

SAFETY DATA SHEET



T7 RNA Polymerase 5000U, Part Number 600123

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

1.1 Product identifier

Product name : T7 RNA Polymerase 5000U, Part Number 600123
Part No. (Kit) : 600123
Part No. : T7 RNA Polymerase 600123-51
RNA Polymerase 600110-83
Dilution Buffer
5X Transcription Buffer 600110-82

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

Identified uses	
Analytical reagent.	
T7 RNA Polymerase	100 µl (5000 U 50 U/µl)
RNA Polymerase Dilution Buffer	1 ml
5X Transcription Buffer	1 ml

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000

e-mail address of person responsible for this SDS : pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation) : CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : T7 RNA Polymerase Mixture
RNA Polymerase Mixture
Dilution Buffer
5X Transcription Buffer Mixture

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

Not classified.

Ingredients of unknown toxicity : T7 RNA Polymerase Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%
RNA Polymerase Dilution Buffer Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%
5X Transcription Buffer Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10%

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

Date of issue/Date of revision : 30/05/2017

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SECTION 2: Hazards identification

2.2 Label elements

Signal word	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	No signal word. No signal word. No signal word.
Hazard statements	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Precautionary statements

Prevention	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Not applicable. Not applicable. Not applicable.
Response	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Not applicable. Not applicable. Not applicable.
Storage	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Not applicable. Not applicable. Not applicable.
Disposal	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Not applicable. Not applicable. Not applicable.
Hazardous ingredients	: 5X Transcription Buffer	Not applicable.
Supplemental label elements	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Not applicable. Not applicable. Safety data sheet available on request.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Not applicable. Not applicable. Not applicable.

Special packaging requirements

Tactile warning of danger	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Not applicable. Not applicable. Not applicable.
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2.3 Other hazards

Other hazards which do not result in classification	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	None known. None known. None known.
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SECTION 3: Composition/information on ingredients

3.1 Substances : T7 RNA Polymerase Mixture
 RNA Polymerase Dilution Buffer Mixture
 5X Transcription Buffer Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
T7 RNA Polymerase Glycerol	REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified.	[2]
RNA Polymerase Dilution Buffer Glycerol	REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified.	[2]
5X Transcription Buffer Trometamol	EC: 201-064-4 CAS: 77-86-1	≤3	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
Sodium chloride	EC: 231-598-3 CAS: 7647-14-5	≤3	Eye Irrit. 2, H319 See Section 16 for the full text of the H statements declared above.	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription 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. 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. 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.
Inhalation	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for

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SECTION 4: First aid measures

		48 hours.
Skin contact	: T7 RNA Polymerase	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	RNA Polymerase Dilution Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	5X Transcription Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: T7 RNA Polymerase	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	RNA Polymerase Dilution Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	5X Transcription Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Protection of first-aiders	: T7 RNA Polymerase	No action shall be taken involving any personal risk or without suitable training.
	RNA Polymerase Dilution Buffer	No action shall be taken involving any personal risk or without suitable training.
	5X Transcription Buffer	No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact	: T7 RNA Polymerase	No known significant effects or critical hazards.
	RNA Polymerase Dilution Buffer	No known significant effects or critical hazards.
	5X Transcription Buffer	No known significant effects or critical hazards.
Inhalation	: T7 RNA Polymerase	No known significant effects or critical hazards.
	RNA Polymerase Dilution Buffer	No known significant effects or critical hazards.
	5X Transcription Buffer	No known significant effects or critical hazards.
Skin contact	: T7 RNA Polymerase	No known significant effects or critical hazards.
	RNA Polymerase Dilution Buffer	No known significant effects or critical hazards.
	5X Transcription Buffer	No known significant effects or critical hazards.
Ingestion	: T7 RNA Polymerase	No known significant effects or critical hazards.
	RNA Polymerase Dilution Buffer	No known significant effects or critical hazards.
	5X Transcription Buffer	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: T7 RNA Polymerase	No specific data.
	RNA Polymerase Dilution Buffer	No specific data.
	5X Transcription Buffer	No specific data.

