

SAFETY DATA SHEET



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

Section 1. Identification

Product identifier : Hi-RPM Gene Expression Hybridization Kit, Large Volume, Part Number 5190-0404
Part No. (Chemical Kit) : 5190-0404
Part No. : Hi-RPM Hybridization Buffer 5188-6415
 10X Gene Expression Blocking Agent 5188-5973
 25X Fragmentation Buffer 5188-1196

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

Analytical reagent.

Hi-RPM Hybridization Buffer 25 ml
 10X Gene Expression Blocking Agent lyophilised pellets - 4 mg
 25X Fragmentation Buffer 10 ml

Supplier/Manufacturer : Agilent Technologies Australia Pty Ltd
 679 Springvale Road
 Mulgrave
 Victoria 3170, Australia
 1800 802 402

Emergency telephone number (with hours of operation) : CHEMTREC®: (61)-290372994

Section 2. Hazard(s) identification

Classification of the substance or mixture

2X Hi-RPM Hybridization Buffer

H315 SKIN CORROSION/IRRITATION - Category 2
 H318 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
 H402 ACUTE AQUATIC HAZARD - Category 3
 H412 LONG-TERM AQUATIC HAZARD - Category 3

10X Gene Expression Blocking Agent

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

25X Fragmentation Buffer

H315 SKIN CORROSION/IRRITATION - Category 2
 H319 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A
 H402 ACUTE AQUATIC HAZARD - Category 3

<input checked="" type="checkbox"/> Hi-RPM Hybridization Buffer	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 6.4%
10X Gene Expression Blocking Agent	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 30%
25X Fragmentation Buffer	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 7.3%

Section 2. Hazard(s) identification

2X Hi-RPM Hybridization Buffer	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 9.4%
10X Gene Expression Blocking Agent	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 30%
25X Fragmentation Buffer	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 7.3%

GHS label elements

Hazard pictograms

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Signal word

2X Hi-RPM Hybridization Buffer	DANGER
10X Gene Expression Blocking Agent	WARNING
25X Fragmentation Buffer	WARNING

Hazard statements

2X Hi-RPM Hybridization Buffer	H318 - Causes serious eye damage. H315 - Causes skin irritation. H412 - Harmful to aquatic life with long lasting effects. H319 - Causes serious eye irritation.
10X Gene Expression Blocking Agent	H315 - Causes skin irritation. H335 - May cause respiratory irritation. H319 - Causes serious eye irritation. H315 - Causes skin irritation. H402 - Harmful to aquatic life.
25X Fragmentation Buffer	H319 - Causes serious eye irritation. H315 - Causes skin irritation. H402 - Harmful to aquatic life.

Precautionary statements

General

: Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention

: 2X Hi-RPM Hybridization Buffer
P280 - Wear protective gloves. Wear eye or face protection.
P273 - Avoid release to the environment.
P264 - Wash hands thoroughly after handling.

10X Gene Expression Blocking Agent
P280 - Wear protective gloves. Wear eye or face protection.
P271 - Use only outdoors or in a well-ventilated area.
P261 - Avoid breathing dust.
P264 - Wash hands thoroughly after handling.

25X Fragmentation Buffer
P280 - Wear protective gloves. Wear eye or face protection.
P273 - Avoid release to the environment.
P264 - Wash hands thoroughly after handling.

Response

: 2X Hi-RPM Hybridization Buffer
P302 + P352 + P362 + P363 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing 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.
P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
P302 + P352 + P362 + P363 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated

Section 2. Hazard(s) identification

		clothing. Wash contaminated clothing 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. P302 + P352 + P362 + P363 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing 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.
	25X Fragmentation Buffer	
Storage	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not applicable. P405 - Store locked up.
Disposal	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. 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 Gene Expression Blocking Agent 25X Fragmentation Buffer	Not applicable. Not applicable. Not applicable.
Other hazards which do not result in classification	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	None known. None known. None known.

Section 3. Composition and ingredient information

Substance/mixture	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Mixture Mixture Mixture
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CAS number/other identifiers

Section 3. Composition and ingredient information

Ingredient name	% (w/w)	CAS number
2X Hi-RPM Hybridization Buffer		
4-Morpholineethanesulfonic acid, hydrate (1:1)	≤8.8	145224-94-8
Lithium chloride	≤6.9	7447-41-8
Lithium dodecyl sulphate	≤4.1	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-disiloxany]propyl] ether	≤3	134180-76-0
10X Gene Expression Blocking Agent		
Trometamol	≥30 - ≤60	77-86-1
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	≥30 - ≤60	1185-53-1
25X Fragmentation Buffer		
Trometamol	<10	77-86-1
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	<10	1185-53-1
Zinc acetate, dihydrate	<1	5970-45-6

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

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 Gene Expression Blocking Agent	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
	25X Fragmentation Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
Inhalation	: 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 Gene Expression Blocking Agent	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing

Section 4. First aid measures

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. 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.

