

SAFETY DATA SHEET



miRNA Hybridization Kit, Part Number 5190-0411

Section 1. Identification

1.1 Product identifier

Product name : miRNA Hybridization Kit, Part Number 5190-0411
Part No. (Chemical Kit) : 5190-0411
Part No. : 10X GE Blocking Agent Lyophilized 5190-0415
 : 2X Hi-RPM Hybridization Buffer 5190-0416
Validation date : 2/23/2016

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

Material 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

Supplier/Manufacturer : Agilent Technologies, Inc.
 5301 Stevens Creek Blvd
 Santa Clara, CA 95051, USA
 800-227-9770

1.4 Emergency telephone number

In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status : 10X GE Blocking Agent Lyophilized While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
 : 2X Hi-RPM Hybridization Buffer This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

2X Hi-RPM Hybridization Buffer

H315 SKIN IRRITATION - Category 2
 H318 SERIOUS EYE DAMAGE - Category 1
 H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS)) - Category 2

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

2.2 GHS label elements

Hazard pictograms



Section 2. Hazards identification

Signal word	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	No signal word. Danger
Hazard statements	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards. GHS SYMBOL - Corrosion - Health hazard - H318 - Causes serious eye damage. H315 - Causes skin irritation. H373 - May cause damage to organs through prolonged or repeated exposure. (central nervous system (CNS))
Precautionary statements		
Prevention	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not applicable. P280 - Wear protective gloves. Wear eye or face protection. P260 - Do not breathe vapor. P264 - Wash hands thoroughly after handling.
Response	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not applicable. P314 - Get medical attention if you feel unwell. P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. P332 + P313 - If skin irritation occurs: Get medical attention. P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.
Storage	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not applicable. Not applicable.
Disposal	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	None known. None known.
2.3 Other hazards		
Hazards not otherwise classified	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	None known. None known.

Section 3. Composition/information on ingredients

Substance/mixture	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Mixture Mixture
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Ingredient name	%	CAS number
10X GE Blocking Agent Lyophilized DNA	100	
2X Hi-RPM Hybridization Buffer 4-Morpholineethanesulfonic acid, hydrate (1:1)	≤8.5	145224-94-8
Lithium chloride	≤7	7447-41-8
Lithium dodecyl sulphate	≤4	2044-56-6
Polyoxyethylene octyl phenyl ether	≤3	9002-93-1
Oxirane, 2-methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-(trimethylsilyloxy)-1-disiloxanyl]propyl] ether	≤3	134180-76-0

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

Section 3. Composition/information on ingredients

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.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

4.1 Description of necessary 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.
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.

Section 4. First aid measures

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.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

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

Over-exposure signs/symptoms

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

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

Notes to physician	: 10X GE Blocking Agent Lyophilized 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. 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 2X Hi-RPM Hybridization Buffer	No specific treatment. No specific treatment.
Protection of first-aiders	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	No action shall be taken involving any personal risk or without suitable training. 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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	None known. None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	No specific fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides 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

Section 5. Fire-fighting measures

Special protective actions 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.
	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.

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 spilled 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 spilled material. Do not breathe vapor 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 specialized 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 specialized 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 spilled 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 spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Section 6. Accidental release measures

Methods for cleaning up	: 10X GE Blocking Agent Lyophilized	Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled 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.

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 vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
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 unlabeled 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

Section 7. Handling and storage

that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled 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

Ingredient name	Exposure limits
2X Hi-RPM Hybridization Buffer 4-Morpholineethanesulfonic acid, hydrate (1:1) Lithium chloride Lithium dodecyl sulphate Polyoxyethylene octyl phenyl ether Oxirane, 2-methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]-1-disiloxanyl]propyl] ether	None. None. None. None. None.

8.2 Exposure controls

- Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapor 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.
- 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.

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.

Section 8. Exposure controls/personal protection

- 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.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : 10X GE Blocking Agent Lyophilized Solid. [lyophilised]
2X Hi-RPM Hybridization Buffer Liquid.
- Color** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Not available.
- Odor** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Not available.
- Odor threshold** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Not available.
- pH** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer 6.1
- Melting point** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Not available.
- Boiling point** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Not available.
- Flash point** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Not available.
- Evaporation rate** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Not available.
- Flammability (solid, gas)** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Not applicable.
- Lower and upper explosive (flammable) limits** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Not available.
- Vapor pressure** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Not available.
- Vapor density** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Not available.
- Relative density** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Not available.
- Solubility** : 10X GE Blocking Agent Lyophilized Soluble in the following materials: cold water and hot water.
2X Hi-RPM Hybridization Buffer Soluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Not available.
- Auto-ignition temperature** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Not available.
- Decomposition temperature** : 10X GE Blocking Agent Lyophilized Not available.
2X Hi-RPM Hybridization Buffer Not available.

