

**KAPA LTP Library Preparation Kit**Version  
3.0Revision Date:  
03-25-2022Date of last issue: 10-11-2021  
Date of first issue: 05-18-2016**SECTION 1. IDENTIFICATION**

Product name : KAPA LTP Library Preparation Kit

Product code : 07961863001

**Manufacturer or supplier's details**

Company name of supplier : Roche Diagnostics

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Address : 9115 Hague Road  
Indianapolis, IN 46250  
USA

Telephone : 1-800-428-5074

Emergency telephone

In case of emergencies: : CHEMTREC

1-800-424-9300 (U.S. or Canada)

1-703-527-3887 (International)

**Recommended use of the chemical and restrictions on use**

Restrictions on use : For professional users only.

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**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

The product is a kit consisting of individual ingredients. The classification of the ingredients can be obtained from section 3. Section GHS Label elements contains the resulting labelling for the kit

**GHS label elements**

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H319 Causes serious eye irritation.  
H370 Causes damage to organs.

Precautionary Statements :

**Prevention:**

P260 Do not breathe mist or vapors.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear eye protection/ face protection.

**Response:**

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water

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for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P307 + P311 IF exposed: Call a POISON CENTER or doctor/physician.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

**Storage:**

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS*****KAPA End-Repair Buffer (10X)*****GHS Classification**

Eye irritation : Category 2A

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
1,3-Propanediol, 2-amino-2-(hydroxymethyl)-	77-86-1	$\geq 5 - < 10$
2,3-Butanediol, 1,4-dimercapto-, (2R,3R)-rel-	3483-12-3	$\geq 1 - < 5$

Actual concentration is withheld as a trade secret

***Kapa A-Tailing Buffer (10X)*****GHS Classification**

Not a hazardous substance or mixture.

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
1,3-Propanediol, 2-amino-2-(hydroxymethyl)-	77-86-1	$\geq 1 - < 5$

Actual concentration is withheld as a trade secret

***Kapa Ligation Buffer (5X)*****GHS Classification**

Not a hazardous substance or mixture.

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
Poly(oxy-1,2-ethanediyl), .alpha.-	25322-68-3	$\geq 30 - < 50$

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hydro-.omega.-hydroxy- 1,3-Propanediol, 2-amino-2- (hydroxymethyl)-	77-86-1	>= 1 - < 5
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Actual concentration is withheld as a trade secret

**KAPA PEG/NaCl**
**GHS Classification**

Not a hazardous substance or mixture.

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
Poly(oxy-1,2-ethanediyl), .alpha.- hydro-.omega.-hydroxy-	25322-68-3	>= 20 - < 30

Actual concentration is withheld as a trade secret

**KAPA End Repair Enzyme Mix**
**GHS Classification**

Not a hazardous substance or mixture.

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
glycerol	56-81-5	>= 50 - < 70

Actual concentration is withheld as a trade secret

**KAPA HiFi HotStart ReadyMix (2X)**
**GHS Classification**
Specific target organ toxicity : Category 1  
- single exposure
**Components**

Chemical name	CAS-No.	Concentration (% w/w)
glycerol	56-81-5	>= 10 - < 20
1,3-Propanediol, 2-amino-2- (hydroxymethyl)-	77-86-1	>= 1 - < 5
Methanaminium, N,N,N-trimethyl-, chloride (1:1)	75-57-0	>= 1 - < 5
DNA-dependent DNA polymerase	9012-90-2	< 0.1

Actual concentration is withheld as a trade secret

**KAPA Library Amplification Primer Premixes (10X)**
**GHS Classification**

Not a hazardous substance or mixture.

**Components**

No hazardous ingredients

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### KAPA Hyper Prep DNA Ligase

#### GHS Classification

Not a hazardous substance or mixture.

#### Components

Chemical name	CAS-No.	Concentration (% w/w)
glycerol	56-81-5	$\geq 50 - < 70$
Polynucleotide 5'-hydroxyl kinase	37211-65-7	$\geq 0.1 - < 1$

Actual concentration is withheld as a trade secret

### KAPA A-Tailing Enzyme

#### GHS Classification

Not a hazardous substance or mixture.

