

SAFETY DATA SHEET

Agilent Oligo aCGH Hybridization Kit (100), Part Number 5188-5380

Section 1. Identification

1.1 Product identifier

Product name : Agilent Oligo aCGH Hybridization Kit (100), Part Number 5188-5380
Part no. (chemical kit) : 5188-5380
Part no. : 2X Hi-RPM Hybridization Buffer 5188-6420
 10X aCGH Blocking Agent 5190-0405
Validation date : 10/23/2018

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

Material uses : Analytical reagent.
 2X Hi-RPM Hybridization Buffer 25 ml
 10X aCGH Blocking Agent 5 x 1.4 ml

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 : 2X Hi-RPM Hybridization Buffer This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
 10X aCGH Blocking Agent 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
 H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
 H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (cardiovascular system, central nervous system (CNS), kidneys, thyroid) - Category 2
 H402 AQUATIC HAZARD (ACUTE) - Category 3
 H412 AQUATIC HAZARD (LONG-TERM) - Category 3

10X aCGH Blocking Agent

H315 SKIN IRRITATION - Category 2
 H319 EYE IRRITATION - Category 2A
 H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Section 2. Hazards identification

Ingredients of unknown toxicity	: 2X 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 aCGH Blocking Agent	Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: > 60% 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: > 60%
	<input checked="" type="checkbox"/> 2X Hi-RPM Hybridization Buffer	Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 17.9%
	10X aCGH Blocking Agent	Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 83.2%

2.2 GHS label elements

Hazard pictograms : 2X Hi-RPM Hybridization Buffer



10X aCGH Blocking Agent



Signal word : 2X Hi-RPM Hybridization Buffer
10X aCGH Blocking Agent

Danger
Warning

Hazard statements : 2X Hi-RPM Hybridization Buffer

H318 - Causes serious eye damage.
H315 - Causes skin irritation.
H335 - May cause respiratory irritation.
H373 - May cause damage to organs through prolonged or repeated exposure. (cardiovascular system, central nervous system (CNS), kidneys, thyroid)
H412 - Harmful to aquatic life with long lasting effects.
H319 - Causes serious eye irritation.
H315 - Causes skin irritation.
H335 - May cause respiratory irritation.

10X aCGH Blocking Agent

Precautionary statements

Prevention : 2X Hi-RPM Hybridization Buffer

P280 - Wear protective gloves. Wear eye or face protection.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P260 - Do not breathe vapor.
P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves. Wear eye or face protection.
P271 - Use only outdoors or in a well-ventilated area.
P261 - Avoid breathing dust.

10X aCGH Blocking Agent

Section 2. Hazards identification

Response	: 2X Hi-RPM Hybridization Buffer	P264 - Wash hands thoroughly after handling. P314 - Get medical attention if you feel unwell. 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. 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.
	10X aCGH 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. 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 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
Storage	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	P405 - Store locked up. P405 - Store locked up.
Disposal	: 2X Hi-RPM Hybridization Buffer	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	10X aCGH Blocking Agent	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	None known. None known.
2.3 Other hazards		
Hazards not otherwise classified	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	None known. None known.

Section 3. Composition/information on ingredients

Substance/mixture	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Mixture Mixture
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Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
2X Hi-RPM Hybridization Buffer		
Lithium chloride	≤12	7447-41-8
Lithium dodecyl sulphate	≤6.3	2044-56-6
Polyoxyethylene octyl phenyl ether	≤6.3	9002-93-1
Oxirane, 2-methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-(trimethylsilyloxy)-1-disiloxanyl]propyl] ether	≤1.9	134180-76-0
10X aCGH Blocking Agent		
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	≥10 - ≤25	1185-53-1
Trometamol	≥10 - ≤25	77-86-1

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

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	: 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.
	10X aCGH 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.
Inhalation	: 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.
	10X aCGH 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

Section 4. First aid measures

		trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. 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	: 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.
	10X aCGH Blocking Agent	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.
Ingestion	: 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.
	10X aCGH Blocking Agent	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.

Section 4. First aid measures

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

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

Over-exposure signs/symptoms

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

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

Notes to physician	: 2X Hi-RPM Hybridization Buffer 10X aCGH 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. 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	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	No specific treatment. No specific treatment.