Section 9. Physical and chemical properties

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

Section 10. Stability and reactivity

10.1 Reactivity : 10X GE Blocking Agent Lyophilized No specific test data related to reactivity available for this product or its ingredients.
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 Lyophilized The product is stable.
2X Hi-RPM Hybridization Buffer The product is stable.

10.3 Possibility of hazardous reactions : 10X GE Blocking Agent Lyophilized Under normal conditions of storage and use, hazardous reactions will not occur.
2X Hi-RPM Hybridization Buffer Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : 10X GE Blocking Agent Lyophilized No specific data.
2X Hi-RPM Hybridization Buffer No specific data.

10.5 Incompatible materials : 10X GE Blocking Agent Lyophilized May react or be incompatible with oxidizing materials.
2X Hi-RPM Hybridization Buffer May react or be incompatible with oxidizing materials.

10.6 Hazardous decomposition products : 10X GE Blocking Agent Lyophilized Under normal conditions of storage and use, hazardous decomposition products should not be produced.
2X Hi-RPM Hybridization Buffer Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
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-disiloxanyl]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	-

Irritation/Corrosion

Section 11. Toxicological information

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-disiloxanyl]propyl] ether	Skin - Mild irritant	Rabbit	-	-	-
	Eyes - Severe irritant	Rabbit	-	-	-

Sensitization

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

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

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 chloride	Category 3	Not applicable.	Respiratory tract irritation
Lithium dodecyl sulphate	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
2X Hi-RPM Hybridization Buffer Lithium chloride	Category 2	Oral	central nervous system (CNS)

Aspiration hazard

Not available.

Information on the likely routes of exposure : 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer Not available.
Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

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

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

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

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

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer No specific data. Adverse symptoms may include the following:
pain
watering
redness

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

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

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

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : 10X GE Blocking Agent Lyophilized 2X Hi-RPM Hybridization Buffer No known significant effects or critical hazards. May cause damage to organs through prolonged or repeated exposure.

Section 11. Toxicological information

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.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
2X Hi-RPM Hybridization Buffer	
Oral	6214.3 mg/kg
Dermal	19957.1 mg/kg
Inhalation (dusts and mists)	63.53 mg/l

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
2X Hi-RPM Hybridization Buffer			
Lithium chloride	Acute LC50 22000 µg/l Fresh water	Fish - Gila elegans - Swim-up	96 hours
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-[(trimethylsilyl)oxy]-1-disiloxanyl]propyl] ether	Acute LC50 4500 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	EC50 28.2 mg/l	Algae	72 hours
	EC50 1.1 mg/l	Daphnia	48 hours
	LC50 2.1 mg/l	Fish	96 hours

12.2 Persistence and degradability

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

Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
<input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer Polyoxyethylene octyl phenyl ether	4.86	-	high

12.4 Mobility in soil

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

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

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods : The generation of waste should be avoided or minimized 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

Regulatory information

DOT / IMDG / IATA : Not regulated.

Section 15. Regulatory information

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

U.S. Federal regulations : TSCA 8(a) PAIR: Polyoxyethylene octyl phenyl ether
 United States inventory (TSCA 8b): Not determined.
 Clean Water Act (CWA) 311: Edetic acid

Clean Air Act Section 112 : Not listed
 (b) Hazardous Air Pollutants (HAPs)

Section 15. Regulatory information

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
2X Hi-RPM Hybridization Buffer						
4-Morpholineethanesulfonic acid, hydrate (1:1)	≤8.5	Yes.	No.	No.	Yes.	No.
Lithium chloride	≤7	No.	No.	No.	Yes.	Yes.
Lithium dodecyl sulphate	≤4	Yes.	No.	No.	Yes.	No.
Polyoxyethylene octyl phenyl ether	≤3	No.	No.	No.	Yes.	No.
Oxirane, 2-methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]-1-disiloxanyl]propyl] ether	≤3	No.	No.	No.	Yes.	No.

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

No products were found.

Canada inventory : Not determined.

International regulations

International lists : **Australia inventory (AICS)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory (ENCS): Not determined.
Japan inventory (ISHL): Not determined.
Korea inventory: Not determined.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan Chemical Substances Inventory (TCSI): Not determined.
Turkey inventory: Not determined.

Section 15. Regulatory information

Chemical Weapons : Not listed

Convention List Schedule

I Chemicals

Chemical Weapons : Not listed

Convention List Schedule

II Chemicals

Chemical Weapons : Not listed

Convention List Schedule

III Chemicals

Section 16. Other information

History

Date of issue : 02/23/2016

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Version : 4

✔ Indicates information that has changed from previously issued version.

Notice to reader

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