Conforms to Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals

SAFETY DATA SHEET

Agilent Technologies

Quick Amp Labeling Kit, Part Number 5190-0424

Section 1. Identification

Product identifier : Quick Amp Labeling Kit, Part Number 5190-0424

Part no. (chemical kit) : 5190-0424

Part no. :

Inorganic Pyrophosphatase	5062-9581
T7 RNA Polymerase	5062-9582
PEG	5062-9583
T7 Primer	5062-9572
5X First Strand Buffer	5062-9573
0.1 M DTT	5062-9574
10 mM dNTP Mix	5062-9575
RNase Inhibitor	5062-9576
MMLV-RT	5062-9577
4X Transcription Buffer	5062-9578
NTP Mix	5062-9579

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

Material uses : For research use only. Not for use in diagnostic procedures (RUO).

Inorganic Pyrophosphatase	0.015 ml	
T7 RNA Polymerase	0.02 ml	
PEG	0.14 ml	
T7 Primer	0.03 ml	
5X First Strand Buffer	0.195 ml	
0.1 M DTT	0.23 ml	
10 mM dNTP Mix	0.025 ml	
RNase Inhibitor	0.025 ml	
MMLV-RT	300 U/µl	25 µl
4X Transcription Buffer	0.43 ml	
NTP Mix	0.175 ml	

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

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

Section 2. Hazard(s) identification

Classification of the substance or mixture

Not classified.

Inorganic Pyrophosphatase	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%
T7 RNA Polymerase	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%
PEG	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%
5X First Strand Buffer	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: > 60%
0.1 M DTT	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s)

Section 2. Hazard(s) identification

	of unknown inhalation toxicity: 1 - 10%
RNase Inhibitor	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%
MMLV-RT	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%
4X Transcription Buffer	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%
NTP Mix	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%
4X Transcription Buffer	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 2.5%
NTP Mix	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 4%

GHS label elements

Signal word

Inorganic Pyrophosphatase	No signal word.
T7 RNA Polymerase	No signal word.
PEG	No signal word.
T7 Primer	No signal word.
5X First Strand Buffer	No signal word.
0.1 M DTT	No signal word.
10 mM dNTP Mix	No signal word.
RNase Inhibitor	No signal word.
MMLV-RT	No signal word.
4X Transcription Buffer	No signal word.
NTP Mix	No signal word.

Hazard statements

Inorganic Pyrophosphatase	No known significant effects or critical hazards.
T7 RNA Polymerase	No known significant effects or critical hazards.
PEG	No known significant effects or critical hazards.
T7 Primer	No known significant effects or critical hazards.
5X First Strand Buffer	No known significant effects or critical hazards.
0.1 M DTT	No known significant effects or critical hazards.
10 mM dNTP Mix	No known significant effects or critical hazards.
RNase Inhibitor	No known significant effects or critical hazards.
MMLV-RT	No known significant effects or critical hazards.
4X Transcription Buffer	No known significant effects or critical hazards.
NTP Mix	No known significant effects or critical hazards.

Precautionary statements

Prevention

Inorganic Pyrophosphatase	Not applicable.
T7 RNA Polymerase	Not applicable.
PEG	Not applicable.
T7 Primer	Not applicable.
5X First Strand Buffer	Not applicable.
0.1 M DTT	Not applicable.
10 mM dNTP Mix	Not applicable.
RNase Inhibitor	Not applicable.
MMLV-RT	Not applicable.
4X Transcription Buffer	Not applicable.
NTP Mix	Not applicable.

Section 2. Hazard(s) identification

Response	:	Inorganic Pyrophosphatase	Not applicable.
		T7 RNA Polymerase	Not applicable.
		PEG	Not applicable.
		T7 Primer	Not applicable.
		5X First Strand Buffer	Not applicable.
		0.1 M DTT	Not applicable.
		10 mM dNTP Mix	Not applicable.
		RNase Inhibitor	Not applicable.
		MMLV-RT	Not applicable.
		4X Transcription Buffer	Not applicable.
		NTP Mix	Not applicable.
Storage	:	Inorganic Pyrophosphatase	Not applicable.
		T7 RNA Polymerase	Not applicable.
		PEG	Not applicable.
		T7 Primer	Not applicable.
		5X First Strand Buffer	Not applicable.
		0.1 M DTT	Not applicable.
		10 mM dNTP Mix	Not applicable.
		RNase Inhibitor	Not applicable.
		MMLV-RT	Not applicable.
		4X Transcription Buffer	Not applicable.
		NTP Mix	Not applicable.
Disposal	:	Inorganic Pyrophosphatase	Not applicable.
		T7 RNA Polymerase	Not applicable.
		PEG	Not applicable.
		T7 Primer	Not applicable.
		5X First Strand Buffer	Not applicable.
		0.1 M DTT	Not applicable.
		10 mM dNTP Mix	Not applicable.
		RNase Inhibitor	Not applicable.
		MMLV-RT	Not applicable.
		4X Transcription Buffer	Not applicable.
		NTP Mix	Not applicable.

Supplemental label elements

Additional warning phrases	:	Inorganic Pyrophosphatase	Not applicable.
		T7 RNA Polymerase	Not applicable.
		PEG	Not applicable.
		T7 Primer	Not applicable.
		5X First Strand Buffer	Not applicable.
		0.1 M DTT	Not applicable.
		10 mM dNTP Mix	Not applicable.
		RNase Inhibitor	Not applicable.
		MMLV-RT	Not applicable.
		4X Transcription Buffer	Not applicable.
		NTP Mix	Not applicable.