#### Components

Chemical name	CAS-No.	Concentration (% w/w)
glycerol	56-81-5	$\geq 50 - < 70$
DNA-dependent DNA polymerase	9012-90-2	$< 0.1$

Actual concentration is withheld as a trade secret

## SECTION 4. FIRST AID MEASURES

- |                         |   |                                                                                                                                                                                                                                                                                       |
|-------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General advice          | : | Move out of dangerous area.<br>Show this material safety data sheet to the doctor in attendance.<br>Do not leave the victim unattended.                                                                                                                                               |
| If inhaled              | : | Move to fresh air.<br>If unconscious, place in recovery position and seek medical advice.<br>If symptoms persist, call a physician.                                                                                                                                                   |
| In case of skin contact | : | If skin irritation persists, call a physician.<br>If on skin, rinse well with water.<br>If on clothes, remove clothes.                                                                                                                                                                |
| In case of eye contact  | : | Immediately flush eye(s) with plenty of water.<br>Remove contact lenses.<br>Protect unharmed eye.<br>Keep eye wide open while rinsing.<br>If eye irritation persists, consult a specialist.                                                                                           |
| If swallowed            | : | Clean mouth with water and drink afterwards plenty of water.<br>Keep respiratory tract clear.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person.<br>If symptoms persist, call a physician.<br>Take victim immediately to hospital. |

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Rinse mouth with water.

Most important symptoms  
and effects, both acute and  
delayed : None known.

Notes to physician : The first aid procedure should be established in consultation  
with the doctor responsible for industrial medicine.

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**SECTION 5. FIRE-FIGHTING MEASURES**

Suitable extinguishing media : Use extinguishing measures that are appropriate to local cir-  
cumstances and the surrounding environment.

Unsuitable extinguishing  
media : High volume water jet

Specific hazards during fire  
fighting : No information available.

Further information : Standard procedure for chemical fires.  
Use extinguishing measures that are appropriate to local cir-  
cumstances and the surrounding environment.

Special protective equipment  
for fire-fighters : Wear self-contained breathing apparatus for firefighting if  
necessary.

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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protec- : Use personal protective equipment.  
tive equipment and emer-  
gency procedures Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
Local authorities should be advised if significant spillages  
cannot be contained.

Methods and materials for  
containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel,  
acid binder, universal binder, sawdust).  
Keep in suitable, closed containers for disposal.

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**SECTION 7. HANDLING AND STORAGE**

Advice on protection against  
fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : Do not breathe vapors/dust.  
Avoid exposure - obtain special instructions before use.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the ap-  
plication area.  
Dispose of rinse water in accordance with local and national

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regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.  
Electrical installations / working materials must comply with the technological safety standards.

Further information on storage conditions : See label, package insert or internal guidelines

Further information on storage stability : No decomposition if stored and applied as directed.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### **KAPA End-Repair Buffer (10X)**

##### **Ingredients with workplace control parameters**

Contains no substances with occupational exposure limit values.

#### **Kapa A-Tailing Buffer (10X)**

##### **Ingredients with workplace control parameters**

Contains no substances with occupational exposure limit values.

#### **Kapa Ligation Buffer (5X)**

##### **Ingredients with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-	25322-68-3	TWA (aerosol)	10 mg/m <sup>3</sup>	US WEEL

#### **KAPA PEG/NaCl**

##### **Ingredients with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-	25322-68-3	TWA (aerosol)	10 mg/m <sup>3</sup>	US WEEL

#### **KAPA End Repair Enzyme Mix**

##### **Ingredients with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
glycerol	56-81-5	TWA (mist, respirable fraction)	5 mg/m <sup>3</sup>	OSHA Z-1
		TWA (mist, total dust)	15 mg/m <sup>3</sup>	OSHA Z-1

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		TWA (Mist - total dust)	10 mg/m3	OSHA P0
		TWA (Mist - respirable fraction)	5 mg/m3	OSHA P0

**KAPA HiFi HotStart ReadyMix (2X)**
**Ingredients with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
glycerol	56-81-5	TWA (mist, respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (mist, total dust)	15 mg/m3	OSHA Z-1
		TWA (Mist - total dust)	10 mg/m3	OSHA P0
		TWA (Mist - respirable fraction)	5 mg/m3	OSHA P0
DNA-dependent DNA polymerase	9012-90-2	IOEL	0.00006 mg/m3	Roche Industrial Hygiene Committee (RIHC)

**KAPA Library Amplification Primer Premixes (10X)**
**Ingredients with workplace control parameters**

Contains no substances with occupational exposure limit values.