25X Fragmentation Buffer

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

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 Gene Expression 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.

25X Fragmentation Buffer

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.

Section 4. First aid measures

10X Gene Expression
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.

25X Fragmentation Buffer

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Causes serious eye damage. Causes serious eye irritation. Causes serious eye irritation.
Inhalation	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	No known significant effects or critical hazards. May cause respiratory irritation. No known significant effects or critical hazards.
Skin contact	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Causes skin irritation. Causes skin irritation. Causes skin irritation.
Ingestion	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Over-exposure signs/symptoms

Section 4. First aid measures

Eye contact	: 2X Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: pain watering redness
	10X Gene Expression Blocking Agent	Adverse symptoms may include the following: pain or irritation watering redness
	25X Fragmentation Buffer	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: 2X Hi-RPM Hybridization Buffer	No specific data.
	10X Gene Expression Blocking Agent	Adverse symptoms may include the following: respiratory tract irritation coughing
	25X Fragmentation Buffer	No specific data.
Skin contact	: 2X Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	10X Gene Expression Blocking Agent	Adverse symptoms may include the following: irritation redness
	25X Fragmentation Buffer	Adverse symptoms may include the following: irritation redness
Ingestion	: 2X Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: stomach pains
	10X Gene Expression Blocking Agent	No specific data.
	25X Fragmentation Buffer	No specific data.
<u>Indication of immediate medical attention and special treatment needed, if necessary</u>		
Notes to physician	: 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.
	10X Gene Expression Blocking Agent	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	25X Fragmentation Buffer	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	: 2X Hi-RPM Hybridization Buffer	No specific treatment.
	10X Gene Expression Blocking Agent	No specific treatment.
	25X Fragmentation Buffer	No specific treatment.

Section 4. First aid measures

Protection of first-aiders	: 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.
	10X Gene Expression Blocking Agent	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	25X Fragmentation Buffer	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Use an extinguishing agent suitable for the surrounding fire. 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 Gene Expression Blocking Agent 25X Fragmentation Buffer	None known. None known. None known.
Specific hazards arising from the chemical	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. No specific fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression 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

Section 5. Firefighting measures

	25X Fragmentation Buffer	phosphorus oxides halogenated compounds Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds
Special protective actions for fire-fighters	: 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.
	10X Gene Expression Blocking Agent	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	25X Fragmentation Buffer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	: 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.
	10X Gene Expression Blocking Agent	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	25X Fragmentation Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

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

Section 6. Accidental release measures

For emergency responders	: 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".
	10X Gene Expression Blocking Agent	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	25X Fragmentation Buffer	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions	: 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.
	10X Gene Expression Blocking Agent	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	25X Fragmentation Buffer	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and material 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 Gene Expression Blocking Agent	Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
	25X Fragmentation Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

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 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
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Section 7. Handling and storage

	10X Gene Expression Blocking Agent	containers retain product residue and can be hazardous. Do not reuse container. Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	25X Fragmentation Buffer	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. Keep in the original container or an 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.
	10X Gene Expression Blocking Agent	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
	25X Fragmentation Buffer	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	: 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.
	10X Gene Expression Blocking Agent	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
	25X Fragmentation Buffer	Store in accordance with local regulations. Store in

Section 7. Handling and storage

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.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

None.

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

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

Appearance

Physical state	: 2X Hi-RPM Hybridization Buffer	Liquid.
	: 10X Gene Expression Blocking Agent	Solid. [lyophilised pellets]
	: 25X Fragmentation Buffer	Liquid.
Colour	: 2X Hi-RPM Hybridization Buffer	Yellow. [Light]
	: 10X Gene Expression Blocking Agent	Not available.
	: 25X Fragmentation Buffer	Yellow. [Light]
Odour	: 2X Hi-RPM Hybridization Buffer	Not available.
	: 10X Gene Expression Blocking Agent	Odourless.
	: 25X Fragmentation Buffer	Odourless.
Odour threshold	: 2X Hi-RPM Hybridization Buffer	Not available.
	: 10X Gene Expression Blocking Agent	Not available.
	: 25X Fragmentation Buffer	Not available.
pH	: 2X Hi-RPM Hybridization Buffer	6.1
	: 10X Gene Expression Blocking Agent	Not available.
	: 25X Fragmentation Buffer	7.6
Melting point	: 2X Hi-RPM Hybridization Buffer	Not available.
	: 10X Gene Expression Blocking Agent	Not available.
	: 25X Fragmentation Buffer	Not available.
Boiling point	: 2X Hi-RPM Hybridization Buffer	Not available.
	: 10X Gene Expression Blocking Agent	Not available.
	: 25X Fragmentation Buffer	Not available.
Flash point	: 2X Hi-RPM Hybridization Buffer	Not available.
	: 10X Gene Expression Blocking Agent	Not available.
	: 25X Fragmentation Buffer	Not available.
Evaporation rate	: 2X Hi-RPM Hybridization Buffer	Not available.
	: 10X Gene Expression Blocking Agent	Not available.
	: 25X Fragmentation Buffer	Not available.
Flammability (solid, gas)	: 2X Hi-RPM Hybridization Buffer	Not applicable.
	: 10X Gene Expression Blocking Agent	Not available.
	: 25X Fragmentation Buffer	Not applicable.
Lower and upper explosive (flammable) limits	: 2X Hi-RPM Hybridization Buffer	Not available.
	: 10X Gene Expression Blocking Agent	Not available.
	: 25X Fragmentation Buffer	Not available.