Other hazards which do not result in classification	:	Inorganic Pyrophosphatase	None known.
		T7 RNA Polymerase	None known.
		PEG	None known.
		T7 Primer	None known.
		5X First Strand Buffer	None known.
		0.1 M DTT	None known.
		10 mM dNTP Mix	None known.
		RNase Inhibitor	None known.
		MMLV-RT	None known.
		4X Transcription Buffer	None known.
		NTP Mix	None known.

Section 3. Composition and ingredient information

Substance/mixture : Inorganic Pyrophosphatase Mixture
T7 RNA Polymerase Mixture
PEG Mixture
T7 Primer Mixture
5X First Strand Buffer Mixture
0.1 M DTT Mixture
10 mM dNTP Mix Mixture
RNase Inhibitor Mixture
MMLV-RT Mixture
4X Transcription Buffer Mixture
NTP Mix Mixture

CAS number/other identifiers

Ingredient name	% (w/w)	CAS number
Inorganic Pyrophosphatase		
Glycerol	≥30 - ≤60	56-81-5
T7 RNA Polymerase		
Glycerol	≥30 - ≤60	56-81-5
PEG		
Polyethylene glycol	≥30 - ≤60	25322-68-3
RNase Inhibitor		
Glycerol	≥30 - ≤60	56-81-5
MMLV-RT		
Glycerol	≥30 - ≤60	56-81-5

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

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Inorganic Pyrophosphatase: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

T7 RNA Polymerase: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

PEG: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

T7 Primer: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

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

0.1 M DTT: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Section 4. First aid measures

		10 mM dNTP Mix	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
		RNase Inhibitor	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
		MMLV-RT	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
		4X Transcription Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
		NTP Mix	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	:	Inorganic Pyrophosphatase	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
		T7 RNA Polymerase	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		PEG	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
		T7 Primer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
		5X First Strand Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
		0.1 M DTT	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
		10 mM dNTP Mix	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
		RNase Inhibitor	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		MMLV-RT	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		4X Transcription Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		NTP Mix	Remove victim to fresh air and keep at rest in a

Section 4. First aid measures

			position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Skin contact	:	Inorganic Pyrophosphatase	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		T7 RNA Polymerase	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		PEG	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		T7 Primer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		5X First Strand Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		0.1 M DTT	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		10 mM dNTP Mix	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		RNase Inhibitor	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		MMLV-RT	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		4X Transcription Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		NTP Mix	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	:	Inorganic Pyrophosphatase	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
		T7 RNA Polymerase	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
		PEG	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
		T7 Primer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of

Section 4. First aid measures

	water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
5X First Strand Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
0.1 M DTT	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
10 mM dNTP Mix	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
RNase Inhibitor	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
MMLV-RT	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
4X Transcription Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
NTP Mix	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	:	Inorganic Pyrophosphatase	No known significant effects or critical hazards.
		T7 RNA Polymerase	No known significant effects or critical hazards.
		PEG	No known significant effects or critical hazards.
		T7 Primer	No known significant effects or critical hazards.
		5X First Strand Buffer	No known significant effects or critical hazards.
		0.1 M DTT	No known significant effects or critical hazards.
		10 mM dNTP Mix	No known significant effects or critical hazards.

Section 4. First aid measures

		RNase Inhibitor	No known significant effects or critical hazards.
		MMLV-RT	No known significant effects or critical hazards.
		4X Transcription Buffer	No known significant effects or critical hazards.
		NTP Mix	No known significant effects or critical hazards.
Inhalation	:	Inorganic Pyrophosphatase	No known significant effects or critical hazards.
		T7 RNA Polymerase	No known significant effects or critical hazards.
		PEG	No known significant effects or critical hazards.
		T7 Primer	No known significant effects or critical hazards.
		5X First Strand Buffer	No known significant effects or critical hazards.
		0.1 M DTT	No known significant effects or critical hazards.
		10 mM dNTP Mix	No known significant effects or critical hazards.
		RNase Inhibitor	No known significant effects or critical hazards.
		MMLV-RT	No known significant effects or critical hazards.
		4X Transcription Buffer	No known significant effects or critical hazards.
		NTP Mix	No known significant effects or critical hazards.
Skin contact	:	Inorganic Pyrophosphatase	No known significant effects or critical hazards.
		T7 RNA Polymerase	No known significant effects or critical hazards.
		PEG	No known significant effects or critical hazards.
		T7 Primer	No known significant effects or critical hazards.
		5X First Strand Buffer	No known significant effects or critical hazards.
		0.1 M DTT	No known significant effects or critical hazards.
		10 mM dNTP Mix	No known significant effects or critical hazards.
		RNase Inhibitor	No known significant effects or critical hazards.
		MMLV-RT	No known significant effects or critical hazards.
		4X Transcription Buffer	No known significant effects or critical hazards.
		NTP Mix	No known significant effects or critical hazards.
Ingestion	:	Inorganic Pyrophosphatase	No known significant effects or critical hazards.
		T7 RNA Polymerase	No known significant effects or critical hazards.
		PEG	No known significant effects or critical hazards.
		T7 Primer	No known significant effects or critical hazards.
		5X First Strand Buffer	No known significant effects or critical hazards.
		0.1 M DTT	No known significant effects or critical hazards.
		10 mM dNTP Mix	No known significant effects or critical hazards.
		RNase Inhibitor	No known significant effects or critical hazards.
		MMLV-RT	No known significant effects or critical hazards.
		4X Transcription Buffer	No known significant effects or critical hazards.
		NTP Mix	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	Inorganic Pyrophosphatase	No specific data.
		T7 RNA Polymerase	No specific data.
		PEG	No specific data.
		T7 Primer	No specific data.
		5X First Strand Buffer	No specific data.
		0.1 M DTT	No specific data.
		10 mM dNTP Mix	No specific data.
		RNase Inhibitor	No specific data.
		MMLV-RT	No specific data.
		4X Transcription Buffer	No specific data.
		NTP Mix	No specific data.
Inhalation	:	Inorganic Pyrophosphatase	No specific data.
		T7 RNA Polymerase	No specific data.
		PEG	No specific data.
		T7 Primer	No specific data.
		5X First Strand Buffer	No specific data.
		0.1 M DTT	No specific data.
		10 mM dNTP Mix	No specific data.
		RNase Inhibitor	No specific data.
		MMLV-RT	No specific data.
		4X Transcription Buffer	No specific data.
		NTP Mix	No specific data.