Section 4. First aid measures

Protection of first-aiders	: 2X Hi-RPM Hybridization Buffer 10X aCGH 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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. 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.
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See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

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

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	: 2 X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	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. No specific fire or explosion hazard.
Hazardous thermal decomposition products	: 2 X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds metal oxide/oxides Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides halogenated compounds

5.3 Advice for firefighters

Section 5. Fire-fighting measures

<p>Special protective actions for fire-fighters : 2X Hi-RPM Hybridization Buffer</p> <p style="padding-left: 150px;">10X aCGH Blocking Agent</p>	<p>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.</p> <p>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.</p>
<p>Special protective equipment for fire-fighters : 2X Hi-RPM Hybridization Buffer</p> <p style="padding-left: 150px;">10X aCGH Blocking Agent</p>	<p>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</p> <p>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</p>

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

<p>For non-emergency personnel : 2X Hi-RPM Hybridization Buffer</p> <p style="padding-left: 150px;">10X aCGH Blocking Agent</p>	<p>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.</p> <p>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. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.</p>
<p>For emergency responders : 2X Hi-RPM Hybridization Buffer</p> <p style="padding-left: 150px;">10X aCGH Blocking Agent</p>	<p>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".</p> <p>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".</p>

6.2 Environmental precautions

<p>: 2X Hi-RPM Hybridization Buffer</p> <p style="padding-left: 150px;">10X aCGH Blocking Agent</p>	<p>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). Water polluting material. May be harmful to the environment if released in large quantities.</p> <p>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).</p>
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Section 6. Accidental release measures

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : 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.

10X aCGH 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.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures : 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. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made 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 aCGH 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.

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

10X aCGH Blocking Agent

7.2 Conditions for safe storage, including any incompatibilities :

Section 7. Handling and storage

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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

10X aCGH 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Recommendations

: 2X Hi-RPM Hybridization Buffer
10X aCGH Blocking Agent

Industrial applications, Professional applications.
Industrial applications, Professional applications.

Industrial sector specific solutions

: 2X Hi-RPM Hybridization Buffer
10X aCGH Blocking Agent

Not applicable.
Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
2X Hi-RPM Hybridization Buffer	
Lithium chloride	None.
Lithium dodecyl sulphate	None.
Polyoxyethylene octyl phenyl ether	None.
Oxirane, 2-methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]-1-disiloxanyl]propyl] ether	None.
10X aCGH Blocking Agent	
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	None.
Trometamol	None.

8.2 Exposure controls

Appropriate engineering controls

: Use only with adequate ventilation. 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.

Section 8. Exposure controls/personal protection

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.

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.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Liquid. Solid. [lyophilized]
Color	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not available. Not available.
Odor	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not available. Not available.
Odor threshold	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not available. Not available.
pH	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	6 to 6.2 Not available.
Melting point	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not available. Not available.
Boiling point	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not available. Not available.
Flash point	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not available. Not available.

Section 9. Physical and chemical properties

Evaporation rate	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not available. Not available.
Flammability (solid, gas)	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not applicable. Not available.
Lower and upper explosive (flammable) limits	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not available. Not available.
Vapor pressure	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not available. Not available.
Vapor density	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not available. Not available.
Relative density	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not available. Not available.
Solubility	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Easily 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	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not available. Not available.
Auto-ignition temperature	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not available. Not available.
Decomposition temperature	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not available. Not available.
Viscosity	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Not available. Not available.

Section 10. Stability and reactivity

10.1 Reactivity	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	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.
10.2 Chemical stability	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	The product is stable. The product is stable.
10.3 Possibility of hazardous reactions	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	No specific data. No specific data.
10.5 Incompatible materials	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials.
10.6 Hazardous decomposition products	: 2X Hi-RPM Hybridization Buffer 10X aCGH Blocking Agent	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
2X 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-(trimethylsilyl)oxy]-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	-
10X aCGH Blocking Agent				
Trometamol	LD50 Dermal	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-

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-(trimethylsilyl)oxy]-1-disiloxanyl]propyl] ether	Skin - Mild irritant	Rabbit	-	-	-
	Eyes - Severe irritant	Rabbit	-	-	-
10X aCGH Blocking Agent					
Trometamol	Skin - Moderate irritant	Rabbit	-	25 Percent	-
	Skin - Severe irritant	Rabbit	-	500 milligrams	-

Sensitization

Section 11. Toxicological information

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

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)

Name	Category	Route of exposure	Target organs
2X Hi-RPM Hybridization Buffer Lithium chloride	Category 3	Not applicable.	Respiratory tract irritation
Lithium dodecyl sulphate	Category 3	Not applicable.	Respiratory tract irritation
Polyoxyethylene octyl phenyl ether	Category 3	Not applicable.	Respiratory tract irritation
10X aCGH Blocking Agent 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation
Trometamol	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
2X Hi-RPM Hybridization Buffer Lithium chloride	Category 2	Not determined	cardiovascular system, central nervous system (CNS), kidneys and thyroid

Aspiration hazard

Not available.

