

SAFETY DATA SHEET



T3 RNA Polymerase, Part Number 600111

Section 1. Identification

Product identifier : T3 RNA Polymerase, Part Number 600111
Part no. (chemical kit) : 600111
Part no. : 5X Transcription Buffer 600110-82
 RNA Polymerase Dilution Buffer 600110-83
 T3 RNA Polymerase 600111-51

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

Material uses : Analytical reagent.
 5X Transcription Buffer 1 ml
 RNA Polymerase Dilution Buffer 1 ml
 T3 RNA Polymerase 0.1 ml (5000 U 50 U/μl)

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

5X Transcription Buffer
 H412 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

GHS label elements

Signal word : 5X Transcription Buffer No signal word.
 RNA Polymerase Dilution Buffer No signal word.
 T3 RNA Polymerase No signal word.

Hazard statements : **5X Transcription Buffer** H412 - Harmful to aquatic life with long lasting effects.
 RNA Polymerase Dilution Buffer No known significant effects or critical hazards.
 T3 RNA Polymerase No known significant effects or critical hazards.

Precautionary statements

Prevention : **5X Transcription Buffer** P273 - Avoid release to the environment.
 RNA Polymerase Dilution Buffer Not applicable.
 T3 RNA Polymerase Not applicable.

Response : 5X Transcription Buffer Not applicable.
 RNA Polymerase Dilution Buffer Not applicable.
 T3 RNA Polymerase Not applicable.

Storage : 5X Transcription Buffer Not applicable.
 RNA Polymerase Dilution Buffer Not applicable.
 T3 RNA Polymerase Not applicable.

Section 2. Hazard(s) identification

Disposal	: 5X Transcription Buffer	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	RNA Polymerase Dilution Buffer	Not applicable.
	T3 RNA Polymerase	Not applicable.
Supplemental label elements		
Additional warning phrases	: 5X Transcription Buffer	Not applicable.
	RNA Polymerase Dilution Buffer	Not applicable.
	T3 RNA Polymerase	Not applicable.
Other hazards which do not result in classification	: 5X Transcription Buffer	None known.
	RNA Polymerase Dilution Buffer	None known.
	T3 RNA Polymerase	None known.

Section 3. Composition and ingredient information

Substance/mixture	: 5X Transcription Buffer	Mixture
	RNA Polymerase Dilution Buffer	Mixture
	T3 RNA Polymerase	Mixture

CAS number/other identifiers

Ingredient name	% (w/w)	CAS number
5X Transcription Buffer Magnesium chloride	≤1	7786-30-3
RNA Polymerase Dilution Buffer Glycerol	≥30 - ≤60	56-81-5
T3 RNA Polymerase Glycerol	≥30 - ≤60	56-81-5

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	: 5X Transcription 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 if irritation occurs.
	RNA Polymerase Dilution Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	T3 RNA Polymerase	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Section 4. First aid measures

Inhalation	: 5X Transcription 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.
	RNA Polymerase Dilution Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	T3 RNA Polymerase	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	: 5X Transcription Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	RNA Polymerase Dilution Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	T3 RNA Polymerase	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: 5X Transcription Buffer	Wash out mouth with water. Remove dentures if any. 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.
	RNA Polymerase Dilution Buffer	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	T3 RNA Polymerase	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: 5X Transcription Buffer	No known significant effects or critical hazards.
	RNA Polymerase Dilution Buffer	No known significant effects or critical hazards.
	T3 RNA Polymerase	No known significant effects or critical hazards.

Section 4. First aid measures

Inhalation	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No specific data. No specific data.
Inhalation	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No specific data. No specific data.
Skin contact	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No specific data. No specific data.
Ingestion	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No specific data. No specific data.

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

Notes to physician	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	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. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No specific treatment. No specific treatment. No specific treatment.
Protection of first-aiders	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	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. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : 5X Transcription Buffer Use an extinguishing agent suitable for the surrounding fire.
RNA Polymerase Dilution Buffer Use an extinguishing agent suitable for the surrounding fire.
T3 RNA Polymerase Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : 5X Transcription Buffer None known.
RNA Polymerase Dilution Buffer None known.
T3 RNA Polymerase None known.