Section 4. First aid measures

Skin contact	:	Inorganic Pyrophosphatase	No specific data.
		T7 RNA Polymerase	No specific data.
		PEG	No specific data.
		T7 Primer	No specific data.
		5X First Strand Buffer	No specific data.
		0.1 M DTT	No specific data.
		10 mM dNTP Mix	No specific data.
		RNase Inhibitor	No specific data.
		MMLV-RT	No specific data.
		4X Transcription Buffer	No specific data.
		NTP Mix	No specific data.
Ingestion	:	Inorganic Pyrophosphatase	No specific data.
		T7 RNA Polymerase	No specific data.
		PEG	No specific data.
		T7 Primer	No specific data.
		5X First Strand Buffer	No specific data.
		0.1 M DTT	No specific data.
		10 mM dNTP Mix	No specific data.
		RNase Inhibitor	No specific data.
		MMLV-RT	No specific data.
		4X Transcription Buffer	No specific data.
		NTP Mix	No specific data.

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

Notes to physician	:	Inorganic Pyrophosphatase	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		T7 RNA Polymerase	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		PEG	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		T7 Primer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		5X First Strand Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		0.1 M DTT	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		10 mM dNTP Mix	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		RNase Inhibitor	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.
		MMLV-RT	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.
		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.

Section 4. First aid measures

Specific treatments	:	Inorganic Pyrophosphatase	No specific treatment.
		T7 RNA Polymerase	No specific treatment.
		PEG	No specific treatment.
		T7 Primer	No specific treatment.
		5X First Strand Buffer	No specific treatment.
		0.1 M DTT	No specific treatment.
		10 mM dNTP Mix	No specific treatment.
		RNase Inhibitor	No specific treatment.
		MMLV-RT	No specific treatment.
		4X Transcription Buffer	No specific treatment.
		NTP Mix	No specific treatment.
Protection of first-aiders	:	Inorganic Pyrophosphatase	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.
		PEG	No action shall be taken involving any personal risk or without suitable training.
		T7 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.
		0.1 M DTT	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.
		RNase Inhibitor	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.
		4X Transcription Buffer	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.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media	:	Inorganic Pyrophosphatase	Use an extinguishing agent suitable for the surrounding fire.
		T7 RNA Polymerase	Use an extinguishing agent suitable for the surrounding fire.
		PEG	Use an extinguishing agent suitable for the surrounding fire.
		T7 Primer	Use an extinguishing agent suitable for the surrounding fire.
		5X First Strand Buffer	Use an extinguishing agent suitable for the surrounding fire.
		0.1 M DTT	Use an extinguishing agent suitable for the surrounding fire.
		10 mM dNTP Mix	Use an extinguishing agent suitable for the surrounding fire.
		RNase Inhibitor	Use an extinguishing agent suitable for the surrounding fire.
		MMLV-RT	Use an extinguishing agent suitable for the surrounding fire.
		4X Transcription Buffer	Use an extinguishing agent suitable for the surrounding fire.
		NTP Mix	Use an extinguishing agent suitable for the surrounding fire.

Section 5. Firefighting measures

Unsuitable extinguishing media :	Inorganic Pyrophosphatase	None known.
	T7 RNA Polymerase	None known.
	PEG	None known.
	T7 Primer	None known.
	5X First Strand Buffer	None known.
	0.1 M DTT	None known.
	10 mM dNTP Mix	None known.
	RNase Inhibitor	None known.
	MMLV-RT	None known.
	4X Transcription Buffer	None known.
	NTP Mix	None known.
Specific hazards arising from the chemical :	Inorganic Pyrophosphatase	In a fire or if heated, a pressure increase will occur and the container may burst.
	T7 RNA Polymerase	In a fire or if heated, a pressure increase will occur and the container may burst.
	PEG	In a fire or if heated, a pressure increase will occur and the container may burst.
	T7 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.
	0.1 M DTT	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.
	RNase Inhibitor	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.
	4X Transcription Buffer	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.
Hazardous thermal decomposition products :	Inorganic Pyrophosphatase	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	T7 RNA Polymerase	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
	PEG	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	T7 Primer	No specific data.
	5X First Strand Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
	0.1 M DTT	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	10 mM dNTP Mix	No specific data.
	RNase Inhibitor	Decomposition products may include the following materials:

Section 5. Firefighting measures

		carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
	MMLV-RT	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
	NTP Mix	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
Special protective actions for fire-fighters :	Inorganic Pyrophosphatase	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	T7 RNA Polymerase	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	PEG	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	T7 Primer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	5X First Strand Buffer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	0.1 M DTT	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	10 mM dNTP Mix	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	RNase Inhibitor	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	MMLV-RT	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	4X Transcription Buffer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or

