

# SAFETY DATA SHEET



SP6 RNA Polymerase - 3000U, Part Number 600151

## Section 1. Identification

### 1.1 Product identifier

**Product name** : SP6 RNA Polymerase - 3000U, Part Number 600151  
**Part No. (Chemical Kit)** : 600151  
**Part No.** : 5X Transcription Buffer 600110-82  
 RNA Polymerase Dilution Buffer 600110-83  
 SP6 RNA Polymerase 600151-51  
**Validation date** : 5/18/2017

### 1.2 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  
 SP6 RNA Polymerase 0.06 ml (3000 U 50 U/μl)

### 1.3 Details of the supplier of the safety data sheet

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

### 1.4 Emergency telephone number

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

## Section 2. Hazards identification

### 2.1 Classification of the substance or mixture

**OSHA/HCS status** : 5X Transcription Buffer While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.  
 RNA Polymerase Dilution Buffer This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).  
 SP6 RNA Polymerase This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Classification of the substance or mixture

**RNA Polymerase Dilution Buffer**  
 H320 EYE IRRITATION - Category 2B

**SP6 RNA Polymerase**  
 H320 EYE IRRITATION - Category 2B

**Ingredients of unknown toxicity** : 5X Transcription Buffer Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10%  
 RNA Polymerase Dilution Buffer Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 30 - 60%  
 SP6 RNA Polymerase Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 30 - 60%

## Section 2. Hazards identification

### 2.2 GHS label elements

<b>Signal word</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	No signal word. Warning Warning
<b>Hazard statements</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	No known significant effects or critical hazards. H320 - Causes eye irritation. H320 - Causes eye irritation.
<b>Precautionary statements</b>		
<b>Prevention</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	Not applicable. P264 - Wash hands thoroughly after handling. P264 - Wash hands thoroughly after handling.
<b>Response</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer  SP6 RNA Polymerase	Not applicable. 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. 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.
<b>Storage</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	Not applicable. Not applicable. Not applicable.
<b>Disposal</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	Not applicable. Not applicable. Not applicable.
<b>Supplemental label elements</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	None known. None known. None known.
<b>2.3 Other hazards</b>		
<b>Hazards not otherwise classified</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	None known. None known. None known.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	Mixture Mixture Mixture
--------------------------	---	-------------------------------

Ingredient name	%	CAS number
<b>5X Transcription Buffer</b> Trometamol Sodium chloride	≤3 ≤3	77-86-1 7647-14-5
<b>RNA Polymerase Dilution Buffer</b> Glycerol	≥50 - ≤75	56-81-5
<b>SP6 RNA Polymerase</b> Glycerol	≥50 - ≤75	56-81-5

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

### Section 3. Composition/information on ingredients

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

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

### Section 4. First aid measures

#### 4.1 Description of necessary first aid measures

<b>Eye contact</b>	: 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.
	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. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.
	SP6 RNA Polymerase	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. If irritation persists, get medical attention.
<b>Inhalation</b>	: 5X Transcription Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	RNA Polymerase Dilution 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.
	SP6 RNA Polymerase	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.

## Section 4. First aid measures

<b>Skin contact</b>	: 5X Transcription Buffer	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. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	SP6 RNA Polymerase	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.
<b>Ingestion</b>	: 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.
	RNA Polymerase Dilution 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.
	SP6 RNA Polymerase	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.

### 4.2 Most important symptoms/effects, acute and delayed

#### Potential acute health effects

<b>Eye contact</b>	: 5X Transcription Buffer	No known significant effects or critical hazards.
	RNA Polymerase Dilution Buffer	Causes eye irritation.
	SP6 RNA Polymerase	Causes eye irritation.

## Section 4. First aid measures

<b>Inhalation</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Skin contact</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Ingestion</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	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

<b>Eye contact</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer  SP6 RNA Polymerase	No specific data. Adverse symptoms may include the following: irritation watering redness Adverse symptoms may include the following: irritation watering redness
<b>Inhalation</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	No specific data. No specific data. No specific data.
<b>Skin contact</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	No specific data. No specific data. No specific data.
<b>Ingestion</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	No specific data. No specific data. No specific data.