Specific hazards arising from the chemical

: 5X Transcription 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.
RNA Polymerase Dilution Buffer In a fire or if heated, a pressure increase will occur and the container may burst.
T3 RNA Polymerase In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products

: 5X Transcription Buffer Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds
metal oxide/oxides
RNA Polymerase Dilution Buffer Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
T3 RNA Polymerase Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters

: 5X Transcription 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.
RNA Polymerase Dilution 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.
T3 RNA Polymerase 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

: 5X Transcription Buffer Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
RNA Polymerase Dilution Buffer Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
T3 RNA Polymerase Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive

Section 5. Firefighting measures

pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: <input checked="" type="checkbox"/> 5X Transcription 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.
	RNA Polymerase Dilution 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. Put on appropriate personal protective equipment.
	T3 RNA Polymerase	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
For emergency responders	: 5X Transcription 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".
	RNA Polymerase Dilution 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".
	T3 RNA Polymerase	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	: <input checked="" type="checkbox"/> 5X Transcription 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.
	RNA Polymerase Dilution 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).
	T3 RNA Polymerase	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).

Methods and material for containment and cleaning up

Section 6. Accidental release measures

Methods for cleaning up	: 5X Transcription 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.
	RNA Polymerase Dilution 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.
	T3 RNA Polymerase	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	: 5X Transcription 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.
	RNA Polymerase Dilution Buffer	Put on appropriate personal protective equipment (see Section 8).
	T3 RNA Polymerase	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	: 5X Transcription 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.
	RNA Polymerase Dilution 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.
	T3 RNA Polymerase	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.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : 5X Transcription Buffer

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

RNA Polymerase Dilution Buffer

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

T3 RNA Polymerase

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

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
RNA Polymerase Dilution Buffer Glycerol	Safe Work Australia (Australia, 12/2019). TWA: 10 mg/m ³ 8 hours.
T3 RNA Polymerase Glycerol	Safe Work Australia (Australia, 12/2019). TWA: 10 mg/m ³ 8 hours.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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

Section 8. Exposure controls and personal protection

- 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: safety glasses with side-shields.
- 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 and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	: 5X Transcription Buffer	Liquid.
	RNA Polymerase Dilution Buffer	Liquid.
	T3 RNA Polymerase	Liquid.
Colour	: 5X Transcription Buffer	Not available.
	RNA Polymerase Dilution Buffer	Not available.
	T3 RNA Polymerase	Not available.
Odour	: 5X Transcription Buffer	Not available.
	RNA Polymerase Dilution Buffer	Not available.
	T3 RNA Polymerase	Not available.
Odour threshold	: 5X Transcription Buffer	Not available.
	RNA Polymerase Dilution Buffer	Not available.
	T3 RNA Polymerase	Not available.
pH	: 5X Transcription Buffer	8
	RNA Polymerase Dilution Buffer	7.7
	T3 RNA Polymerase	7.7
Melting point/freezing point	: 5X Transcription Buffer	0°C (32°F)
	RNA Polymerase Dilution Buffer	Not available.
	T3 RNA Polymerase	Not available.

Section 9. Physical and chemical properties and safety characteristics

Boiling point, initial boiling point, and boiling range : 5X Transcription Buffer 100°C (212°F)
RNA Polymerase Dilution Buffer Not available.
T3 RNA Polymerase Not available.

Flash point : 5X Transcription Buffer Not available.
RNA Polymerase Dilution Buffer Not available.
T3 RNA Polymerase [Product does not sustain combustion.]

Ingredient name	Closed cup			Open cup		
	°C	°F	Method	°C	°F	Method
RNA Polymerase Dilution Buffer						
Edetic acid	>100	>212	DIN 51758			
(R*,R*) -1,4-Dimercaptobutane-2,3-diol	>110	>230				
T3 RNA Polymerase						
Edetic acid	>100	>212	DIN 51758			
(R*,R*) -1,4-Dimercaptobutane-2,3-diol	>110	>230				

Evaporation rate : 5X Transcription Buffer Not available.
RNA Polymerase Dilution Buffer Not available.
T3 RNA Polymerase Not available.

Flammability : 5X Transcription Buffer Not applicable.
RNA Polymerase Dilution Buffer Not applicable.
T3 RNA Polymerase Not applicable.

Lower and upper explosion limit/flammability limit : 5X Transcription Buffer Not available.
RNA Polymerase Dilution Buffer Not available.
T3 RNA Polymerase Not available.

Vapour pressure :

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
5X Transcription Buffer						
water	23.8	3.2		92.258	12.3	
Trometamol	<0.00075006	<0.0001				
RNA Polymerase Dilution Buffer						
water	23.8	3.2		92.258	12.3	
Glycerol	0.000075	0.00001		0.0025	0.00033	
T3 RNA Polymerase						
water	23.8	3.2		92.258	12.3	
Glycerol	0.000075	0.00001		0.0025	0.00033	

Relative vapour density : 5X Transcription Buffer Not available.
RNA Polymerase Dilution Buffer Not available.
T3 RNA Polymerase Not available.

