

# Material Safety Data Sheet

## Low RNA Input Amplification Kit PLUS - Two-Color

### 1. Product and company identification

**Product name** : Low RNA Input Amplification Kit PLUS - Two-Color

**Material uses** : Research and Development

PEG	0.14 ml
T7 Promoter Primer	0.11 ml
5X First Strand Buffer	0.195 ml
DTT 0.1M	0.23 ml
10 mM dNTP Mix	0.025 ml
RNaseOUT	0.025 ml
NTP Mix	0.175 ml
4X Transcription Buffer	0.43 ml
T7 RNA Polymerase	0.02 ml
RNAse A	0.025 ml
Random Hexamers	0.025 ml
MMLV-RT	0.045 ml
Inorganic Pyrophosphatase	0.015 ml
CTP	0.125 ml
dNTP	0.025 ml
Cyanine 3-CTP	0.024 ml
Cyanine 5-CTP	0.024 ml

**Supplier/Manufacturer** : Agilent Technologies, Inc.  
Logistics Center - Americas  
500 Ships Landing Way  
New Castle, Delaware 19720  
800-227-9770

**Part No. (Chemical Kit)** : 5188-5340

<b>Part No.</b>	PEG	N/A
	T7 Promoter Primer	N/A
	5X First Strand Buffer	N/A
	DTT 0.1M	N/A
	10 mM dNTP Mix	N/A
	RNaseOUT	N/A
	NTP Mix	N/A
	4X Transcription Buffer	N/A
	T7 RNA Polymerase	N/A
	RNAse A	N/A
	Random Hexamers	N/A
	MMLV-RT	N/A
	Inorganic Pyrophosphatase	N/A
	CTP	N/A
	dNTP	N/A
	Cyanine 3-CTP	FP1309
	Cyanine 5-CTP	FP1310

**Validation date** : 03/18/2013

**In case of emergency** : Chemtrec: 1-800-424-9300

### 2. Hazards identification

<b>Physical state</b>	PEG	Liquid.
	T7 Promoter Primer	Liquid.
	5X First Strand Buffer	Liquid.
	DTT 0.1M	Liquid.
	10 mM dNTP Mix	Liquid.
	RNaseOUT	Liquid.
	NTP Mix	Liquid.
	4X Transcription Buffer	Liquid.
	T7 RNA Polymerase	Liquid.

## 2. Hazards identification

	RNAse A	Liquid.
	Random Hexamers	Liquid.
	MMLV-RT	Liquid.
	Inorganic Pyrophosphatase	Liquid.
	CTP	Liquid.
	dNTP	Liquid.
	Cyanine 3-CTP	Liquid.
	Cyanine 5-CTP	Liquid.
<b>Odor</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Not available.
	NTP Mix	Not available.
	4X Transcription Buffer	Not available.
	T7 RNA Polymerase	Not available.
	RNAse A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Not available.
	Inorganic Pyrophosphatase	Not available.
	CTP	Not available.
	dNTP	Not available.
	Cyanine 3-CTP	Not available.
	Cyanine 5-CTP	Not available.
<b>OSHA/HCS status</b>	: PEG	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
	T7 Promoter Primer	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
	5X First Strand Buffer	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	DTT 0.1M	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	10 mM dNTP Mix	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
	RNaseOUT	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	NTP Mix	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
	4X Transcription Buffer	This material is considered hazardous by the

## 2. Hazards identification

T7 RNA Polymerase	OSHA Hazard Communication Standard (29 CFR 1910.1200). This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
RNase A	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
Random Hexamers	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
MMLV-RT	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Inorganic Pyrophosphatase	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
CTP	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
dNTP	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
Cyanine 3-CTP	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
Cyanine 5-CTP	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

### Emergency overview

#### Signal word

: PEG	
T7 Promoter Primer	
5X First Strand Buffer	WARNING!
DTT 0.1M	WARNING!
10 mM dNTP Mix	
RNaseOUT	
NTP Mix	
4X Transcription Buffer	WARNING!
T7 RNA Polymerase	

## 2. Hazards identification

	RNAse A	
	Random Hexamers	
	MMLV-RT	
	Inorganic Pyrophosphatase	
	CTP	
	dNTP	
	Cyanine 3-CTP	
	Cyanine 5-CTP	
<b>Hazard statements</b>	: PEG	MAY CAUSE EYE AND SKIN IRRITATION. NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
	T7 Promoter Primer	
	5X First Strand Buffer	CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
	DTT 0.1M	HARMFUL IF SWALLOWED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
	10 mM dNTP Mix	NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
	RNaseOUT	MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
	NTP Mix	MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
	4X Transcription Buffer	CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
	T7 RNA Polymerase	MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
	RNAse A	NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
	Random Hexamers	NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
	MMLV-RT	MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
	Inorganic Pyrophosphatase	MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
	CTP	NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
	dNTP	NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE

## 2. Hazards identification

	Cyanine 3-CTP	ARE FOLLOWED. NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
	Cyanine 5-CTP	NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
<b>Precautions</b>	: PEG	Avoid breathing vapor or mist. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.
	T7 Promoter Primer	No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.
	5X First Strand Buffer	Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
	DTT 0.1M	Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
	10 mM dNTP Mix	No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.
	RNaseOUT	Avoid breathing vapor or mist. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
	NTP Mix	Avoid breathing vapor or mist. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
	4X Transcription Buffer	Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
	T7 RNA Polymerase	Avoid breathing vapor or mist. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
	RNase A	No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.
	Random Hexamers	No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.
	MMLV-RT	Avoid breathing vapor or mist. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
	Inorganic Pyrophosphatase	Avoid breathing vapor or mist. Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use.

## 2. Hazards identification

CTP	use. Wash thoroughly after handling. No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.
dNTP	No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.
Cyanine 3-CTP	No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.
Cyanine 5-CTP	No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.

### Routes of entry

: PEG	Not available.
T7 Promoter Primer	Not available.
5X First Strand Buffer	Not available.
DTT 0.1M	Not available.
10 mM dNTP Mix	Not available.
RNaseOUT	Not available.
NTP Mix	Not available.
4X Transcription Buffer	Not available.
T7 RNA Polymerase	Not available.
RNase A	Not available.
Random Hexamers	Not available.
MMLV-RT	Not available.
Inorganic Pyrophosphatase	Not available.
CTP	Not available.
dNTP	Not available.
Cyanine 3-CTP	Not available.
Cyanine 5-CTP	Not available.

### Potential acute health effects

#### Inhalation

: PEG	No known significant effects or critical hazards.
T7 Promoter Primer	No known significant effects or critical hazards.
5X First Strand Buffer	Irritating to respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
DTT 0.1M	Irritating to respiratory system.
10 mM dNTP Mix	No known significant effects or critical hazards.
RNaseOUT	Slightly irritating to the respiratory system.
NTP Mix	Slightly irritating to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
4X Transcription Buffer	Irritating to respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
T7 RNA Polymerase	Slightly irritating to the respiratory system.
RNase A	No known significant effects or critical hazards.
Random Hexamers	No known significant effects or critical hazards.
MMLV-RT	Slightly irritating to the respiratory system.
Inorganic Pyrophosphatase	Slightly irritating to the respiratory system.
CTP	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
dNTP	No known significant effects or critical hazards.
Cyanine 3-CTP	No known significant effects or critical hazards.
Cyanine 5-CTP	No known significant effects or critical hazards.