Section 5. Firefighting measures

			without suitable training.
		NTP Mix	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	:	Inorganic Pyrophosphatase	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		T7 RNA Polymerase	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		PEG	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		T7 Primer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		5X First Strand Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		0.1 M DTT	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		10 mM dNTP Mix	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		RNase Inhibitor	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		MMLV-RT	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		4X Transcription Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		NTP Mix	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:	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 spilt material. Put on appropriate personal protective equipment.
		T7 RNA Polymerase	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk

Section 6. Accidental release measures

		through spilt material. Put on appropriate personal protective equipment.
	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 spilt material. Put on appropriate personal protective equipment.
	T7 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 spilt material. Put on appropriate personal protective equipment.
	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 spilt material. Put on appropriate personal protective equipment.
	0.1 M DTT	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	10 mM dNTP Mix	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	RNase Inhibitor	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	MMLV-RT	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	4X Transcription Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	NTP Mix	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
For emergency responders :	Inorganic Pyrophosphatase	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	T7 RNA Polymerase	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the

Section 6. Accidental release measures

		information in "For non-emergency personnel".
	PEG	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	T7 Primer	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	5X First Strand Buffer	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	0.1 M DTT	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	10 mM dNTP Mix	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	RNase Inhibitor	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	MMLV-RT	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	4X Transcription Buffer	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	NTP Mix	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions :	Inorganic Pyrophosphatase	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	T7 RNA Polymerase	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	PEG	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	T7 Primer	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	5X First Strand Buffer	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Section 6. Accidental release measures

0.1 M DTT	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
10 mM dNTP Mix	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
RNase Inhibitor	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
MMLV-RT	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
4X Transcription Buffer	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
NTP Mix	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Methods for cleaning up	:	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.
		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.
		PEG	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 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.
		0.1 M DTT	Stop leak if without risk. Move containers from spill

Section 6. Accidental release measures

		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.
	RNase Inhibitor	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.
	MMLV-RT	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.
	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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	:	Inorganic Pyrophosphatase	Put on appropriate personal protective equipment (see Section 8).
		T7 RNA Polymerase	Put on appropriate personal protective equipment (see Section 8).
		PEG	Put on appropriate personal protective equipment (see Section 8).
		T7 Primer	Put on appropriate personal protective equipment (see Section 8).
		5X First Strand Buffer	Put on appropriate personal protective equipment (see Section 8).
		0.1 M DTT	Put on appropriate personal protective equipment (see Section 8).
		10 mM dNTP Mix	Put on appropriate personal protective equipment (see Section 8).
		RNase Inhibitor	Put on appropriate personal protective equipment (see Section 8).
		MMLV-RT	Put on appropriate personal protective equipment (see Section 8).
		4X Transcription Buffer	Put on appropriate personal protective equipment (see Section 8).
		NTP Mix	Put on appropriate personal protective equipment (see Section 8).

Section 7. Handling and storage

Advice on general occupational hygiene	:	Inorganic Pyrophosphatase	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
		T7 RNA Polymerase	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
		PEG	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
		T7 Primer	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
		5X First Strand Buffer	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
		0.1 M DTT	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
		10 mM dNTP Mix	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
		RNase Inhibitor	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
		MMLV-RT	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

	4X Transcription Buffer	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
	NTP Mix	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities :	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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	T7 RNA Polymerase	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	T7 Primer	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	5X First Strand 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

Section 7. Handling and storage

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

Section 7. Handling and storage

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

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Inorganic Pyrophosphatase Glycerol	**Safe Work Australia (Australia, 1/2014).** TWA: 10 mg/m³ 8 hours.
T7 RNA Polymerase Glycerol	**Safe Work Australia (Australia, 1/2014).** TWA: 10 mg/m³ 8 hours.
PEG Polyethylene glycol	**DFG MAC-values list (Germany, 7/2017).** PEAK: 8000 mg/m³, 4 times per shift, 15 minutes. Form: Inhalable fraction TWA: 1000 mg/m³ 8 hours. Form: Inhalable fraction
RNase Inhibitor Glycerol	**Safe Work Australia (Australia, 1/2014).** TWA: 10 mg/m³ 8 hours.
MMLV-RT Glycerol	**Safe Work Australia (Australia, 1/2014).** TWA: 10 mg/m³ 8 hours.

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

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

Individual protection measures

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

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Section 8. Exposure controls and personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

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

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

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

Section 9. Physical and chemical properties

Appearance

Physical state :

Inorganic Pyrophosphatase	Liquid.
T7 RNA Polymerase	Liquid.
PEG	Liquid.
T7 Primer	Liquid.
5X First Strand Buffer	Liquid.
0.1 M DTT	Liquid.
10 mM dNTP Mix	Liquid.
RNase Inhibitor	Liquid.
MMLV-RT	Liquid.
4X Transcription Buffer	Liquid.
NTP Mix	Liquid.

Colour :

Inorganic Pyrophosphatase	Not available.
T7 RNA Polymerase	Not available.
PEG	Not available.
T7 Primer	Not available.
5X First Strand Buffer	Not available.
0.1 M DTT	Not available.
10 mM dNTP Mix	Not available.
RNase Inhibitor	Not available.
MMLV-RT	Clear.
4X Transcription Buffer	Not available.
NTP Mix	Not available.

Odour :

Inorganic Pyrophosphatase	Not available.
T7 RNA Polymerase	Not available.
PEG	Not available.
T7 Primer	Not available.
5X First Strand Buffer	Not available.
0.1 M DTT	Not available.
10 mM dNTP Mix	Not available.
RNase Inhibitor	Not available.
MMLV-RT	Not available.
4X Transcription Buffer	Not available.
NTP Mix	Not available.