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SECTION 4: First aid measures

Inhalation	:	T7 RNA Polymerase	No specific data.
		RNA Polymerase	No specific data.
		Dilution Buffer	
		5X Transcription Buffer	No specific data.
Skin contact	:	T7 RNA Polymerase	No specific data.
		RNA Polymerase	No specific data.
		Dilution Buffer	
		5X Transcription Buffer	No specific data.
Ingestion	:	T7 RNA Polymerase	No specific data.
		RNA Polymerase	No specific data.
		Dilution Buffer	
		5X Transcription Buffer	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	:	T7 RNA Polymerase	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		RNA Polymerase	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Dilution Buffer	
		5X Transcription 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	:	T7 RNA Polymerase	No specific treatment.
		RNA Polymerase	No specific treatment.
		Dilution Buffer	
		5X Transcription Buffer	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	T7 RNA Polymerase	Use an extinguishing agent suitable for the surrounding fire.
		RNA Polymerase	Use an extinguishing agent suitable for the surrounding fire.
		Dilution Buffer	
		5X Transcription Buffer	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	:	T7 RNA Polymerase	None known.
		RNA Polymerase	None known.
		Dilution Buffer	
		5X Transcription Buffer	None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	:	T7 RNA Polymerase	In a fire or if heated, a pressure increase will occur and the container may burst.
		RNA Polymerase	In a fire or if heated, a pressure increase will occur and the container may burst.
		Dilution Buffer	
		5X Transcription Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	:	T7 RNA Polymerase	Decomposition products may include the following materials: carbon dioxide carbon monoxide
		RNA Polymerase	Decomposition products may include the following materials: carbon dioxide carbon monoxide
		Dilution Buffer	
		5X Transcription Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides

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SECTION 5: Firefighting measures

5.3 Advice for firefighters

Special precautions for fire-fighters	: T7 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.
	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.
	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.
Special protective equipment for fire-fighters	: T7 RNA Polymerase	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: T7 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.
	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.
	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. Put on appropriate personal protective equipment.
For emergency responders	: T7 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".
	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".
	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".

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SECTION 6: Accidental release measures

6.2 Environmental precautions	: T7 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).
	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).
	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).

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	: T7 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.
	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.
	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.

6.4 Reference to other sections	: See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.
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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures	: T7 RNA Polymerase	Put on appropriate personal protective equipment (see Section 8).
	RNA Polymerase Dilution Buffer	Put on appropriate personal protective equipment (see Section 8).
	5X Transcription Buffer	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	: T7 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.
	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.
	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

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SECTION 7: Handling and storage

Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage	: T7 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.
	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.
	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.

7.3 Specific end use(s)

Recommendations	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications.
Industrial sector specific solutions	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Not applicable. Not applicable. Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
T7 RNA Polymerase Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist
RNA Polymerase Dilution Buffer Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist

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SECTION 8: Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