## 2. Hazards identification

<b>Ingestion</b>	<ul style="list-style-type: none"> <li>: PEG</li> <li>T7 Promoter Primer</li> <li>5X First Strand Buffer</li> <li>DTT 0.1M</li> <li>10 mM dNTP Mix</li> <li>RNaseOUT</li> <li>NTP Mix</li> <li>4X Transcription Buffer</li> <li>T7 RNA Polymerase</li> <li>RNase A</li> <li>Random Hexamers</li> <li>MMLV-RT</li> <li>Inorganic Pyrophosphatase</li> <li>CTP</li> <li>dNTP</li> <li>Cyanine 3-CTP</li> <li>Cyanine 5-CTP</li> </ul>	<ul style="list-style-type: none"> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>Toxic if swallowed.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> </ul>
<b>Skin</b>	<ul style="list-style-type: none"> <li>: PEG</li> <li>T7 Promoter Primer</li> <li>5X First Strand Buffer</li> <li>DTT 0.1M</li> <li>10 mM dNTP Mix</li> <li>RNaseOUT</li> <li>NTP Mix</li> <li>4X Transcription Buffer</li> <li>T7 RNA Polymerase</li> <li>RNase A</li> <li>Random Hexamers</li> <li>MMLV-RT</li> <li>Inorganic Pyrophosphatase</li> <li>CTP</li> <li>dNTP</li> <li>Cyanine 3-CTP</li> <li>Cyanine 5-CTP</li> </ul>	<ul style="list-style-type: none"> <li>Slightly irritating to the skin.</li> <li>No known significant effects or critical hazards.</li> <li>Irritating to skin.</li> <li>Irritating to skin.</li> <li>No known significant effects or critical hazards.</li> <li>Slightly irritating to the skin.</li> <li>Slightly irritating to the skin.</li> <li>Irritating to skin.</li> <li>Slightly irritating to the skin.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>Slightly irritating to the skin.</li> <li>Slightly irritating to the skin.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> </ul>
<b>Eyes</b>	<ul style="list-style-type: none"> <li>: PEG</li> <li>T7 Promoter Primer</li> <li>5X First Strand Buffer</li> <li>DTT 0.1M</li> <li>10 mM dNTP Mix</li> <li>RNaseOUT</li> <li>NTP Mix</li> <li>4X Transcription Buffer</li> <li>T7 RNA Polymerase</li> <li>RNase A</li> <li>Random Hexamers</li> <li>MMLV-RT</li> <li>Inorganic Pyrophosphatase</li> <li>CTP</li> <li>dNTP</li> <li>Cyanine 3-CTP</li> <li>Cyanine 5-CTP</li> </ul>	<ul style="list-style-type: none"> <li>Slightly irritating to the eyes.</li> <li>No known significant effects or critical hazards.</li> <li>Irritating to eyes.</li> <li>Irritating to eyes.</li> <li>No known significant effects or critical hazards.</li> <li>Slightly irritating to the eyes.</li> <li>Slightly irritating to the eyes.</li> <li>Irritating to eyes.</li> <li>Slightly irritating to the eyes.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>Slightly irritating to the eyes.</li> <li>Slightly irritating to the eyes.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>Slightly irritating to the eyes.</li> <li>Slightly irritating to the eyes.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> </ul>
<b>Potential chronic health effects</b>		
<b>Chronic effects</b>	<ul style="list-style-type: none"> <li>: PEG</li> <li>T7 Promoter Primer</li> <li>5X First Strand Buffer</li>   <li>DTT 0.1M</li>   <li>10 mM dNTP Mix</li> <li>RNaseOUT</li>   <li>NTP Mix</li> </ul>	<ul style="list-style-type: none"> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>Contains material that may cause target organ damage, based on animal data.</li> <li>Contains material that may cause target organ damage, based on animal data.</li> <li>No known significant effects or critical hazards.</li> <li>Contains material that may cause target organ damage, based on animal data.</li> <li>No known significant effects or critical hazards.</li> </ul>

## 2. Hazards identification

	4X Transcription Buffer	Contains material that may cause target organ damage, based on animal data.
	T7 RNA Polymerase	Contains material that may cause target organ damage, based on animal data.
	RNAse A	No known significant effects or critical hazards.
	Random Hexamers	No known significant effects or critical hazards.
	MMLV-RT	Contains material that may cause target organ damage, based on animal data.
	Inorganic Pyrophosphatase	Contains material that may cause target organ damage, based on animal data.
	CTP	No known significant effects or critical hazards.
	dNTP	No known significant effects or critical hazards.
	Cyanine 3-CTP	No known significant effects or critical hazards.
	Cyanine 5-CTP	No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: PEG	No known significant effects or critical hazards.
	T7 Promoter Primer	No known significant effects or critical hazards.
	5X First Strand Buffer	No known significant effects or critical hazards.
	DTT 0.1M	No known significant effects or critical hazards.
	10 mM dNTP Mix	No known significant effects or critical hazards.
	RNAseOUT	No known significant effects or critical hazards.
	NTP Mix	No known significant effects or critical hazards.
	4X Transcription Buffer	No known significant effects or critical hazards.
	T7 RNA Polymerase	No known significant effects or critical hazards.
	RNAse A	No known significant effects or critical hazards.
	Random Hexamers	No known significant effects or critical hazards.
	MMLV-RT	No known significant effects or critical hazards.
	Inorganic Pyrophosphatase	No known significant effects or critical hazards.
	CTP	No known significant effects or critical hazards.
	dNTP	No known significant effects or critical hazards.
	Cyanine 3-CTP	No known significant effects or critical hazards.
	Cyanine 5-CTP	No known significant effects or critical hazards.
<b>Mutagenicity</b>	: PEG	No known significant effects or critical hazards.
	T7 Promoter Primer	No known significant effects or critical hazards.
	5X First Strand Buffer	No known significant effects or critical hazards.
	DTT 0.1M	No known significant effects or critical hazards.
	10 mM dNTP Mix	No known significant effects or critical hazards.
	RNAseOUT	No known significant effects or critical hazards.
	NTP Mix	No known significant effects or critical hazards.
	4X Transcription Buffer	No known significant effects or critical hazards.
	T7 RNA Polymerase	No known significant effects or critical hazards.
	RNAse A	No known significant effects or critical hazards.
	Random Hexamers	No known significant effects or critical hazards.
	MMLV-RT	No known significant effects or critical hazards.
	Inorganic Pyrophosphatase	No known significant effects or critical hazards.
	CTP	No known significant effects or critical hazards.
	dNTP	No known significant effects or critical hazards.
	Cyanine 3-CTP	No known significant effects or critical hazards.
	Cyanine 5-CTP	No known significant effects or critical hazards.
<b>Teratogenicity</b>	: PEG	No known significant effects or critical hazards.
	T7 Promoter Primer	No known significant effects or critical hazards.
	5X First Strand Buffer	No known significant effects or critical hazards.
	DTT 0.1M	No known significant effects or critical hazards.
	10 mM dNTP Mix	No known significant effects or critical hazards.
	RNAseOUT	No known significant effects or critical hazards.
	NTP Mix	No known significant effects or critical hazards.
	4X Transcription Buffer	No known significant effects or critical hazards.
	T7 RNA Polymerase	No known significant effects or critical hazards.
	RNAse A	No known significant effects or critical hazards.
	Random Hexamers	No known significant effects or critical hazards.
	MMLV-RT	No known significant effects or critical hazards.
	Inorganic Pyrophosphatase	No known significant effects or critical hazards.
	CTP	No known significant effects or critical hazards.
	dNTP	No known significant effects or critical hazards.