Information on the likely routes of exposure

: 2X Hi-RPM Hybridization Buffer
10X aCGH Blocking Agent

Routes of entry anticipated: Oral, Dermal, Inhalation.
Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

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

Symptoms related to the physical, chemical and toxicological characteristics

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

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

Section 11. Toxicological information

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

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
2X Hi-RPM Hybridization Buffer	
Oral	2546 mg/kg
Dermal	9381.9 mg/kg
Inhalation (dusts and mists)	16.33 mg/l
10X aCGH Blocking Agent	
Oral	5030 mg/kg

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
2X Hi-RPM Hybridization Buffer			
Lithium chloride	Acute EC50 112 mg/l Fresh water Acute EC50 249 mg/l Fresh water Acute LC50 17000 µg/l Fresh water	Algae Daphnia Fish - Ptychocheilus lucius - Swim-up	72 hours 48 hours 96 hours
Polyoxyethylene octyl phenyl ether	Acute NOEC 25 mg/l Fresh water Acute NOEC 63.4 mg/l Fresh water Acute NOEC 59.4 mg/l Fresh water Acute LC50 5.85 mg/l Fresh water	Algae Daphnia Fish Crustaceans - Ceriodaphnia rigaudi - Neonate	72 hours 48 hours 96 hours 48 hours
Oxirane, 2-methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]-1-disiloxanyl]propyl] ether	Acute LC50 11.2 mg/l Fresh water Acute LC50 4500 µg/l Fresh water EC50 28.2 mg/l	Daphnia - Daphnia magna - Neonate Fish - Pimephales promelas Algae	48 hours 96 hours 72 hours
10X aCGH Blocking Agent			
Trometamol	EC50 1.1 mg/l 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

Section 12. Ecological information

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

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
2X Hi-RPM Hybridization Buffer Polyoxyethylene octyl phenyl ether	4.86	-	high
10X aCGH Blocking Agent Trometamol	-1.56	-	low

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

DOT / TDG / Mexico / IMDG / IATA : Not regulated.

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.

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

U.S. Federal regulations : **TSCA 8(a) PAIR:** Polyoxyethylene octyl phenyl ether
TSCA 8(a) CDR Exempt/Partial exemption: Not determined

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

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	: <input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (cardiovascular system, central nervous system (CNS), kidneys, thyroid) - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
	: 10X aCGH Blocking Agent	

Composition/information on ingredients

Section 15. Regulatory information

Name	%	Classification
2X Hi-RPM Hybridization Buffer		
Lithium chloride	≤12	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (cardiovascular system, central nervous system (CNS), kidneys, thyroid) - Category 2 COMBUSTIBLE DUSTS
Dilithium N,N'-ethylenebis[N-(carboxymethyl)aminoacetate]	≤10	COMBUSTIBLE DUSTS
Lithium dodecyl sulphate	≤6.3	FLAMMABLE SOLIDS - Category 1 COMBUSTIBLE DUSTS ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Polyoxyethylene octyl phenyl ether	≤6.3	ACUTE TOXICITY (oral) - Category 4 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Oxirane, 2-methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]-1-disiloxanyl]propyl] ether	≤1.9	ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A
10X aCGH Blocking Agent		
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	≥10 - ≤25	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Trometamol	≥10 - ≤25	COMBUSTIBLE DUSTS SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

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.

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

Section 15. Regulatory information

Not listed.

Inventory list

Australia	: Not determined.
Canada	: Not determined.
China	: Not determined.
Europe	: Not determined.
Japan	: Japan inventory (ENCS): Not determined. Japan inventory (ISHL): Not determined.
Malaysia	: Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: Not determined.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: Not determined.
Viet Nam	: Not determined.

Section 16. Other information

History

Date of issue	: 10/23/2018
Date of previous issue	: 05/21/2018
Version	: 3.1

Procedure used to derive the classification

Classification	Justification
2X Hi-RPM Hybridization Buffer SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (cardiovascular system, central nervous system (CNS), kidneys, thyroid) - Category 2 AQUATIC HAZARD (ACUTE) - Category 3 AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method
10X aCGH Blocking Agent SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method Calculation method Calculation method

Indicates information that has changed from previously issued version.

Notice to reader

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