Section 9. Physical and chemical properties and safety characteristics

Relative density	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	Not available. Not available. Not available.
Solubility	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	Not applicable. Not applicable. Not applicable.

Auto-ignition temperature	: Ingredient name	°C	°F	Method
	RNA Polymerase Dilution Buffer			
	Glycerol	370	698	
	Edetic acid	>400	>752	VDI 2263
	T3 RNA Polymerase			
	Glycerol	370	698	
	Edetic acid	>400	>752	VDI 2263

Decomposition temperature	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	Not available. Not available. Not available.
Viscosity	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	Not available. Not available. Not available.

Particle characteristics

Median particle size	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	Not applicable. Not applicable. Not applicable.
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Section 10. Stability and reactivity

Reactivity	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	The product is stable. The product is stable. The product is stable.
Possibility of hazardous reactions	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.

Section 10. Stability and reactivity

Conditions to avoid	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No specific data. No specific data. No specific data.
Incompatible materials	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials.
Hazardous decomposition products	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
5X Transcription Buffer Magnesium chloride	LD50 Dermal	Rat - Male, Female Rat	>2000 mg/kg	-
	LD50 Oral		2800 mg/kg	-
RNA Polymerase Dilution Buffer Glycerol	LD50 Oral	Rat	12600 mg/kg	-
	LD50 Oral	Rat	12600 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
RNA Polymerase Dilution Buffer Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
T3 RNA Polymerase Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-

Sensitisation

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

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Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	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	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Inhalation	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No known significant effects or critical hazards. 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	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No specific data. No specific data. No specific data.
Inhalation	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No specific data. No specific data. No specific data.
Skin contact	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No specific data. No specific data. No specific data.
Ingestion	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No specific data. No specific data. 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.

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Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards.
Carcinogenicity	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards.
Mutagenicity	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards.
Reproductive toxicity	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
5X Transcription Buffer Magnesium chloride	2800	N/A	N/A	N/A	N/A
RNA Polymerase Dilution Buffer Glycerol	12600	N/A	N/A	N/A	N/A
T3 RNA Polymerase Glycerol	12600	N/A	N/A	N/A	N/A

Other information	: 5X Transcription Buffer RNA Polymerase Dilution Buffer T3 RNA Polymerase	Adverse symptoms may include the following: May cause skin sensitisation. Not available. Adverse symptoms may include the following: May cause skin sensitisation.
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Section 12. Ecological information

Toxicity

Section 12. Ecological information

Product/ingredient name	Result	Species	Exposure
5X Transcription Buffer Magnesium chloride	Acute EC50 >100 mg/l Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Acute EC50 180000 µg/l Fresh water	Crustaceans - Eudiaptomus padanus ssp. padanus - Adult	48 hours
	Acute IC50 6.8 mg/l Fresh water	Aquatic plants - Lemna aequinoctialis	96 hours
	Acute LC50 32000 µg/l Fresh water	Daphnia - Daphnia hyalina - Adult	48 hours
	Acute LC50 2120 mg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute NOEC 100 mg/l Fresh water	Algae - Desmodesmus subspicatus	72 hours
RNA Polymerase Dilution Buffer Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
T3 RNA Polymerase Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
RNA Polymerase Dilution Buffer Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
T3 RNA Polymerase Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
RNA Polymerase Dilution Buffer Glycerol	-1.76	-	low
T3 RNA Polymerase Glycerol	-1.76	-	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 spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport 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.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

5

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : Not determined.

Canada : At least one component is not listed in DSL but all such components are listed in NDSL.

China : All components are listed or exempted.

Europe : All components are listed or exempted.

Japan : **Japan inventory (CSCL):** Not determined.
Japan inventory (ISHL): Not determined.

New Zealand : All components are listed or exempted.

Philippines : Not determined.

Republic of Korea : Not determined.

Section 15. Regulatory information

Taiwan	: All components are listed or exempted.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: <input checked="" type="checkbox"/> All components are active or exempted.
Viet Nam	: <input checked="" type="checkbox"/> All components are listed or exempted.

Section 16. Any other relevant information

History

Date of issue/Date of revision : 19/05/2022

Date of previous issue : 09/09/2019

Version : 6

Key to abbreviations

: ADG = Australian Dangerous Goods
 ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
 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)
 N/A = Not available
 SUSMP = Standard Uniform Schedule of Medicine and Poisons
 UN = United Nations

Procedure used to derive the classification

Classification	Justification
5X Transcription Buffer LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3	Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

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