## 2. Hazards identification

	Cyanine 3-CTP	No known significant effects or critical hazards.
	Cyanine 5-CTP	No known significant effects or critical hazards.
<b>Developmental effects</b>	: PEG	No known significant effects or critical hazards.
	T7 Promoter Primer	No known significant effects or critical hazards.
	5X First Strand Buffer	No known significant effects or critical hazards.
	DTT 0.1M	No known significant effects or critical hazards.
	10 mM dNTP Mix	No known significant effects or critical hazards.
	RNaseOUT	No known significant effects or critical hazards.
	NTP Mix	No known significant effects or critical hazards.
	4X Transcription Buffer	No known significant effects or critical hazards.
	T7 RNA Polymerase	No known significant effects or critical hazards.
	RNase A	No known significant effects or critical hazards.
	Random Hexamers	No known significant effects or critical hazards.
	MMLV-RT	No known significant effects or critical hazards.
	Inorganic Pyrophosphatase	No known significant effects or critical hazards.
	CTP	No known significant effects or critical hazards.
	dNTP	No known significant effects or critical hazards.
	Cyanine 3-CTP	No known significant effects or critical hazards.
	Cyanine 5-CTP	No known significant effects or critical hazards.
<b>Fertility effects</b>	: PEG	No known significant effects or critical hazards.
	T7 Promoter Primer	No known significant effects or critical hazards.
	5X First Strand Buffer	No known significant effects or critical hazards.
	DTT 0.1M	No known significant effects or critical hazards.
	10 mM dNTP Mix	No known significant effects or critical hazards.
	RNaseOUT	No known significant effects or critical hazards.
	NTP Mix	No known significant effects or critical hazards.
	4X Transcription Buffer	No known significant effects or critical hazards.
	T7 RNA Polymerase	No known significant effects or critical hazards.
	RNase A	No known significant effects or critical hazards.
	Random Hexamers	No known significant effects or critical hazards.
	MMLV-RT	No known significant effects or critical hazards.
	Inorganic Pyrophosphatase	No known significant effects or critical hazards.
	CTP	No known significant effects or critical hazards.
	dNTP	No known significant effects or critical hazards.
	Cyanine 3-CTP	No known significant effects or critical hazards.
	Cyanine 5-CTP	No known significant effects or critical hazards.
<b>Target organs</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Contains material which may cause damage to the following organs: gastrointestinal tract, upper respiratory tract, skin, eye, lens or cornea.
	DTT 0.1M	Contains material which may cause damage to the following organs: upper respiratory tract, skin, eyes.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Contains material which may cause damage to the following organs: kidneys, upper respiratory tract, skin, eye, lens or cornea.
	NTP Mix	Not available.
	4X Transcription Buffer	Contains material which may cause damage to the following organs: upper respiratory tract, skin, eyes.
	T7 RNA Polymerase	Contains material which may cause damage to the following organs: kidneys, upper respiratory tract, skin, eye, lens or cornea.
	RNase A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Contains material which may cause damage to the following organs: kidneys, upper respiratory tract, skin, eye, lens or cornea.
	Inorganic Pyrophosphatase	Contains material which may cause damage to the following organs: kidneys, upper respiratory tract, skin, eye, lens or cornea.
	CTP	Not available.
	dNTP	Not available.

## 2. Hazards identification

Cyanine 3-CTP Not available.  
 Cyanine 5-CTP Not available.

### Over-exposure signs/symptoms

#### Inhalation

: PEG No specific data.  
 T7 Promoter Primer No specific data.  
 5X First Strand Buffer Adverse symptoms may include the following:  
 respiratory tract irritation  
 coughing  
 DTT 0.1M Adverse symptoms may include the following:  
 respiratory tract irritation  
 coughing  
 10 mM dNTP Mix No specific data.  
 RNaseOUT Adverse symptoms may include the following:  
 respiratory tract irritation  
 coughing  
 NTP Mix Adverse symptoms may include the following:  
 respiratory tract irritation  
 coughing  
 4X Transcription Buffer Adverse symptoms may include the following:  
 respiratory tract irritation  
 coughing  
 T7 RNA Polymerase Adverse symptoms may include the following:  
 respiratory tract irritation  
 coughing  
 RNase A No specific data.  
 Random Hexamers No specific data.  
 MMLV-RT Adverse symptoms may include the following:  
 respiratory tract irritation  
 coughing  
 Inorganic Pyrophosphatase Adverse symptoms may include the following:  
 respiratory tract irritation  
 coughing  
 CTP No specific data.  
 dNTP No specific data.  
 Cyanine 3-CTP No specific data.  
 Cyanine 5-CTP No specific data.

#### Ingestion

: PEG No specific data.  
 T7 Promoter Primer No specific data.  
 5X First Strand Buffer No specific data.  
 DTT 0.1M No specific data.  
 10 mM dNTP Mix No specific data.  
 RNaseOUT No specific data.  
 NTP Mix No specific data.  
 4X Transcription Buffer No specific data.  
 T7 RNA Polymerase No specific data.  
 RNase A No specific data.  
 Random Hexamers No specific data.  
 MMLV-RT No specific data.  
 Inorganic Pyrophosphatase No specific data.  
 CTP No specific data.  
 dNTP No specific data.  
 Cyanine 3-CTP No specific data.  
 Cyanine 5-CTP No specific data.

