant effects or critical hazards.

Ingestion : 10X GE Blocking Agent Lyophilized No known significant effects or critical hazards.
2X Hi-RPM Hybridization Buffer No known significant effects or critical hazards.

Skin contact : 10X GE Blocking Agent Lyophilized No known significant effects or critical hazards.
2X Hi-RPM Hybridization Buffer Causes skin irritation.

Eye contact : 10X GE Blocking Agent Lyophilized No known significant effects or critical hazards.
2X Hi-RPM Hybridization Buffer Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : 10X GE Blocking Agent Lyophilized No specific data.
2X Hi-RPM Hybridization Buffer No specific data.

Ingestion : 10X GE Blocking Agent Lyophilized No specific data.
2X Hi-RPM Hybridization Buffer Adverse symptoms may include the following:
stomach pains

Skin contact : 10X GE Blocking Agent Lyophilized No specific data.
2X Hi-RPM Hybridization Buffer Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Eye contact : 10X GE Blocking Agent Lyophilized 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

SECTION 11: Toxicological information

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	: 10X GE Blocking Agent Lyophilized	No known significant effects or critical hazards.
	: 2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.
Carcinogenicity	: 10X GE Blocking Agent Lyophilized	No known significant effects or critical hazards.
	: 2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.
Mutagenicity	: 10X GE Blocking Agent Lyophilized	No known significant effects or critical hazards.
	: 2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.
Teratogenicity	: 10X GE Blocking Agent Lyophilized	No known significant effects or critical hazards.
	: 2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.
Developmental effects	: 10X GE Blocking Agent Lyophilized	No known significant effects or critical hazards.
	: 2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.
Fertility effects	: 10X GE Blocking Agent Lyophilized	No known significant effects or critical hazards.
	: 2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
2X Hi-RPM Hybridization Buffer Lithium chloride Polyoxyethylene octyl phenyl ether	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
Oxirane, 2-methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[trimethylsilyloxy]-1-disiloxanyl]propyl] ether	EC50 1.1 mg/l	Daphnia	48 hours
	LC50 2.1 mg/l	Fish	96 hours

12.2 Persistence and degradability

Not available.

SECTION 12: Ecological information

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

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
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.

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.

SECTION 14: Transport information

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

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : 10X GE Blocking Agent Lyophilized : Not applicable.
2X Hi-RPM Hybridization Buffer : Not applicable.

Other EU regulations

Europe inventory : Not determined.

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.

SECTION 15: Regulatory information

Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: Not determined.
Turkey	: Not determined.
United States	: Not determined.

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

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

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

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

Classification	Justification
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 : **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.

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

Date of issue/ Date of revision : 23/02/2016
Date of previous issue : No previous validation.
Version : 1

Notice to reader

SECTION 16: Other information

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