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

<b>Notes to physician</b>	: 5X Transcription Buffer  RNA Polymerase Dilution Buffer  SP6 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.
<b>Specific treatments</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	No specific treatment. No specific treatment. No specific treatment.
<b>Protection of first-aiders</b>	: 5X Transcription Buffer  RNA Polymerase Dilution Buffer  SP6 RNA Polymerase	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. 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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: 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.
	SP6 RNA Polymerase	Use an extinguishing agent suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	: 5X Transcription Buffer	None known.
	RNA Polymerase Dilution Buffer	None known.
	SP6 RNA Polymerase	None known.

### 5.2 Special hazards arising from the substance or mixture

<b>Specific hazards arising from the chemical</b>	: 5X Transcription Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	RNA Polymerase Dilution Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	SP6 RNA Polymerase	In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous thermal decomposition products</b>	: 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
	SP6 RNA Polymerase	Decomposition products may include the following materials: carbon dioxide carbon monoxide

### 5.3 Advice for firefighters

<b>Special protective actions for fire-fighters</b>	: 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.
	SP6 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.
<b>Special protective equipment for fire-fighters</b>	: 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.
	SP6 RNA Polymerase	Fire-fighters should wear appropriate protective

## Section 5. Fire-fighting measures

equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

: 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 spilled 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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

SP6 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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

#### For emergency responders

: 5X Transcription Buffer

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

RNA Polymerase Dilution Buffer

SP6 RNA Polymerase

#### 6.2 Environmental precautions

: 5X Transcription Buffer

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

RNA Polymerase Dilution Buffer

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

SP6 RNA Polymerase

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers,

## Section 6. Accidental release measures

waterways, soil or air).

### 6.3 Methods and materials for containment and cleaning up

**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.

SP6 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

### 7.1 Precautions for safe handling

**Protective measures** : 5X Transcription Buffer

Put on appropriate personal protective equipment (see Section 8).

RNA Polymerase Dilution Buffer

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. 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.

SP6 RNA Polymerase

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. 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** : 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.

SP6 RNA Polymerase

Eating, drinking and smoking should be prohibited



## Section 7. Handling and storage

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

### 7.2 Conditions for safe storage, including any incompatibilities

: 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 unlabeled containers. Use appropriate containment to avoid environmental contamination.

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 unlabeled containers. Use appropriate containment to avoid environmental contamination.

SP6 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 unlabeled containers. Use appropriate containment to avoid environmental contamination.

### 7.3 Specific end use(s)

#### Recommendations

: 5X Transcription Buffer  
RNA Polymerase Dilution Buffer  
SP6 RNA Polymerase

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

#### Industrial sector specific solutions

: 5X Transcription Buffer  
RNA Polymerase Dilution Buffer  
SP6 RNA Polymerase

Not applicable.  
Not applicable.  
Not applicable.

## Section 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

## Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
<b>5X Transcription Buffer</b> Trometamol Sodium chloride	None. None.
<b>RNA Polymerase Dilution Buffer</b> Glycerol	<b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Total dust
<b>SP6 RNA Polymerase</b> Glycerol	<b>OSHA PEL (United States, 6/2016).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction TWA: 15 mg/m <sup>3</sup> 8 hours. Form: Total dust
	<b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Total dust
	<b>OSHA PEL (United States, 6/2016).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction TWA: 15 mg/m <sup>3</sup> 8 hours. Form: Total dust