#### Skin

: PEG Adverse symptoms may include the following:  
 irritation  
 redness  
 T7 Promoter Primer No specific data.  
 5X First Strand Buffer Adverse symptoms may include the following:  
 irritation  
 redness  
 DTT 0.1M Adverse symptoms may include the following:  
 irritation

## 2. Hazards identification

**Eyes**

10 mM dNTP Mix RNaseOUT	redness No specific data. Adverse symptoms may include the following: irritation redness
NTP Mix	Adverse symptoms may include the following: irritation redness
4X Transcription Buffer	Adverse symptoms may include the following: irritation redness
T7 RNA Polymerase	Adverse symptoms may include the following: irritation redness
RNase A Random Hexamers MMLV-RT	No specific data. No specific data. Adverse symptoms may include the following: irritation redness
Inorganic Pyrophosphatase	Adverse symptoms may include the following: irritation redness
CTP dNTP Cyanine 3-CTP Cyanine 5-CTP	No specific data. No specific data. No specific data. No specific data.
: PEG	Adverse symptoms may include the following: irritation watering redness
T7 Promoter Primer 5X First Strand Buffer	No specific data. Adverse symptoms may include the following: pain or irritation watering redness
DTT 0.1M	Adverse symptoms may include the following: pain or irritation watering redness
10 mM dNTP Mix RNaseOUT	No specific data. Adverse symptoms may include the following: irritation watering redness
NTP Mix	Adverse symptoms may include the following: irritation watering redness
4X Transcription Buffer	Adverse symptoms may include the following: pain or irritation watering redness
T7 RNA Polymerase	Adverse symptoms may include the following: irritation watering redness
RNase A Random Hexamers MMLV-RT	No specific data. No specific data. Adverse symptoms may include the following: irritation watering redness
Inorganic Pyrophosphatase	Adverse symptoms may include the following:

## 2. Hazards identification

**Medical conditions aggravated by over-exposure**

CTP dNTP Cyanine 3-CTP Cyanine 5-CTP : PEG T7 Promoter Primer 5X First Strand Buffer  DTT 0.1M  10 mM dNTP Mix RNaseOUT  NTP Mix 4X Transcription Buffer  T7 RNA Polymerase  RNase A Random Hexamers MMLV-RT  Inorganic Pyrophosphatase  CTP dNTP Cyanine 3-CTP Cyanine 5-CTP	irritation watering redness No specific data. No specific data. No specific data. No specific data. None known. None known. Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product. Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product. None known. Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product. None known. Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product. Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product. None known. None known. Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product. Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product. None known. None known. Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product. None known. None known. None known. None known.
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See toxicological information (Section 11)

## 3. Composition/information on ingredients

Name	CAS number	%
<b>PEG</b> Polyethylene glycol	25322-68-3	30 - 60
<b>5X First Strand Buffer</b> 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride Potassium chloride	1185-53-1 7447-40-7	1 - 5 1 - 5
<b>DTT 0.1M</b> (R*,R*)-1,4-Dimercaptobutane-2,3-diol	3483-12-3	1 - 5
<b>RNaseOUT</b> Glycerol	56-81-5	30 - 60
<b>4X Transcription Buffer</b> 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	1185-53-1	1 - 5
<b>T7 RNA Polymerase</b> Glycerol	56-81-5	30 - 60

### 3. Composition/information on ingredients

MMLV-RT Glycerol	56-81-5	30 - 60
Inorganic Pyrophosphatase Glycerol	56-81-5	30 - 60

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.

### 4. First aid measures

<b>Eye contact</b>	: PEG	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
	T7 Promoter Primer	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
	5X First Strand Buffer	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
	DTT 0.1M	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
	10 mM dNTP Mix	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
	RNaseOUT	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
	NTP Mix	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
	4X Transcription Buffer	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
	T7 RNA Polymerase	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
	RNase A	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
	Random Hexamers	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
	MMLV-RT	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at

## 4. First aid measures

Inorganic Pyrophosphatase	least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately. Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
CTP	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
dNTP	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
Cyanine 3-CTP	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
Cyanine 5-CTP	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
<b>Skin contact</b> : PEG	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
T7 Promoter Primer	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
5X First Strand Buffer	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
DTT 0.1M	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
10 mM dNTP Mix	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
RNaseOUT	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
NTP Mix	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

## 4. First aid measures

4X Transcription Buffer	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
T7 RNA Polymerase	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
RNase A	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
Random Hexamers	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
MMLV-RT	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
Inorganic Pyrophosphatase	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
CTP	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
dNTP	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
Cyanine 3-CTP	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
Cyanine 5-CTP	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
<b>Inhalation</b>	
: PEG	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
T7 Promoter Primer	Move exposed person to fresh air. If not breathing,

## 4. First aid measures

	if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
5X First Strand Buffer	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
DTT 0.1M	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
10 mM dNTP Mix	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
RNaseOUT	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
NTP Mix	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
4X Transcription Buffer	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
T7 RNA Polymerase	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
RNase A	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
Random Hexamers	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
MMLV-RT	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention



## 4. First aid measures

	Inorganic Pyrophosphatase	immediately. Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
	CTP	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
	dNTP	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
	Cyanine 3-CTP	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
	Cyanine 5-CTP	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
<b>Ingestion</b>	: PEG	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
	T7 Promoter Primer	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
	5X First Strand Buffer	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
	DTT 0.1M	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
	10 mM dNTP Mix	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
	RNaseOUT	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
	NTP Mix	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical

## 4. First aid measures

4X Transcription Buffer	<p>personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.</p> <p>Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.</p>
T7 RNA Polymerase	<p>Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.</p>
RNAse A	<p>Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.</p>
Random Hexamers	<p>Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.</p>
MMLV-RT	<p>Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.</p>
Inorganic Pyrophosphatase	<p>Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.</p>
CTP	<p>Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.</p>
dNTP	<p>Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.</p>
Cyanine 3-CTP	<p>Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.</p>
Cyanine 5-CTP	<p>Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.</p>
<b>Protection of first-aiders</b> : PEG	<p>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.</p>
T7 Promoter Primer	<p>No action shall be taken involving any personal risk or without suitable training.</p>
5X First Strand Buffer	<p>No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained</p>

## 4. First aid measures

DTT 0.1M	breathing apparatus. 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. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
10 mM dNTP Mix	No action shall be taken involving any personal risk or without suitable training.
RNaseOUT	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.
NTP Mix	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.
4X Transcription Buffer	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
T7 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.
RNase A	No action shall be taken involving any personal risk or without suitable training.
Random Hexamers	No action shall be taken involving any personal risk or without suitable training.
MMLV-RT	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.
Inorganic Pyrophosphatase	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.
CTP	No action shall be taken involving any personal risk or without suitable training.
dNTP	No action shall be taken involving any personal risk or without suitable training.
Cyanine 3-CTP	No action shall be taken involving any personal risk or without suitable training.
Cyanine 5-CTP	No action shall be taken involving any personal risk or without suitable training.
<b>Notes to physician</b> : PEG	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
T7 Promoter Primer	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
5X First Strand 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.

## 4. First aid measures

DTT 0.1M	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
10 mM dNTP Mix	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
RNaseOUT	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
NTP Mix	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.
4X 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.
T7 RNA Polymerase	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
RNase A	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Random Hexamers	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
MMLV-RT	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Inorganic Pyrophosphatase	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
CTP	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.
dNTP	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Cyanine 3-CTP	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Cyanine 5-CTP	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## 5. Fire-fighting measures

<b>Flammability of the product</b>	: PEG	In a fire or if heated, a pressure increase will occur and the container may burst.
	T7 Promoter Primer	In a fire or if heated, a pressure increase will occur and the container may burst.
	5X First Strand Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	DTT 0.1M	In a fire or if heated, a pressure increase will occur and the container may burst.
	10 mM dNTP Mix	In a fire or if heated, a pressure increase will occur and the container may burst.
	RNaseOUT	In a fire or if heated, a pressure increase will occur and the container may burst.
	NTP Mix	In a fire or if heated, a pressure increase will occur and the container may burst.
	4X Transcription Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.