**KAPA Hyper Prep DNA Ligase**
**Ingredients with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
glycerol	56-81-5	TWA (mist, respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (mist, total dust)	15 mg/m3	OSHA Z-1
		TWA (Mist - total dust)	10 mg/m3	OSHA P0
		TWA (Mist - respirable fraction)	5 mg/m3	OSHA P0
Polynucleotide 5'-hydroxyl kinase	37211-65-7	IOEL	0.00006 mg/m3	Roche Industrial Hygiene Committee (RIHC)

**KAPA A-Tailing Enzyme**

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## Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
glycerol	56-81-5	TWA (mist, respirable fraction)	5 mg/m <sup>3</sup>	OSHA Z-1
		TWA (mist, total dust)	15 mg/m <sup>3</sup>	OSHA Z-1
		TWA (Mist - total dust)	10 mg/m <sup>3</sup>	OSHA P0
		TWA (Mist - respirable fraction)	5 mg/m <sup>3</sup>	OSHA P0
DNA-dependent DNA polymerase	9012-90-2	IOEL	0.00006 mg/m <sup>3</sup>	Roche Industrial Hygiene Committee (RIHC)

**Engineering measures** : No data available**Personal protective equipment**

Respiratory protection : In the case of vapor formation use a respirator with an approved filter.

## Hand protection

In case of contact through splashing:

Material : Nitrile rubber  
 Break through time : > 30 min  
 Glove thickness : > 0.11 mm

In case of full contact:

Material : butyl-rubber  
 Break through time : > 480 min  
 Glove thickness : > 0.4 mm

Remarks : Wear appropriate protective gloves to prevent skin contact.  
 Replace torn or punctured gloves promptly.

Eye protection : Eye wash bottle with pure water  
 Tightly fitting safety goggles  
 Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Impervious clothing  
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.  
 When using do not smoke.  
 Wash hands before breaks and at the end of workday.



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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES*****KAPA End-Repair Buffer (10X)***

Appearance	: liquid
Color	: colorless
Odor	: odorless
Odor Threshold	: No data available
pH	: 7.5
Melting point/range	: No data available
Boiling point/boiling range	: No data available
Flash point	: does not flash
Evaporation rate	: No data available
Flammability (liquids)	: Does not sustain combustion. The product is not flammable.
Self-ignition	: Not applicable
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapor pressure	: No data available
Relative vapor density	: No data available
Relative density	: No data available
Density	: 1.04 g/cm <sup>3</sup>
Solubility(ies)	
Water solubility	: completely miscible
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available

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Decomposition temperature : No data available

Viscosity  
Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : The substance or mixture is not classified as oxidizing.

***Kapa A-Tailing Buffer (10X)***

Appearance : liquid

Color : colorless

Odor : odorless

Odor Threshold : No data available

pH : 8.0

Melting point/range : No data available

Boiling point/boiling range : No data available

Flash point : does not flash

Evaporation rate : No data available

Flammability (liquids) : Does not sustain combustion.  
The product is not flammable.

Self-ignition : Not applicable

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : No data available

Density : 1.040 g/cm<sup>3</sup>

Solubility(ies)  
Water solubility : completely miscible

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Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

***Kapa Ligation Buffer (5X)***

Appearance	:	liquid
Color	:	colorless
Odor	:	odorless
Odor Threshold	:	No data available
pH	:	7.6
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	does not flash
Evaporation rate	:	No data available
Flammability (liquids)	:	Does not sustain combustion. The product is not flammable.
Self-ignition	:	Not applicable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available

# SAFETY DATA SHEET



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Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	No data available
Density	:	1.040 g/cm <sup>3</sup>
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

### ***KAPA PEG/NaCl***

Appearance	:	liquid
Color	:	colorless
Odor	:	odorless
Odor Threshold	:	No data available
pH	:	8.1
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	does not flash
Evaporation rate	:	No data available