Section 9. Physical and chemical properties

Vapour pressure	: 2X Hi-RPM Hybridization Buffer	Not available.
	10X Gene Expression Blocking Agent	Not available.
	25X Fragmentation Buffer	Not available.
Vapour density	: 2X Hi-RPM Hybridization Buffer	Not available.
	10X Gene Expression Blocking Agent	Not available.
	25X Fragmentation Buffer	Not available.
Relative density	: 2X Hi-RPM Hybridization Buffer	Not available.
	10X Gene Expression Blocking Agent	Not available.
	25X Fragmentation Buffer	Not available.
Solubility	: 2X Hi-RPM Hybridization Buffer	Soluble in the following materials: cold water and hot water.
	10X Gene Expression Blocking Agent	Soluble in the following materials: cold water and hot water.
	25X Fragmentation Buffer	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: 2X Hi-RPM Hybridization Buffer	Not available.
	10X Gene Expression Blocking Agent	Not available.
	25X Fragmentation Buffer	Not available.
Auto-ignition temperature	: 2X Hi-RPM Hybridization Buffer	Not available.
	10X Gene Expression Blocking Agent	Not available.
	25X Fragmentation Buffer	Not available.
Decomposition temperature	: 2X Hi-RPM Hybridization Buffer	Not available.
	10X Gene Expression Blocking Agent	Not available.
	25X Fragmentation Buffer	Not available.
Viscosity	: 2X Hi-RPM Hybridization Buffer	Not available.
	10X Gene Expression Blocking Agent	Not available.
	25X Fragmentation Buffer	Not available.

Section 10. Stability and reactivity

Reactivity	: 2X Hi-RPM Hybridization Buffer	No specific test data related to reactivity available for this product or its ingredients.
	10X Gene Expression Blocking Agent	No specific test data related to reactivity available for this product or its ingredients.
	25X Fragmentation Buffer	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: 2X Hi-RPM Hybridization Buffer	The product is stable.
	10X Gene Expression Blocking Agent	The product is stable.
	25X Fragmentation Buffer	The product is stable.

Section 10. Stability and reactivity

Possibility of hazardous reactions	: 2X Hi-RPM Hybridization Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	: 10X Gene Expression Blocking Agent	Under normal conditions of storage and use, hazardous reactions will not occur.
	: 25X Fragmentation Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: 2X Hi-RPM Hybridization Buffer	No specific data.
	: 10X Gene Expression Blocking Agent	No specific data.
	: 25X Fragmentation Buffer	No specific data.
Incompatible materials	: 2X Hi-RPM Hybridization Buffer	May react or be incompatible with oxidising materials.
	: 10X Gene Expression Blocking Agent	May react or be incompatible with oxidising materials.
	: 25X Fragmentation Buffer	May react or be incompatible with oxidising materials.
Hazardous decomposition products	: 2X Hi-RPM Hybridization Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	: 10X Gene Expression Blocking Agent	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	: 25X Fragmentation Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

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	-
Lithium dodecyl sulphate	LD50 Oral	Rat	>5000 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	-
10X Gene Expression Blocking Agent				
Trometamol	LD50 Dermal	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
25X Fragmentation Buffer				
Trometamol	LD50 Dermal	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
Zinc acetate, dihydrate	LD50 Oral	Rat	794 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	-	-	-
10X Gene Expression Blocking Agent					
Trometamol	Skin - Moderate irritant	Rabbit	-	25 Percent	-
	Skin - Severe irritant	Rabbit	-	500 milligrams	-
25X Fragmentation Buffer					
Trometamol	Skin - Moderate irritant	Rabbit	-	25 Percent	-
	Skin - Severe irritant	Rabbit	-	500 milligrams	-
Zinc acetate, dihydrate	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitisation

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)

Section 11. Toxicological information

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
10X Gene Expression Blocking Agent Trometamol	Category 3	Not applicable.	Respiratory tract irritation
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation
25X Fragmentation Buffer Trometamol	Category 3	Not applicable.	Respiratory tract irritation
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