## 5. Fire-fighting measures

T7 RNA Polymerase	In a fire or if heated, a pressure increase will occur and the container may burst.
RNase A	In a fire or if heated, a pressure increase will occur and the container may burst.
Random Hexamers	In a fire or if heated, a pressure increase will occur and the container may burst.
MMLV-RT	In a fire or if heated, a pressure increase will occur and the container may burst.
Inorganic Pyrophosphatase	In a fire or if heated, a pressure increase will occur and the container may burst.
CTP	In a fire or if heated, a pressure increase will occur and the container may burst.
dNTP	In a fire or if heated, a pressure increase will occur and the container may burst.
Cyanine 3-CTP	In a fire or if heated, a pressure increase will occur and the container may burst.
Cyanine 5-CTP	In a fire or if heated, a pressure increase will occur and the container may burst.

### Extinguishing media

#### Suitable

: PEG	Use an extinguishing agent suitable for the surrounding fire.
T7 Promoter Primer	Use an extinguishing agent suitable for the surrounding fire.
5X First Strand Buffer	Use an extinguishing agent suitable for the surrounding fire.
DTT 0.1M	Use an extinguishing agent suitable for the surrounding fire.
10 mM dNTP Mix	Use an extinguishing agent suitable for the surrounding fire.
RNaseOUT	Use an extinguishing agent suitable for the surrounding fire.
NTP Mix	Use an extinguishing agent suitable for the surrounding fire.
4X Transcription Buffer	Use an extinguishing agent suitable for the surrounding fire.
T7 RNA Polymerase	Use an extinguishing agent suitable for the surrounding fire.
RNase A	Use an extinguishing agent suitable for the surrounding fire.
Random Hexamers	Use an extinguishing agent suitable for the surrounding fire.
MMLV-RT	Use an extinguishing agent suitable for the surrounding fire.
Inorganic Pyrophosphatase	Use an extinguishing agent suitable for the surrounding fire.
CTP	Use an extinguishing agent suitable for the surrounding fire.
dNTP	Use an extinguishing agent suitable for the surrounding fire.
Cyanine 3-CTP	Use an extinguishing agent suitable for the surrounding fire.
Cyanine 5-CTP	Use an extinguishing agent suitable for the surrounding fire.

#### Not suitable

: PEG	None known.
T7 Promoter Primer	None known.
5X First Strand Buffer	None known.
DTT 0.1M	None known.
10 mM dNTP Mix	None known.
RNaseOUT	None known.
NTP Mix	None known.
4X Transcription Buffer	None known.
T7 RNA Polymerase	None known.
RNase A	None known.

## 5. Fire-fighting measures

	Random Hexamers	None known.
	MMLV-RT	None known.
	Inorganic Pyrophosphatase	None known.
	CTP	None known.
	dNTP	None known.
	Cyanine 3-CTP	None known.
	Cyanine 5-CTP	None known.
<b>Special exposure hazards</b>	: PEG	No action shall be taken involving any personal risk or without suitable training.
	T7 Promoter Primer	No action shall be taken involving any personal risk or without suitable training.
	5X First Strand Buffer	No action shall be taken involving any personal risk or without suitable training.
	DTT 0.1M	No action shall be taken involving any personal risk or without suitable training.
	10 mM dNTP Mix	No action shall be taken involving any personal risk or without suitable training.
	RNaseOUT	No action shall be taken involving any personal risk or without suitable training.
	NTP Mix	No action shall be taken involving any personal risk or without suitable training.
	4X Transcription Buffer	No action shall be taken involving any personal risk or without suitable training.
	T7 RNA Polymerase	No action shall be taken involving any personal risk or without suitable training.
	RNase A	No action shall be taken involving any personal risk or without suitable training.
	Random Hexamers	No action shall be taken involving any personal risk or without suitable training.
	MMLV-RT	No action shall be taken involving any personal risk or without suitable training.
	Inorganic Pyrophosphatase	No action shall be taken involving any personal risk or without suitable training.
	CTP	No action shall be taken involving any personal risk or without suitable training.
	dNTP	No action shall be taken involving any personal risk or without suitable training.
	Cyanine 3-CTP	No action shall be taken involving any personal risk or without suitable training.
	Cyanine 5-CTP	No action shall be taken involving any personal risk or without suitable training.
<b>Hazardous thermal decomposition products</b>	: PEG	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	T7 Promoter Primer	No specific data.
	5X First Strand Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides
	DTT 0.1M	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	10 mM dNTP Mix	No specific data.
	RNaseOUT	Decomposition products may include the following materials: carbon dioxide carbon monoxide

## 5. Fire-fighting measures

NTP Mix	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
4X Transcription Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides
T7 RNA Polymerase	Decomposition products may include the following materials: carbon dioxide carbon monoxide
RNase A	No specific data.
Random Hexamers	No specific data.
MMLV-RT	Decomposition products may include the following materials: carbon dioxide carbon monoxide
Inorganic Pyrophosphatase	Decomposition products may include the following materials: carbon dioxide carbon monoxide phosphorus oxides
CTP	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
dNTP	No specific data.
Cyanine 3-CTP	No specific data.
Cyanine 5-CTP	No specific data.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## 6. Accidental release measures

<b>Personal precautions</b>	: PEG	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 (see Section 8).
T7 Promoter Primer		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 (see Section 8).
5X First Strand 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

## 6. Accidental release measures

DTT 0.1M	<p>inadequate. Put on appropriate personal protective equipment (see Section 8). No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).</p>
10 mM dNTP Mix	<p>No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).</p>
RNaseOUT	<p>No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).</p>
NTP Mix	<p>No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).</p>
4X Transcription Buffer	<p>No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).</p>
T7 RNA Polymerase	<p>No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).</p>
RNase A	<p>No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).</p>
Random Hexamers	<p>No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate</p>



## 6. Accidental release measures

MMLV-RT	personal protective equipment (see Section 8). 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 (see Section 8).
Inorganic Pyrophosphatase	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 (see Section 8).
CTP	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 (see Section 8).
dNTP	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 (see Section 8).
Cyanine 3-CTP	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 (see Section 8).
Cyanine 5-CTP	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 (see Section 8).
<b>Environmental precautions :</b> PEG	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).
T7 Promoter Primer	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).
5X First Strand 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).
DTT 0.1M	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).

## 6. Accidental release measures

10 mM dNTP Mix	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).
RNaseOUT	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).
NTP Mix	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).
4X 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).
T7 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, waterways, soil or air).
RNase A	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).
Random Hexamers	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).
MMLV-RT	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).
Inorganic Pyrophosphatase	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).
CTP	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).
dNTP	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).
Cyanine 3-CTP	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).
Cyanine 5-CTP	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,

## 6. Accidental release measures

<b>Methods for cleaning up</b>	: PEG	waterways, soil or air). 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.
	T7 Promoter Primer	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 First Strand 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.
	DTT 0.1M	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.
	10 mM dNTP Mix	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.
	RNaseOUT	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.
	NTP Mix	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.
	4X 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.
	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.
	RNase A	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.
	Random Hexamers	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble.