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

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: 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.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	T7 RNA Polymerase	Liquid.
		RNA Polymerase	Liquid.
		Dilution Buffer	
		5X Transcription Buffer	Liquid.
Colour	:	T7 RNA Polymerase	Not available.
		RNA Polymerase	Not available.
		Dilution Buffer	
		5X Transcription Buffer	Not available.
Odour	:	T7 RNA Polymerase	Not available.
		RNA Polymerase	Not available.
		Dilution Buffer	
		5X Transcription Buffer	Not available.
Odour threshold	:	T7 RNA Polymerase	Not available.
		RNA Polymerase	Not available.
		Dilution Buffer	
		5X Transcription Buffer	Not available.
pH	:	T7 RNA Polymerase	7.7
		RNA Polymerase	7.7
		Dilution Buffer	
		5X Transcription Buffer	8
Melting point/freezing point	:	T7 RNA Polymerase	Not available.
		RNA Polymerase	Not available.
		Dilution Buffer	
		5X Transcription Buffer	0°C
Initial boiling point and boiling range	:	T7 RNA Polymerase	Not available.
		RNA Polymerase	Not available.
		Dilution Buffer	
		5X Transcription Buffer	100°C
Flash point	:	T7 RNA Polymerase	Not available.
		RNA Polymerase	Not available.
		Dilution Buffer	
		5X Transcription Buffer	Not available.
Evaporation rate	:	T7 RNA Polymerase	Not available.
		RNA Polymerase	Not available.
		Dilution Buffer	
		5X Transcription Buffer	Not available.
Flammability (solid, gas)	:	T7 RNA Polymerase	Not applicable.
		RNA Polymerase	Not applicable.
		Dilution Buffer	
		5X Transcription Buffer	Not applicable.
Upper/lower flammability or explosive limits	:	T7 RNA Polymerase	Not available.
		RNA Polymerase	Not available.
		Dilution Buffer	
		5X Transcription Buffer	Not available.
Vapour pressure	:	T7 RNA Polymerase	Not available.
		RNA Polymerase	Not available.
		Dilution Buffer	
		5X Transcription Buffer	Not available.
Vapour density	:	T7 RNA Polymerase	Not available.
		RNA Polymerase	Not available.
		Dilution Buffer	
		5X Transcription Buffer	Not available.

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SECTION 9: Physical and chemical properties

Relative density	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Not available. Not available. Not available.
Solubility(ies)	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Easily soluble in the following materials: cold water and hot water. 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	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Not available. Not available. Not available.
Auto-ignition temperature	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Not available. Not available. Not available.
Decomposition temperature	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Not available. Not available. Not available.
Viscosity	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Not available. Not available. Not available.
Explosive properties	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Not available. Not available. Not available.
Oxidising properties	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	Not available. Not available. Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	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.
10.2 Chemical stability	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	The product is stable. The product is stable. The product is stable.
10.3 Possibility of hazardous reactions	: T7 RNA Polymerase RNA Polymerase Dilution Buffer 5X Transcription Buffer	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.

Date of issue/Date of revision : 30/05/2017

11/17

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SECTION 10: Stability and reactivity

- 10.4 Conditions to avoid** : T7 RNA Polymerase No specific data.
 RNA Polymerase No specific data.
 Dilution Buffer
 5X Transcription Buffer No specific data.
- 10.5 Incompatible materials** : T7 RNA Polymerase May react or be incompatible with oxidising materials.
 RNA Polymerase May react or be incompatible with oxidising materials.
 Dilution Buffer
 5X Transcription Buffer May react or be incompatible with oxidising materials.
- 10.6 Hazardous decomposition products** : T7 RNA Polymerase Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 RNA Polymerase Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 Dilution Buffer Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 5X Transcription Buffer Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
5X Transcription Buffer Trometamol	LD50 Dermal	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

Acute toxicity estimates

Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
5X Transcription Buffer Trometamol	Skin - Moderate irritant	Rabbit	-	25 Percent	-
	Skin - Severe irritant	Rabbit	-	500 milligrams	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitiser

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
5X Transcription Buffer Trometamol	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

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SECTION 11: Toxicological information

Information on likely routes of exposure : T7 RNA Polymerase Routes of entry anticipated: Oral, Dermal, Inhalation.
RNA Polymerase Routes of entry anticipated: Oral, Dermal, Inhalation.
Dilution Buffer
5X Transcription Buffer Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation : T7 RNA Polymerase No known significant effects or critical hazards.
RNA Polymerase No known significant effects or critical hazards.
Dilution Buffer
5X Transcription Buffer No known significant effects or critical hazards.

Ingestion : T7 RNA Polymerase No known significant effects or critical hazards.
RNA Polymerase No known significant effects or critical hazards.
Dilution Buffer
5X Transcription Buffer No known significant effects or critical hazards.