### 8.2 Exposure controls

#### 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

#### Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

#### Skin protection

##### Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

##### Body protection

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

## Section 8. Exposure controls/personal protection

- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	: 5X Transcription Buffer	Liquid.
	: RNA Polymerase Dilution Buffer	Liquid.
	: SP6 RNA Polymerase	Liquid.
<b>Color</b>	: 5X Transcription Buffer	Not available.
	: RNA Polymerase Dilution Buffer	Not available.
	: SP6 RNA Polymerase	Not available.
<b>Odor</b>	: 5X Transcription Buffer	Not available.
	: RNA Polymerase Dilution Buffer	Not available.
	: SP6 RNA Polymerase	Not available.
<b>Odor threshold</b>	: 5X Transcription Buffer	Not available.
	: RNA Polymerase Dilution Buffer	Not available.
	: SP6 RNA Polymerase	Not available.
<b>pH</b>	: 5X Transcription Buffer	8
	: RNA Polymerase Dilution Buffer	7.7
	: SP6 RNA Polymerase	7.7
<b>Melting point</b>	: 5X Transcription Buffer	0°C (32°F)
	: RNA Polymerase Dilution Buffer	Not available.
	: SP6 RNA Polymerase	Not available.
<b>Boiling point</b>	: 5X Transcription Buffer	100°C (212°F)
	: RNA Polymerase Dilution Buffer	Not available.
	: SP6 RNA Polymerase	Not available.
<b>Flash point</b>	: 5X Transcription Buffer	Not available.
	: RNA Polymerase Dilution Buffer	Not available.
	: SP6 RNA Polymerase	Not available.
<b>Evaporation rate</b>	: 5X Transcription Buffer	Not available.
	: RNA Polymerase Dilution Buffer	Not available.
	: SP6 RNA Polymerase	Not available.
<b>Flammability (solid, gas)</b>	: 5X Transcription Buffer	Not applicable.
	: RNA Polymerase Dilution Buffer	Not applicable.
	: SP6 RNA Polymerase	Not applicable.
<b>Lower and upper explosive (flammable) limits</b>	: 5X Transcription Buffer	Not available.
	: RNA Polymerase Dilution Buffer	Not available.
	: SP6 RNA Polymerase	Not available.
<b>Vapor pressure</b>	: 5X Transcription Buffer	Not available.
	: RNA Polymerase Dilution Buffer	Not available.
	: SP6 RNA Polymerase	Not available.
<b>Vapor density</b>	: 5X Transcription Buffer	Not available.
	: RNA Polymerase Dilution Buffer	Not available.
	: SP6 RNA Polymerase	Not available.
<b>Relative density</b>	: 5X Transcription Buffer	Not available.
	: RNA Polymerase Dilution Buffer	Not available.
	: SP6 RNA Polymerase	Not available.

## Section 9. Physical and chemical properties

<b>Solubility</b>	: 5X Transcription Buffer	Easily soluble in the following materials: cold water and hot water.
	RNA Polymerase Dilution Buffer	Soluble in the following materials: cold water and hot water.
	SP6 RNA Polymerase	Soluble in the following materials: cold water and hot water.
<b>Partition coefficient: n-octanol/water</b>	: 5X Transcription Buffer	Not available.
	RNA Polymerase Dilution Buffer	Not available.
	SP6 RNA Polymerase	Not available.
<b>Auto-ignition temperature</b>	: 5X Transcription Buffer	Not available.
	RNA Polymerase Dilution Buffer	Not available.
	SP6 RNA Polymerase	Not available.
<b>Decomposition temperature</b>	: 5X Transcription Buffer	Not available.
	RNA Polymerase Dilution Buffer	Not available.
	SP6 RNA Polymerase	Not available.
<b>Viscosity</b>	: 5X Transcription Buffer	Not available.
	RNA Polymerase Dilution Buffer	Not available.
	SP6 RNA Polymerase	Not available.

## Section 10. Stability and reactivity

<b>10.1 Reactivity</b>	: 5X Transcription Buffer	No specific test data related to reactivity available for this product or its ingredients.
	RNA Polymerase Dilution Buffer	No specific test data related to reactivity available for this product or its ingredients.
	SP6 RNA Polymerase	No specific test data related to reactivity available for this product or its ingredients.
<b>10.2 Chemical stability</b>	: 5X Transcription Buffer	The product is stable.
	RNA Polymerase Dilution Buffer	The product is stable.
	SP6 RNA Polymerase	The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	: 5X Transcription Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	RNA Polymerase Dilution Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	SP6 RNA Polymerase	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>10.4 Conditions to avoid</b>	: 5X Transcription Buffer	No specific data.
	RNA Polymerase Dilution Buffer	No specific data.
	SP6 RNA Polymerase	No specific data.
<b>10.5 Incompatible materials</b>	: 5X Transcription Buffer	May react or be incompatible with oxidizing materials.
	RNA Polymerase Dilution Buffer	May react or be incompatible with oxidizing materials.
	SP6 RNA Polymerase	May react or be incompatible with oxidizing materials.

## Section 10. Stability and reactivity

<b>10.6 Hazardous decomposition products</b>	: 5X Transcription Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	RNA Polymerase Dilution Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	SP6 RNA Polymerase	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
<b>5X Transcription Buffer</b> Trometamol	LD50 Dermal	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
<b>RNA Polymerase Dilution Buffer</b> Glycerol	LD50 Oral	Rat	12600 mg/kg	-
<b>SP6 RNA Polymerase</b> Glycerol	LD50 Oral	Rat	12600 mg/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>5X Transcription Buffer</b> 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	-
<b>RNA Polymerase Dilution Buffer</b> Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
<b>SP6 RNA Polymerase</b> Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

#### Sensitization

Not available.