## 6. Accidental release measures

MMLV-RT	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. 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.
Inorganic Pyrophosphatase	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.
CTP	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.
dNTP	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.
Cyanine 3-CTP	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.
Cyanine 5-CTP	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.

## 7. Handling and storage

### Handling

: PEG

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

T7 Promoter Primer

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

## 7. Handling and storage

5X First Strand Buffer

Put on appropriate personal protective equipment (see Section 8). 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. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

DTT 0.1M

Put on appropriate personal protective equipment (see Section 8). 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. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

10 mM dNTP Mix

Put on appropriate personal protective equipment (see Section 8). 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. Put on appropriate personal protective equipment (see Section 8). 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. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

RNaseOUT

NTP Mix

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

## 7. Handling and storage

4X Transcription Buffer

with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Put on appropriate personal protective equipment (see Section 8). 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. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

T7 RNA Polymerase

Put on appropriate personal protective equipment (see Section 8). 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. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

RNAse A

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

Random Hexamers

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

MMLV-RT

Put on appropriate personal protective equipment (see Section 8). 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. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in

## 7. Handling and storage

Inorganic Pyrophosphatase

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.

Put on appropriate personal protective equipment (see Section 8). 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. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

CTP

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

dNTP

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

Cyanine 3-CTP

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

Cyanine 5-CTP

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

### Storage

: PEG

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. 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

T7 Promoter Primer

## 7. Handling and storage

5X First Strand Buffer

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.

DTT 0.1M

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.

10 mM dNTP Mix

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.

RNaseOUT

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.

NTP Mix

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.

4X 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.

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



## 7. Handling and storage

T7 RNA Polymerase	unlabeled containers. Use appropriate containment to avoid environmental contamination. 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.
RNAse A	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.
Random Hexamers	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.
MMLV-RT	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.
Inorganic Pyrophosphatase	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.
CTP	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.
dNTP	Store in accordance with local regulations. Store in original container protected from direct sunlight

## 7. Handling and storage

Cyanine 3-CTP

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. 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. 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.

Cyanine 5-CTP

## 8. Exposure controls/personal protection

Ingredient	Exposure limits
<b>PEG</b> Polyethylene glycol	<b>AIHA WEEL (United States, 5/2010).</b> TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Aerosol
<b>RNaseOUT</b> Glycerol	<b>ACGIH TLV (United States, 3/2012).</b> TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Mist <b>OSHA PEL (United States, 6/2010).</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>T7 RNA Polymerase</b> Glycerol	<b>ACGIH TLV (United States, 3/2012).</b> TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Mist <b>OSHA PEL (United States, 6/2010).</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>MMLV-RT</b> Glycerol	<b>ACGIH TLV (United States, 3/2012).</b> TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Mist <b>OSHA PEL (United States, 6/2010).</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. Exposure controls/personal protection

<p><b>Inorganic Pyrophosphatase</b> Glycerol</p>	<p><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</p> <p><b>ACGIH TLV (United States, 3/2012).</b> TWA: 10 mg/m<sup>3</sup> 8 hours. Form: Mist</p> <p><b>OSHA PEL (United States, 6/2010).</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</p> <p><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</p>
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- 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 appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.
- Engineering measures** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- 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.
- Personal protection**
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : 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.
- Eyes** : 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 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** : 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.
- 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.
- Other protection** : Not available.

## 9. Physical and chemical properties

<b>Physical state</b>	: PEG	Liquid.
	T7 Promoter Primer	Liquid.
	5X First Strand Buffer	Liquid.
	DTT 0.1M	Liquid.
	10 mM dNTP Mix	Liquid.
	RNaseOUT	Liquid.
	NTP Mix	Liquid.
	4X Transcription Buffer	Liquid.
	T7 RNA Polymerase	Liquid.
	RNase A	Liquid.
	Random Hexamers	Liquid.
	MMLV-RT	Liquid.
	Inorganic Pyrophosphatase	Liquid.
	CTP	Liquid.
	dNTP	Liquid.
Cyanine 3-CTP	Liquid.	
Cyanine 5-CTP	Liquid.	
<b>Flash point</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Not available.
	NTP Mix	Not available.
	4X Transcription Buffer	Not available.
	T7 RNA Polymerase	Not available.
	RNase A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Not available.
	Inorganic Pyrophosphatase	Not available.
	CTP	Not available.
	dNTP	Not available.
Cyanine 3-CTP	Not available.	
Cyanine 5-CTP	Not available.	
<b>Auto-ignition temperature</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Not available.
	NTP Mix	Not available.
	4X Transcription Buffer	Not available.
	T7 RNA Polymerase	Not available.
	RNase A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Not available.
	Inorganic Pyrophosphatase	Not available.
	CTP	Not available.
	dNTP	Not available.
Cyanine 3-CTP	Not available.	
Cyanine 5-CTP	Not available.	
<b>Flammable limits</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Not available.
	NTP Mix	Not available.
	4X Transcription Buffer	Not available.
	T7 RNA Polymerase	Not available.
	RNase A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Not available.

## 9. Physical and chemical properties

	Inorganic Pyrophosphatase	Not available.
	CTP	Not available.
	dNTP	Not available.
	Cyanine 3-CTP	Not available.
	Cyanine 5-CTP	Not available.
<b>Color</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Not available.
	NTP Mix	Not available.
	4X Transcription Buffer	Not available.
	T7 RNA Polymerase	Not available.
	RNAse A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Clear.
	Inorganic Pyrophosphatase	Not available.
	CTP	Not available.
	dNTP	Not available.
	Cyanine 3-CTP	Not available.
	Cyanine 5-CTP	Not available.
<b>Odor</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Not available.
	NTP Mix	Not available.
	4X Transcription Buffer	Not available.
	T7 RNA Polymerase	Not available.
	RNAse A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Not available.
	Inorganic Pyrophosphatase	Not available.
	CTP	Not available.
	dNTP	Not available.
	Cyanine 3-CTP	Not available.
	Cyanine 5-CTP	Not available.
<b>pH</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	8.3
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	8
	NTP Mix	Not available.
	4X Transcription Buffer	8
	T7 RNA Polymerase	Not available.
	RNAse A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Not available.
	Inorganic Pyrophosphatase	Not available.
	CTP	Not available.
	dNTP	Not available.
	Cyanine 3-CTP	7.6
	Cyanine 5-CTP	7.6