Odour threshold :

Inorganic Pyrophosphatase	Not available.
T7 RNA Polymerase	Not available.
PEG	Not available.
T7 Primer	Not available.
5X First Strand Buffer	Not available.
0.1 M DTT	Not available.
10 mM dNTP Mix	Not available.
RNase Inhibitor	Not available.
MMLV-RT	Not available.
4X Transcription Buffer	Not available.
NTP Mix	Not available.

pH :

Section 9. Physical and chemical properties

		Inorganic Pyrophosphatase	7.5
		T7 RNA Polymerase	Not available.
		PEG	Not available.
		T7 Primer	Not available.
		5X First Strand Buffer	8.3
		0.1 M DTT	Not available.
		10 mM dNTP Mix	Not available.
		RNase Inhibitor	Not available.
		MMLV-RT	Not available.
		4X Transcription Buffer	8
		NTP Mix	Not available.
Melting point	:	Inorganic Pyrophosphatase	Not available.
		T7 RNA Polymerase	Not available.
		PEG	Not available.
		T7 Primer	0°C (32°F)
		5X First Strand Buffer	Not available.
		0.1 M DTT	0°C (32°F)
		10 mM dNTP Mix	0°C (32°F)
		RNase Inhibitor	Not available.
		MMLV-RT	17.8°C (64°F)
		4X Transcription Buffer	0°C (32°F)
		NTP Mix	0°C (32°F)
Boiling point	:	Inorganic Pyrophosphatase	Not available.
		T7 RNA Polymerase	Not available.
		PEG	Not available.
		T7 Primer	100°C (212°F)
		5X First Strand Buffer	Not available.
		0.1 M DTT	100°C (212°F)
		10 mM dNTP Mix	100°C (212°F)
		RNase Inhibitor	Not available.
		MMLV-RT	289.7°C (553.5°F)
		4X Transcription Buffer	100°C (212°F)
		NTP Mix	100°C (212°F)
Flash point	:	Inorganic Pyrophosphatase	Not available.
		T7 RNA Polymerase	Not available.
		PEG	Not available.
		T7 Primer	Not available.
		5X First Strand Buffer	Not available.
		0.1 M DTT	Not available.
		10 mM dNTP Mix	Not available.
		RNase Inhibitor	Not available.
		MMLV-RT	Not available.
		4X Transcription Buffer	Not available.
		NTP Mix	Not available.
Evaporation rate	:	Inorganic Pyrophosphatase	Not available.
		T7 RNA Polymerase	Not available.
		PEG	Not available.
		T7 Primer	Not available.
		5X First Strand Buffer	Not available.
		0.1 M DTT	Not available.
		10 mM dNTP Mix	Not available.
		RNase Inhibitor	Not available.
		MMLV-RT	Not available.
		4X Transcription Buffer	Not available.
		NTP Mix	Not available.
Flammability (solid, gas)	:	Inorganic Pyrophosphatase	Not applicable.
		T7 RNA Polymerase	Not applicable.
		PEG	Not applicable.
		T7 Primer	Not applicable.
		5X First Strand Buffer	Not applicable.
		0.1 M DTT	Not applicable.
		10 mM dNTP Mix	Not applicable.

Section 9. Physical and chemical properties

		RNase Inhibitor	Not applicable.
		MMLV-RT	Not applicable.
		4X Transcription Buffer	Not applicable.
		NTP Mix	Not applicable.
Lower and upper explosive (flammable) limits	:	Inorganic Pyrophosphatase	Not available.
		T7 RNA Polymerase	Not available.
		PEG	Not available.
		T7 Primer	Not available.
		5X First Strand Buffer	Not available.
		0.1 M DTT	Not available.
		10 mM dNTP Mix	Not available.
		RNase Inhibitor	Not available.
		MMLV-RT	Not available.
		4X Transcription Buffer	Not available.
		NTP Mix	Not available.
Vapour pressure	:	Inorganic Pyrophosphatase	Not available.
		T7 RNA Polymerase	Not available.
		PEG	Not available.
		T7 Primer	Not available.
		5X First Strand Buffer	Not available.
		0.1 M DTT	Not available.
		10 mM dNTP Mix	Not available.
		RNase Inhibitor	Not available.
		MMLV-RT	Not available.
		4X Transcription Buffer	Not available.
		NTP Mix	Not available.
Vapour density	:	Inorganic Pyrophosphatase	Not available.
		T7 RNA Polymerase	Not available.
		PEG	Not available.
		T7 Primer	Not available.
		5X First Strand Buffer	Not available.
		0.1 M DTT	Not available.
		10 mM dNTP Mix	Not available.
		RNase Inhibitor	Not available.
		MMLV-RT	Not available.
		4X Transcription Buffer	Not available.
		NTP Mix	Not available.
Relative density	:	Inorganic Pyrophosphatase	Not available.
		T7 RNA Polymerase	Not available.
		PEG	Not available.
		T7 Primer	Not available.
		5X First Strand Buffer	Not available.
		0.1 M DTT	Not available.
		10 mM dNTP Mix	Not available.
		RNase Inhibitor	Not available.
		MMLV-RT	Not available.
		4X Transcription Buffer	Not available.
		NTP Mix	Not available.
Solubility	:	Inorganic Pyrophosphatase	Soluble in the following materials: cold water and hot water.
		T7 RNA Polymerase	Soluble in the following materials: cold water and hot water.
		PEG	Soluble in the following materials: cold water and hot water.
		T7 Primer	Easily soluble in the following materials: cold water and hot water.
		5X First Strand Buffer	Easily soluble in the following materials: cold water and hot water.
		0.1 M DTT	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.