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 likely routes of exposure	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation. Routes of entry anticipated: Oral, Dermal, Inhalation. Routes of entry anticipated: Oral, Dermal, Inhalation.
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Potential acute health effects

Eye contact	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Causes serious eye damage. Causes serious eye irritation. Causes serious eye irritation.
Inhalation	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	No known significant effects or critical hazards. May cause respiratory irritation. No known significant effects or critical hazards.
Skin contact	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	Causes skin irritation. Causes skin irritation. Causes skin irritation.
Ingestion	: 2X Hi-RPM Hybridization Buffer 10X Gene Expression Blocking Agent 25X Fragmentation Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Section 11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: 2X Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: pain watering redness
	: 10X Gene Expression Blocking Agent	Adverse symptoms may include the following: pain or irritation watering redness
	: 25X Fragmentation Buffer	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: 2X Hi-RPM Hybridization Buffer	No specific data.
	: 10X Gene Expression Blocking Agent	Adverse symptoms may include the following: respiratory tract irritation coughing
	: 25X Fragmentation Buffer	No specific data.
Skin contact	: 2X Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	: 10X Gene Expression Blocking Agent	Adverse symptoms may include the following: irritation redness
	: 25X Fragmentation Buffer	Adverse symptoms may include the following: irritation redness
Ingestion	: 2X Hi-RPM Hybridization Buffer	Adverse symptoms may include the following: stomach pains
	: 10X Gene Expression Blocking Agent	No specific data.
	: 25X Fragmentation Buffer	No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General	: 2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.
	: 10X Gene Expression Blocking Agent	No known significant effects or critical hazards.
	: 25X Fragmentation Buffer	No known significant effects or critical hazards.

Section 11. Toxicological information

Carcinogenicity	: 2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.
	10X Gene Expression Blocking Agent	No known significant effects or critical hazards.
	25X Fragmentation Buffer	No known significant effects or critical hazards.
Mutagenicity	: 2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.
	10X Gene Expression Blocking Agent	No known significant effects or critical hazards.
	25X Fragmentation Buffer	No known significant effects or critical hazards.
Teratogenicity	: 2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.
	10X Gene Expression Blocking Agent	No known significant effects or critical hazards.
	25X Fragmentation Buffer	No known significant effects or critical hazards.
Developmental effects	: 2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.
	10X Gene Expression Blocking Agent	No known significant effects or critical hazards.
	25X Fragmentation Buffer	No known significant effects or critical hazards.
Fertility effects	: 2X Hi-RPM Hybridization Buffer	No known significant effects or critical hazards.
	10X Gene Expression Blocking Agent	No known significant effects or critical hazards.
	25X Fragmentation Buffer	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
2X Hi-RPM Hybridization Buffer	
Oral	7404.3 mg/kg
Dermal	23054 mg/kg
Inhalation (dusts and mists)	71.29 mg/l

Section 12. Ecological information

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	Fish - Pimephales promelas	96 hours
	EC50 28.2 mg/l	Algae	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
10X Gene Expression Blocking Agent Trometamol	Acute EC50 >980 mg/l Fresh water	Daphnia	48 hours

Section 12. Ecological information

25X Fragmentation Buffer Trometamol	Acute NOEC 520 mg/l Fresh water	Daphnia	48 hours
	Acute EC50 >980 mg/l Fresh water	Daphnia	48 hours
	Acute NOEC 520 mg/l Fresh water	Daphnia	48 hours

Persistence and degradability

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

Bioaccumulative potential

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

Mobility in soil

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

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

Section 13. Disposal considerations

Disposal methods : 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. 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 spill material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Regulatory information

ADG / IMDG / IATA : Not regulated as Dangerous Goods according to the ADG Code .

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

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

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

Australia inventory (AICS) : Not determined.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

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.
Turkey	: Not determined.
United States	: Not determined.

Section 16. Any other relevant information

History

Date of issue/Date of revision	: 27/10/2016
Date of previous issue	: 30/09/2016.
Version	: 3.1

Section 16. Any other relevant information

Key to abbreviations	: ADG = Australian Dangerous Goods ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) NOHSC = National Occupational Health and Safety Commission SUSMP = Standard Uniform Schedule of Medicine and Poisons UN = United Nations
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Procedure used to derive the classification

Classification	Justification
2X Hi-RPM Hybridization Buffer Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Acute 3, H402 Aquatic Chronic 3, H412	Calculation method Calculation method Calculation method Calculation method
10X Gene Expression Blocking Agent Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335	Calculation method Calculation method Calculation method
25X Fragmentation Buffer Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Aquatic Acute 3, H402	Calculation method Calculation method Calculation method

References : Not available.

✔ Indicates information that has changed from previously issued version.

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