## 9. Physical and chemical properties

<b>Boiling/condensation point</b>	: PEG	Not available.
	T7 Promoter Primer	100°C (212°F)
	5X First Strand Buffer	Not available.
	DTT 0.1M	100°C (212°F)
	10 mM dNTP Mix	100°C (212°F)
	RNaseOUT	Not available.
	NTP Mix	100°C (212°F)
	4X Transcription Buffer	100°C (212°F)
	T7 RNA Polymerase	Not available.
	RNase A	Not available.
	Random Hexamers	100°C (212°F)
	MMLV-RT	289.7°C (553.5°F)
	Inorganic Pyrophosphatase	Not available.
	CTP	100°C (212°F)
	dNTP	100°C (212°F)
	Cyanine 3-CTP	100°C (212°F)
Cyanine 5-CTP	100°C (212°F)	
<b>Melting/freezing point</b>	: PEG	Not available.
	T7 Promoter Primer	0°C (32°F)
	5X First Strand Buffer	Not available.
	DTT 0.1M	0°C (32°F)
	10 mM dNTP Mix	0°C (32°F)
	RNaseOUT	Not available.
	NTP Mix	0°C (32°F)
	4X Transcription Buffer	0°C (32°F)
	T7 RNA Polymerase	Not available.
	RNase A	Not available.
	Random Hexamers	0°C (32°F)
	MMLV-RT	17.8°C (64°F)
	Inorganic Pyrophosphatase	Not available.
	CTP	0°C (32°F)
	dNTP	0°C (32°F)
	Cyanine 3-CTP	0°C (32°F)
Cyanine 5-CTP	0°C (32°F)	
<b>Specific gravity</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Not available.
	NTP Mix	Not available.
	4X Transcription Buffer	Not available.
	T7 RNA Polymerase	Not available.
	RNase A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Not available.
	Inorganic Pyrophosphatase	Not available.
	CTP	Not available.
	dNTP	Not available.
	Cyanine 3-CTP	Not available.
Cyanine 5-CTP	Not available.	
<b>Vapor pressure</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Not available.
	NTP Mix	Not available.
	4X Transcription Buffer	Not available.
	T7 RNA Polymerase	Not available.
	RNase A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Not available.

## 9. Physical and chemical properties

	Inorganic Pyrophosphatase	Not available.
	CTP	Not available.
	dNTP	Not available.
	Cyanine 3-CTP	Not available.
	Cyanine 5-CTP	Not available.
<b>Vapor density</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Not available.
	NTP Mix	Not available.
	4X Transcription Buffer	Not available.
	T7 RNA Polymerase	Not available.
	RNAse A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Not available.
	Inorganic Pyrophosphatase	Not available.
	CTP	Not available.
	dNTP	Not available.
	Cyanine 3-CTP	Not available.
	Cyanine 5-CTP	Not available.
<b>Volatility</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Not available.
	NTP Mix	Not available.
	4X Transcription Buffer	Not available.
	T7 RNA Polymerase	Not available.
	RNAse A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Not available.
	Inorganic Pyrophosphatase	Not available.
	CTP	Not available.
	dNTP	Not available.
	Cyanine 3-CTP	Not available.
	Cyanine 5-CTP	Not available.
<b>Odor threshold</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Not available.
	NTP Mix	Not available.
	4X Transcription Buffer	Not available.
	T7 RNA Polymerase	Not available.
	RNAse A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Not available.
	Inorganic Pyrophosphatase	Not available.
	CTP	Not available.
	dNTP	Not available.
	Cyanine 3-CTP	Not available.
	Cyanine 5-CTP	Not available.

## 9. Physical and chemical properties

<b>Evaporation rate</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Not available.
	NTP Mix	Not available.
	4X Transcription Buffer	Not available.
	T7 RNA Polymerase	Not available.
	RNase A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Not available.
	Inorganic Pyrophosphatase	Not available.
	CTP	Not available.
	dNTP	Not available.
Cyanine 3-CTP	Not available.	
Cyanine 5-CTP	Not available.	
<b>Viscosity</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Not available.
	NTP Mix	Not available.
	4X Transcription Buffer	Not available.
	T7 RNA Polymerase	Not available.
	RNase A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Not available.
	Inorganic Pyrophosphatase	Not available.
	CTP	Not available.
	dNTP	Not available.
Cyanine 3-CTP	Not available.	
Cyanine 5-CTP	Not available.	
<b>Solubility</b>	: PEG	Soluble in the following materials: cold water and hot water.
	T7 Promoter Primer	Easily soluble in the following materials: cold water and hot water.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Easily soluble in the following materials: cold water and hot water.
	10 mM dNTP Mix	Easily soluble in the following materials: cold water and hot water.
	RNaseOUT	Soluble in the following materials: cold water and hot water.
	NTP Mix	Easily soluble in the following materials: cold water and hot water.
	4X Transcription Buffer	Easily soluble in the following materials: cold water and hot water.
	T7 RNA Polymerase	Soluble in the following materials: cold water and hot water.
	RNase A	Not available.
	Random Hexamers	Easily soluble in the following materials: cold water and hot water.
	MMLV-RT	Soluble in the following materials: cold water and hot water.
	Inorganic Pyrophosphatase	Soluble in the following materials: cold water and hot water.
	CTP	Not available.
	dNTP	Easily soluble in the following materials: cold water and hot water.
Cyanine 3-CTP	Easily soluble in the following materials: cold water and hot water.	



**9. Physical and chemical properties**

Cyanine 5-CTP

Easily soluble in the following materials: cold water and hot water.

**10. Stability and reactivity****Chemical stability**

: PEG	The product is stable.
T7 Promoter Primer	The product is stable.
5X First Strand Buffer	The product is stable.
DTT 0.1M	The product is stable.
10 mM dNTP Mix	The product is stable.
RNaseOUT	The product is stable.
NTP Mix	The product is stable.
4X Transcription Buffer	The product is stable.
T7 RNA Polymerase	The product is stable.
RNase A	The product is stable.
Random Hexamers	The product is stable.
MMLV-RT	The product is stable.
Inorganic Pyrophosphatase	The product is stable.
CTP	The product is stable.
dNTP	The product is stable.
Cyanine 3-CTP	The product is stable.
Cyanine 5-CTP	The product is stable.

**Conditions to avoid**

: PEG	No specific data.
T7 Promoter Primer	No specific data.
5X First Strand Buffer	No specific data.
DTT 0.1M	No specific data.
10 mM dNTP Mix	No specific data.
RNaseOUT	No specific data.
NTP Mix	No specific data.
4X Transcription Buffer	No specific data.
T7 RNA Polymerase	No specific data.
RNase A	No specific data.
Random Hexamers	No specific data.
MMLV-RT	No specific data.
Inorganic Pyrophosphatase	No specific data.
CTP	No specific data.
dNTP	No specific data.
Cyanine 3-CTP	No specific data.
Cyanine 5-CTP	No specific data.

**Materials to avoid**

: PEG	No specific data.
T7 Promoter Primer	No specific data.
5X First Strand Buffer	No specific data.
DTT 0.1M	No specific data.
10 mM dNTP Mix	No specific data.
RNaseOUT	No specific data.
NTP Mix	No specific data.
4X Transcription Buffer	No specific data.
T7 RNA Polymerase	No specific data.
RNase A	No specific data.
Random Hexamers	No specific data.
MMLV-RT	No specific data.
Inorganic Pyrophosphatase	No specific data.
CTP	No specific data.
dNTP	No specific data.
Cyanine 3-CTP	No specific data.
Cyanine 5-CTP	No specific data.