Skin contact : T7 RNA Polymerase No known significant effects or critical hazards.
RNA Polymerase No known significant effects or critical hazards.
Dilution Buffer
5X Transcription Buffer No known significant effects or critical hazards.

Eye contact : T7 RNA Polymerase No known significant effects or critical hazards.
RNA Polymerase No known significant effects or critical hazards.
Dilution Buffer
5X Transcription Buffer No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : T7 RNA Polymerase No specific data.
RNA Polymerase No specific data.
Dilution Buffer
5X Transcription Buffer No specific data.

Ingestion : T7 RNA Polymerase No specific data.
RNA Polymerase No specific data.
Dilution Buffer
5X Transcription Buffer No specific data.

Skin contact : T7 RNA Polymerase No specific data.
RNA Polymerase No specific data.
Dilution Buffer
5X Transcription Buffer No specific data.

Eye contact : T7 RNA Polymerase No specific data.
RNA Polymerase No specific data.
Dilution Buffer
5X Transcription 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

General : T7 RNA Polymerase No known significant effects or critical hazards.
RNA Polymerase No known significant effects or critical hazards.
Dilution Buffer
5X Transcription Buffer No known significant effects or critical hazards.

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SECTION 11: Toxicological information

Carcinogenicity	: T7 RNA Polymerase	No known significant effects or critical hazards.
	RNA Polymerase	No known significant effects or critical hazards.
	Dilution Buffer	
	5X Transcription Buffer	No known significant effects or critical hazards.
Mutagenicity	: T7 RNA Polymerase	No known significant effects or critical hazards.
	RNA Polymerase	No known significant effects or critical hazards.
	Dilution Buffer	
	5X Transcription Buffer	No known significant effects or critical hazards.
Teratogenicity	: T7 RNA Polymerase	No known significant effects or critical hazards.
	RNA Polymerase	No known significant effects or critical hazards.
	Dilution Buffer	
	5X Transcription Buffer	No known significant effects or critical hazards.
Developmental effects	: T7 RNA Polymerase	No known significant effects or critical hazards.
	RNA Polymerase	No known significant effects or critical hazards.
	Dilution Buffer	
	5X Transcription Buffer	No known significant effects or critical hazards.
Fertility effects	: T7 RNA Polymerase	No known significant effects or critical hazards.
	RNA Polymerase	No known significant effects or critical hazards.
	Dilution Buffer	
	5X Transcription Buffer	No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
5X Transcription Buffer Trometamol Sodium chloride	Acute EC50 >980 mg/l Fresh water	Daphnia	48 hours
	Acute NOEC 520 mg/l Fresh water	Daphnia	48 hours
	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1.56 g/L Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks	

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
5X Transcription Buffer Trometamol	-1.56	-	low

12.4 Mobility in soil

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

Mobility : Not available.

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SECTION 12: Ecological information

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.
vPvB : Not applicable.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

ADR/RID / IMDG / IATA : Not regulated.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

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

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	T7 RNA Polymerase	Not applicable.
	RNA Polymerase Dilution	Not applicable.
	Buffer	
	5X Transcription Buffer	Not applicable.

Other EU regulations

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SECTION 15: Regulatory information

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

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.

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 (ENCS) : Not determined. Japan inventory (ISHL) : Not determined.
Malaysia	: Not determined.
New Zealand	: All components are listed or exempted.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: All components are listed or exempted.
Thailand	: <input checked="" type="checkbox"/> Not determined.
Turkey	: Not determined.
United States	: All components are listed or exempted.
Viet Nam	: <input checked="" type="checkbox"/> Not determined.

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

SECTION 16: Other information

Indicates information that has changed from previously issued version.

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

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SECTION 16: Other information

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

Classification	Justification
Not classified.	

Full text of abbreviated H statements

5X Transcription Buffer H315 H319 H335	Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.
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Full text of classifications [CLP/GHS]

5X Transcription Buffer Eye Irrit. 2, H319 Skin Irrit. 2, H315 STOT SE 3, H335	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3
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