Section 9. Physical and chemical properties

		RNase Inhibitor	Soluble in the following materials: cold water and hot water.
		MMLV-RT	Soluble in the following materials: cold water and hot water.
		4X Transcription Buffer	Easily soluble in the following materials: cold water and hot water.
		NTP Mix	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	:	Inorganic Pyrophosphatase	Not available.
		T7 RNA Polymerase	Not available.
		PEG	Not available.
		T7 Primer	Not available.
		5X First Strand Buffer	Not available.
		0.1 M DTT	Not available.
		10 mM dNTP Mix	Not available.
		RNase Inhibitor	Not available.
		MMLV-RT	Not available.
		4X Transcription Buffer	Not available.
		NTP Mix	Not available.
Auto-ignition temperature	:	Inorganic Pyrophosphatase	Not available.
		T7 RNA Polymerase	Not available.
		PEG	Not available.
		T7 Primer	Not available.
		5X First Strand Buffer	Not available.
		0.1 M DTT	Not available.
		10 mM dNTP Mix	Not available.
		RNase Inhibitor	Not available.
		MMLV-RT	Not available.
		4X Transcription Buffer	Not available.
		NTP Mix	Not available.
Decomposition temperature	:	Inorganic Pyrophosphatase	Not available.
		T7 RNA Polymerase	Not available.
		PEG	Not available.
		T7 Primer	Not available.
		5X First Strand Buffer	Not available.
		0.1 M DTT	Not available.
		10 mM dNTP Mix	Not available.
		RNase Inhibitor	Not available.
		MMLV-RT	Not available.
		4X Transcription Buffer	Not available.
		NTP Mix	Not available.
Viscosity	:	Inorganic Pyrophosphatase	Not available.
		T7 RNA Polymerase	Not available.
		PEG	Not available.
		T7 Primer	Not available.
		5X First Strand Buffer	Not available.
		0.1 M DTT	Not available.
		10 mM dNTP Mix	Not available.
		RNase Inhibitor	Not available.
		MMLV-RT	Not available.
		4X Transcription Buffer	Not available.
		NTP Mix	Not available.

Section 10. Stability and reactivity

Reactivity	:	Inorganic Pyrophosphatase	No specific test data related to reactivity available for this product or its ingredients.
		T7 RNA Polymerase	No specific test data related to reactivity available for this product or its ingredients.
		PEG	No specific test data related to reactivity available for this product or its ingredients.
		T7 Primer	No specific test data related to reactivity available for this product or its ingredients.

Section 10. Stability and reactivity

	5X First Strand Buffer	No specific test data related to reactivity available for this product or its ingredients.
	0.1 M DTT	No specific test data related to reactivity available for this product or its ingredients.
	10 mM dNTP Mix	No specific test data related to reactivity available for this product or its ingredients.
	RNase Inhibitor	No specific test data related to reactivity available for this product or its ingredients.
	MMLV-RT	No specific test data related to reactivity available for this product or its ingredients.
	4X Transcription Buffer	No specific test data related to reactivity available for this product or its ingredients.
	NTP Mix	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability :	Inorganic Pyrophosphatase	The product is stable.
	T7 RNA Polymerase	The product is stable.
	PEG	The product is stable.
	T7 Primer	The product is stable.
	5X First Strand Buffer	The product is stable.
	0.1 M DTT	The product is stable.
	10 mM dNTP Mix	The product is stable.
	RNase Inhibitor	The product is stable.
	MMLV-RT	The product is stable.
	4X Transcription Buffer	The product is stable.
	NTP Mix	The product is stable.
Possibility of hazardous reactions :	Inorganic Pyrophosphatase	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.
	PEG	Under normal conditions of storage and use, hazardous reactions will not occur.
	T7 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.
	0.1 M DTT	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.
	RNase Inhibitor	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.
	4X Transcription Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	NTP Mix	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid :	Inorganic Pyrophosphatase	No specific data.
	T7 RNA Polymerase	No specific data.
	PEG	No specific data.
	T7 Primer	No specific data.
	5X First Strand Buffer	No specific data.
	0.1 M DTT	No specific data.
	10 mM dNTP Mix	No specific data.
	RNase Inhibitor	No specific data.
	MMLV-RT	No specific data.
	4X Transcription Buffer	No specific data.
	NTP Mix	No specific data.

Section 10. Stability and reactivity

Incompatible materials :

Inorganic Pyrophosphatase	May react or be incompatible with oxidising materials.
T7 RNA Polymerase	May react or be incompatible with oxidising materials.
PEG	May react or be incompatible with oxidising materials.
T7 Primer	May react or be incompatible with oxidising materials.
5X First Strand Buffer	May react or be incompatible with oxidising materials.
0.1 M DTT	May react or be incompatible with oxidising materials.
10 mM dNTP Mix	May react or be incompatible with oxidising materials.
RNase Inhibitor	May react or be incompatible with oxidising materials.
MMLV-RT	May react or be incompatible with oxidising materials.
4X Transcription Buffer	May react or be incompatible with oxidising materials.
NTP Mix	May react or be incompatible with oxidising materials.

Hazardous decomposition products :

Inorganic Pyrophosphatase	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.
PEG	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
T7 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.
0.1 M DTT	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.
RNase Inhibitor	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.
4X Transcription Buffer	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.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Inorganic Pyrophosphatase				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
T7 RNA Polymerase				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
RNase Inhibitor				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
MMLV-RT				

Section 11. Toxicological information

Glycerol	LD50 Oral	Rat	12600 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Inorganic Pyrophosphatase					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
T7 RNA Polymerase					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
PEG					
Polyethylene glycol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
RNase Inhibitor					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
MMLV-RT					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitisation

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Section 11. Toxicological information

Information on likely routes of exposure :

Inorganic Pyrophosphatase	Routes of entry anticipated: Oral, Dermal, Inhalation.
T7 RNA Polymerase	Routes of entry anticipated: Oral, Dermal, Inhalation.
PEG	Routes of entry anticipated: Oral, Dermal, Inhalation.
T7 Primer	Not available.
5X First Strand Buffer	Not available.
0.1 M DTT	Routes of entry anticipated: Oral, Dermal, Inhalation.
10 mM dNTP Mix	Not available.
RNase Inhibitor	Routes of entry anticipated: Oral, Dermal, Inhalation.
MMLV-RT	Routes of entry anticipated: Oral, Dermal, Inhalation.
4X Transcription Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
NTP Mix	Not available.