#### Mutagenicity

Not available.

## Section 11. Toxicological information

### Carcinogenicity

Not available.

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
<b>5X Transcription Buffer</b> Trometamol	Category 3	Not applicable.	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

### Information on the likely routes of exposure

5X Transcription Buffer  
RNA Polymerase Dilution Buffer  
SP6 RNA Polymerase

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

### Potential acute health effects

**Eye contact** : 5X Transcription Buffer  
RNA Polymerase Dilution Buffer  
SP6 RNA Polymerase  
No known significant effects or critical hazards.  
Causes eye irritation.  
Causes eye irritation.

**Inhalation** : 5X Transcription Buffer  
RNA Polymerase Dilution Buffer  
SP6 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  
SP6 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  
SP6 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  
SP6 RNA Polymerase  
No specific data.  
Adverse symptoms may include the following:  
irritation  
watering  
redness  
Adverse symptoms may include the following:  
irritation  
watering  
redness

**Inhalation** : 5X Transcription Buffer  
RNA Polymerase Dilution Buffer  
SP6 RNA Polymerase  
No specific data.  
No specific data.  
No specific data.

## Section 11. Toxicological information

<b>Skin contact</b>	: 5X Transcription Buffer	No specific data.
	RNA Polymerase Dilution Buffer	No specific data.
	SP6 RNA Polymerase	No specific data.
<b>Ingestion</b>	: 5X Transcription Buffer	No specific data.
	RNA Polymerase Dilution Buffer	No specific data.
	SP6 RNA Polymerase	No specific data.

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

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

<b>General</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Mutagenicity</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Teratogenicity</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Developmental effects</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 RNA Polymerase	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Fertility effects</b>	: 5X Transcription Buffer RNA Polymerase Dilution Buffer SP6 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

Route	ATE value
5X Transcription Buffer Oral	102040.8 mg/kg

## Section 12. Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<b>5X Transcription Buffer</b> Trometamol	Acute EC50 >980 mg/l Fresh water	Daphnia	48 hours
	Acute NOEC 520 mg/l Fresh water	Daphnia	48 hours
Sodium chloride	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 28.85 mg/dm <sup>3</sup> Fresh water	Algae - Pseudokirchneriella subcapitata	72 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
<b>RNA Polymerase Dilution Buffer</b> Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
<b>SP6 RNA Polymerase</b> Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

### 12.2 Persistence and degradability

Not available.

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>5X Transcription Buffer</b> Trometamol	-1.56	-	low
<b>RNA Polymerase Dilution Buffer</b> Glycerol	-1.76	-	low
<b>SP6 RNA Polymerase</b> Glycerol	-1.76	-	low

### 12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

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



## Section 13. Disposal considerations

### 13.1 Waste treatment methods

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

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

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

## Section 14. Transport information

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

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

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

## Section 15. Regulatory information

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

**U.S. Federal regulations** : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**Clean Water Act (CWA) 311:** Disodium hydrogenorthophosphate; Edetic acid

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

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

## Section 15. Regulatory information

### SARA 302/304

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

### SARA 311/312

**Classification** :  5X Transcription Buffer Not applicable.  
 RNA Polymerase Dilution Buffer Immediate (acute) health hazard  
 SP6 RNA Polymerase Immediate (acute) health hazard

#### Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
<input checked="" type="checkbox"/> 5X Transcription Buffer						
Trometamol	≤3	Yes.	No.	No.	Yes.	No.
Sodium chloride	≤3	No.	No.	No.	Yes.	No.
<b>RNA Polymerase Dilution Buffer</b>						
Glycerol	≥50 - ≤75	No.	No.	No.	Yes.	No.
<b>SP6 RNA Polymerase</b>						
Glycerol	≥50 - ≤75	No.	No.	No.	Yes.	No.

### State regulations

**Massachusetts** : The following components are listed: GLYCERINE MIST

**New York** : None of the components are listed.

**New Jersey** : The following components are listed: GLYCERIN; 1,2,3-PROPANETRIOL

**Pennsylvania** : The following components are listed: 1,2,3-PROPANETRIOL

#### California Prop. 65

Not available.

### 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.

## Section 15. Regulatory information

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

## Section 16. Other information

### History

<b>Date of issue</b>	: 05/18/2017
<b>Date of previous issue</b>	: 09/03/2015.
<b>Version</b>	: 4

Indicates information that has changed from previously issued version.

### Notice to reader

**Disclaimer:** The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.