## 10. Stability and reactivity

<b>Hazardous decomposition products</b>	: PEG	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	T7 Promoter Primer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	5X First Strand Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	DTT 0.1M	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	10 mM dNTP Mix	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	RNaseOUT	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	NTP Mix	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	4X Transcription Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	T7 RNA Polymerase	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	RNase A	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Random Hexamers	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	MMLV-RT	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Inorganic Pyrophosphatase	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	CTP	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	dNTP	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Cyanine 3-CTP	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Cyanine 5-CTP	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
<b>Possibility of hazardous reactions</b>	: PEG	Under normal conditions of storage and use, hazardous reactions will not occur.
	T7 Promoter Primer	Under normal conditions of storage and use, hazardous reactions will not occur.
	5X First Strand Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	DTT 0.1M	Under normal conditions of storage and use, hazardous reactions will not occur.
	10 mM dNTP Mix	Under normal conditions of storage and use, hazardous reactions will not occur.
	RNaseOUT	Under normal conditions of storage and use, hazardous reactions will not occur.

## 10. Stability and reactivity

NTP Mix	Under normal conditions of storage and use, hazardous reactions will not occur.
4X Transcription Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
T7 RNA Polymerase	Under normal conditions of storage and use, hazardous reactions will not occur.
RNase A	Under normal conditions of storage and use, hazardous reactions will not occur.
Random Hexamers	Under normal conditions of storage and use, hazardous reactions will not occur.
MMLV-RT	Under normal conditions of storage and use, hazardous reactions will not occur.
Inorganic Pyrophosphatase	Under normal conditions of storage and use, hazardous reactions will not occur.
CTP	Under normal conditions of storage and use, hazardous reactions will not occur.
dNTP	Under normal conditions of storage and use, hazardous reactions will not occur.
Cyanine 3-CTP	Under normal conditions of storage and use, hazardous reactions will not occur.
Cyanine 5-CTP	Under normal conditions of storage and use, hazardous reactions will not occur.

## 11. Toxicological information

### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
<b>5X First Strand Buffer</b> Potassium chloride	LD50 Oral	Rat	2600 mg/kg	-
<b>RNaseOUT</b> Glycerol	LD50 Oral	Rat	12600 mg/kg	-
<b>T7 RNA Polymerase</b> Glycerol	LD50 Oral	Rat	12600 mg/kg	-
<b>MMLV-RT</b> Glycerol	LD50 Oral	Rat	12600 mg/kg	-
<b>Inorganic Pyrophosphatase</b> Glycerol	LD50 Oral	Rat	12600 mg/kg	-

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>PEG</b> Polyethylene glycol	Eyes - Mild irritant	Rabbit	-	-	-
	Skin - Mild irritant	Rabbit	-	-	-
<b>5X First Strand Buffer</b> Potassium chloride	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
<b>RNaseOUT</b> Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
<b>T7 RNA Polymerase</b> Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

## 11. Toxicological information

<b>MMLV-RT</b> Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
<b>Inorganic Pyrophosphatase</b> Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

### Sensitizer

**Conclusion/Summary** : Not available.

### Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

<b>Other adverse symptoms</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Not available.
	NTP Mix	Not available.
	4X Transcription Buffer	Not available.
	T7 RNA Polymerase	Not available.
	RNAse A	Not available.
	Random Hexamers	Not available.
	MMLV-RT	Not available.
	Inorganic Pyrophosphatase	Not available.
	CTP	Not available.
	dNTP	Not available.
	Cyanine 3-CTP	Not available.
	Cyanine 5-CTP	Not available.

## 12. Ecological information

**Ecotoxicity** : May cause long-term adverse effects in the aquatic environment.

### Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
<b>PEG</b> Polyethylene glycol	Acute LC50 >1000000 µg/l Fresh water	Fish - Salmo salar - Parr	96 hours
<b>5X First Strand Buffer</b> Potassium chloride	Acute EC50 1337000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 83000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 9.68 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	48 hours
<b>DTT 0.1M</b> (R*,R*)-1,4-Dimercaptobutane-2,3-diol	Acute LC50 435000 µg/l Fresh water	Fish - Gambusia affinis - Adult	96 hours
	Acute LC50 27000 to 30000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours

<b>Partition coefficient: n-octanol/water</b>	: PEG	Not available.
	T7 Promoter Primer	Not available.
	5X First Strand Buffer	Not available.
	DTT 0.1M	Not available.
	10 mM dNTP Mix	Not available.
	RNaseOUT	Not available.
	NTP Mix	Not available.

## 12. Ecological information

4X Transcription Buffer	Not available.
T7 RNA Polymerase	Not available.
RNAse A	Not available.
Random Hexamers	Not available.
MMLV-RT	Not available.
Inorganic Pyrophosphatase	Not available.
CTP	Not available.
dNTP	Not available.
Cyanine 3-CTP	Not available.
Cyanine 5-CTP	Not available.

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

## 13. Disposal considerations

**Waste disposal** : 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.

## 14. Transport information

### Regulatory information

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

## 15. Regulatory information

<b>HCS Classification</b>	:	PEG	Not regulated.
		T7 Promoter Primer	Not regulated.
		5X First Strand Buffer	Irritating material
			Target organ effects
		DTT 0.1M	Toxic material
			Irritating material
			Target organ effects
		10 mM dNTP Mix	Not regulated.
		RNAseOUT	Target organ effects
		NTP Mix	Not regulated.
		4X Transcription Buffer	Irritating material
			Target organ effects
		T7 RNA Polymerase	Target organ effects
		RNAse A	Not regulated.
		Random Hexamers	Not regulated.
		MMLV-RT	Target organ effects
		Inorganic Pyrophosphatase	Target organ effects
		CTP	Not regulated.
		dNTP	Not regulated.

## 15. Regulatory information

Cyanine 3-CTP Not regulated.  
Cyanine 5-CTP Not regulated.

**U.S. Federal regulations** : **TSCA 8(a) PAIR:** Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-; Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-  
**TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**United States inventory (TSCA 8b):** At least one component is not listed.  
**SARA 302/304:** No products were found.  
**SARA 311/312 Hazards identification:** Delayed (chronic) health hazard  
**Clean Water Act (CWA) 311:** 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

### 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

No products were found.

## 16. Other information

<b>Label requirements</b>	: PEG T7 Promoter Primer	MAY CAUSE EYE AND SKIN IRRITATION. NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
	5X First Strand Buffer	CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
	DTT 0.1M	HARMFUL IF SWALLOWED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
	10 mM dNTP Mix	NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
	RNaseOUT	MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
	NTP Mix	MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
	4X Transcription Buffer	CAUSES RESPIRATORY TRACT, EYE AND SKIN

## 16. Other information

T7 RNA Polymerase	IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
RNase A	NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
Random Hexamers	NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
MMLV-RT	MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
Inorganic Pyrophosphatase	MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
CTP	NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
dNTP	NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
Cyanine 3-CTP	NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
Cyanine 5-CTP	NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

**Date of issue** : 03/18/2013

**Date of previous issue** : No previous validation.

**Version** : 1

☑ Indicates information that has changed from previously issued version.

### Notice to reader

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