Potential acute health effects

Eye contact :

Inorganic Pyrophosphatase	No known significant effects or critical hazards.
T7 RNA Polymerase	No known significant effects or critical hazards.
PEG	No known significant effects or critical hazards.
T7 Primer	No known significant effects or critical hazards.
5X First Strand Buffer	No known significant effects or critical hazards.
0.1 M DTT	No known significant effects or critical hazards.
10 mM dNTP Mix	No known significant effects or critical hazards.
RNase Inhibitor	No known significant effects or critical hazards.
MMLV-RT	No known significant effects or critical hazards.
4X Transcription Buffer	No known significant effects or critical hazards.
NTP Mix	No known significant effects or critical hazards.

Inhalation :

Inorganic Pyrophosphatase	No known significant effects or critical hazards.
T7 RNA Polymerase	No known significant effects or critical hazards.
PEG	No known significant effects or critical hazards.
T7 Primer	No known significant effects or critical hazards.
5X First Strand Buffer	No known significant effects or critical hazards.
0.1 M DTT	No known significant effects or critical hazards.
10 mM dNTP Mix	No known significant effects or critical hazards.
RNase Inhibitor	No known significant effects or critical hazards.
MMLV-RT	No known significant effects or critical hazards.
4X Transcription Buffer	No known significant effects or critical hazards.
NTP Mix	No known significant effects or critical hazards.

Skin contact :

Inorganic Pyrophosphatase	No known significant effects or critical hazards.
T7 RNA Polymerase	No known significant effects or critical hazards.
PEG	No known significant effects or critical hazards.
T7 Primer	No known significant effects or critical hazards.
5X First Strand Buffer	No known significant effects or critical hazards.
0.1 M DTT	No known significant effects or critical hazards.
10 mM dNTP Mix	No known significant effects or critical hazards.
RNase Inhibitor	No known significant effects or critical hazards.
MMLV-RT	No known significant effects or critical hazards.
4X Transcription Buffer	No known significant effects or critical hazards.
NTP Mix	No known significant effects or critical hazards.

Ingestion :

Inorganic Pyrophosphatase	No known significant effects or critical hazards.
T7 RNA Polymerase	No known significant effects or critical hazards.
PEG	No known significant effects or critical hazards.
T7 Primer	No known significant effects or critical hazards.
5X First Strand Buffer	No known significant effects or critical hazards.
0.1 M DTT	No known significant effects or critical hazards.
10 mM dNTP Mix	No known significant effects or critical hazards.
RNase Inhibitor	No known significant effects or critical hazards.
MMLV-RT	No known significant effects or critical hazards.
4X Transcription Buffer	No known significant effects or critical hazards.
NTP Mix	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

Eye contact	:	Inorganic Pyrophosphatase	No specific data.
		T7 RNA Polymerase	No specific data.
		PEG	No specific data.
		T7 Primer	No specific data.
		5X First Strand Buffer	No specific data.
		0.1 M DTT	No specific data.
		10 mM dNTP Mix	No specific data.
		RNase Inhibitor	No specific data.
		MMLV-RT	No specific data.
		4X Transcription Buffer	No specific data.
		NTP Mix	No specific data.
Inhalation	:	Inorganic Pyrophosphatase	No specific data.
		T7 RNA Polymerase	No specific data.
		PEG	No specific data.
		T7 Primer	No specific data.
		5X First Strand Buffer	No specific data.
		0.1 M DTT	No specific data.
		10 mM dNTP Mix	No specific data.
		RNase Inhibitor	No specific data.
		MMLV-RT	No specific data.
		4X Transcription Buffer	No specific data.
		NTP Mix	No specific data.
Skin contact	:	Inorganic Pyrophosphatase	No specific data.
		T7 RNA Polymerase	No specific data.
		PEG	No specific data.
		T7 Primer	No specific data.
		5X First Strand Buffer	No specific data.
		0.1 M DTT	No specific data.
		10 mM dNTP Mix	No specific data.
		RNase Inhibitor	No specific data.
		MMLV-RT	No specific data.
		4X Transcription Buffer	No specific data.
		NTP Mix	No specific data.
Ingestion	:	Inorganic Pyrophosphatase	No specific data.
		T7 RNA Polymerase	No specific data.
		PEG	No specific data.
		T7 Primer	No specific data.
		5X First Strand Buffer	No specific data.
		0.1 M DTT	No specific data.
		10 mM dNTP Mix	No specific data.
		RNase Inhibitor	No specific data.
		MMLV-RT	No specific data.
		4X Transcription Buffer	No specific data.
		NTP Mix	No specific data.

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Section 11. Toxicological information

General	:	Inorganic Pyrophosphatase	No known significant effects or critical hazards.
		T7 RNA Polymerase	No known significant effects or critical hazards.
		PEG	No known significant effects or critical hazards.
		T7 Primer	No known significant effects or critical hazards.
		5X First Strand Buffer	No known significant effects or critical hazards.
		0.1 M DTT	No known significant effects or critical hazards.
		10 mM dNTP Mix	No known significant effects or critical hazards.
		RNase Inhibitor	No known significant effects or critical hazards.
		MMLV-RT	No known significant effects or critical hazards.
		4X Transcription Buffer	No known significant effects or critical hazards.
		NTP Mix	No known significant effects or critical hazards.
Carcinogenicity	:	Inorganic Pyrophosphatase	No known significant effects or critical hazards.
		T7 RNA Polymerase	No known significant effects or critical hazards.
		PEG	No known significant effects or critical hazards.
		T7 Primer	No known significant effects or critical hazards.
		5X First Strand Buffer	No known significant effects or critical hazards.
		0.1 M DTT	No known significant effects or critical hazards.
		10 mM dNTP Mix	No known significant effects or critical hazards.
		RNase Inhibitor	No known significant effects or critical hazards.
		MMLV-RT	No known significant effects or critical hazards.
		4X Transcription Buffer	No known significant effects or critical hazards.
		NTP Mix	No known significant effects or critical hazards.
Mutagenicity	:	Inorganic Pyrophosphatase	No known significant effects or critical hazards.
		T7 RNA Polymerase	No known significant effects or critical hazards.
		PEG	No known significant effects or critical hazards.
		T7 Primer	No known significant effects or critical hazards.
		5X First Strand Buffer	No known significant effects or critical hazards.
		0.1 M DTT	No known significant effects or critical hazards.
		10 mM dNTP Mix	No known significant effects or critical hazards.
		RNase Inhibitor	No known significant effects or critical hazards.
		MMLV-RT	No known significant effects or critical hazards.
		4X Transcription Buffer	No known significant effects or critical hazards.
		NTP Mix	No known significant effects or critical hazards.
Teratogenicity	:	Inorganic Pyrophosphatase	No known significant effects or critical hazards.
		T7 RNA Polymerase	No known significant effects or critical hazards.
		PEG	No known significant effects or critical hazards.
		T7 Primer	No known significant effects or critical hazards.
		5X First Strand Buffer	No known significant effects or critical hazards.
		0.1 M DTT	No known significant effects or critical hazards.
		10 mM dNTP Mix	No known significant effects or critical hazards.
		RNase Inhibitor	No known significant effects or critical hazards.
		MMLV-RT	No known significant effects or critical hazards.
		4X Transcription Buffer	No known significant effects or critical hazards.
		NTP Mix	No known significant effects or critical hazards.
Developmental effects	:	Inorganic Pyrophosphatase	No known significant effects or critical hazards.
		T7 RNA Polymerase	No known significant effects or critical hazards.
		PEG	No known significant effects or critical hazards.
		T7 Primer	No known significant effects or critical hazards.
		5X First Strand Buffer	No known significant effects or critical hazards.
		0.1 M DTT	No known significant effects or critical hazards.
		10 mM dNTP Mix	No known significant effects or critical hazards.
		RNase Inhibitor	No known significant effects or critical hazards.
		MMLV-RT	No known significant effects or critical hazards.
		4X Transcription Buffer	No known significant effects or critical hazards.
		NTP Mix	No known significant effects or critical hazards.
Fertility effects	:	Inorganic Pyrophosphatase	No known significant effects or critical hazards.
		T7 RNA Polymerase	No known significant effects or critical hazards.
		PEG	No known significant effects or critical hazards.
		T7 Primer	No known significant effects or critical hazards.
		5X First Strand Buffer	No known significant effects or critical hazards.
		0.1 M DTT	No known significant effects or critical hazards.
		10 mM dNTP Mix	No known significant effects or critical hazards.

Section 11. Toxicological information

RNase Inhibitor	No known significant effects or critical hazards.
MMLV-RT	No known significant effects or critical hazards.
4X Transcription Buffer	No known significant effects or critical hazards.
NTP Mix	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
0.1 M DTT Oral	32467.5 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Inorganic Pyrophosphatase Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
T7 RNA Polymerase Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
PEG Polyethylene glycol	Acute LC50 >1000000 µg/l Fresh water	Fish - Salmo salar - Parr	96 hours
RNase Inhibitor Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
MMLV-RT Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Inorganic Pyrophosphatase Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
T7 RNA Polymerase Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
RNase Inhibitor Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
MMLV-RT Glycerol	301D Ready Biodegradability - Closed Bottle	93 % - 30 days	-	-

Section 12. Ecological information

	Test			

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Inorganic Pyrophosphatase			
Glycerol	-1.76	-	low
T7 RNA Polymerase			
Glycerol	-1.76	-	low
PEG			
Polyethylene glycol	-	3.2	low
RNase Inhibitor			
Glycerol	-1.76	-	low
MMLV-RT			
Glycerol	-1.76	-	low

Mobility in soil

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

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

Section 13. Disposal considerations

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

Section 14. Transport information

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

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

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

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

5

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	:	Not determined.
Canada	:	Not determined.
China	:	Not determined.
Europe	:	Not determined.
Japan	:	**Japan inventory (ENCS)**: Not determined. **Japan inventory (ISHL)**: Not determined.
Malaysia	:	Not determined.
New Zealand	:	Not determined.
Philippines	:	Not determined.
Republic of Korea	:	Not determined.
Taiwan	:	Not determined.
Thailand	:	Not determined.
Turkey	:	Not determined.
United States	:	Not determined.
Viet Nam	:	Not determined.

Section 16. Any other relevant information

History

Date of issue/Date of revision	:	29/06/2018
Date of previous issue	:	31/01/2016
Version	:	4
Key to abbreviations	:	ADG = Australian Dangerous Goods ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) NOHSC = National Occupational Health and Safety Commission

Section 16. Any other relevant information

SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

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