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Flammability (liquids)	:	Does not sustain combustion.  The product is not flammable.
Self-ignition	:	Not applicable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	No data available
Density	:	1.120 g/cm <sup>3</sup>
Solubility(ies)		
Water solubility	:	completely miscible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

### ***KAPA End Repair Enzyme Mix***

Appearance	:	liquid
Color	:	colorless
Odor	:	odorless
Odor Threshold	:	No data available

# SAFETY DATA SHEET



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pH	:	6.0
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	does not flash
Evaporation rate	:	No data available
Flammability (liquids)	:	Does not sustain combustion. The product is not flammable.
Self-ignition	:	Not applicable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	No data available
Density	:	1.148 g/cm <sup>3</sup>
Solubility(ies)		
Water solubility	:	completely miscible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

## KAPA HiFi HotStart ReadyMix (2X)

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Appearance	: liquid
Color	: colorless
Odor	: odorless
Odor Threshold	: No data available
pH	: 8.7
Melting point/range	: No data available
Boiling point/boiling range	: No data available
Flash point	: does not flash
Evaporation rate	: No data available
Flammability (solid, gas)	: Does not sustain combustion.
Flammability (liquids)	: Does not sustain combustion.
Self-ignition	: Not applicable
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapor pressure	: No data available
Relative vapor density	: No data available
Relative density	: No data available
Density	: 1.044 g/cm <sup>3</sup>
Solubility(ies)	
Water solubility	: completely miscible
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: No data available

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Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

***KAPA Library Amplification Primer Premixes (10X)***

Appearance : liquid

Color : colorless

Odor : odorless

Odor Threshold : No data available

pH : 7.7

Melting point/range : No data available

Boiling point/boiling range : ca. 212 °F / 100 °C

Flash point : does not flash

Evaporation rate : No data available

Flammability (solid, gas) : Does not sustain combustion.

Flammability (liquids) : Does not sustain combustion.

Self-ignition : Not applicable

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : No data available

Density : 0.996 g/cm<sup>3</sup>

Solubility(ies)  
Water solubility : completely miscible



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Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

***KAPA Hyper Prep DNA Ligase***

Appearance	:	liquid
Color	:	colorless
Odor	:	odorless
Odor Threshold	:	No data available
pH	:	6.5
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	does not flash
Evaporation rate	:	No data available
Flammability (liquids)	:	Does not sustain combustion. The product is not flammable.
Self-ignition	:	Not applicable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available

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Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	No data available
Density	:	1.148 g/cm <sup>3</sup>
Solubility(ies)		
Water solubility	:	completely miscible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

***KAPA A-Tailing Enzyme***

Appearance	:	liquid
Color	:	colorless
Odor	:	odorless
Odor Threshold	:	No data available
pH	:	6.0
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	does not flash
Evaporation rate	:	No data available
Flammability (liquids)	:	Does not sustain combustion.

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	The product is not flammable.
Self-ignition	: Not applicable
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapor pressure	: No data available
Relative vapor density	: No data available
Relative density	: No data available
Density	: 1.148 g/cm <sup>3</sup>
Solubility(ies)	
Water solubility	: completely miscible
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Explosive properties	: Not explosive
Oxidizing properties	: The substance or mixture is not classified as oxidizing.

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**SECTION 10. STABILITY AND REACTIVITY**

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use. No decomposition if stored and applied as directed.
Incompatible materials	: Strong oxidizing agents
Hazardous decomposition products	: No decomposition if stored and applied as directed.

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03-25-2022Date of last issue: 10-11-2021  
Date of first issue: 05-18-2016**SECTION 11. TOXICOLOGICAL INFORMATION*****KAPA End-Repair Buffer (10X)*****Acute toxicity**

Not classified based on available information.

**Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg  
Method: OECD Test Guideline 425  
GLP: yes

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes

**2,3-Butanediol, 1,4-dimercapto-, (2R,3R)-rel-:**

Acute oral toxicity : LD50 (Rat, female): > 300 - < 2,000 mg/kg  
Method: OECD Test Guideline 423  
GLP: yes

Acute toxicity (other routes of administration) : Symptoms: May cause cardiac arrhythmia., Convulsions, Vomiting

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Species : Rabbit  
Exposure time : 4 h  
Method : OECD Test Guideline 404  
Result : No skin irritation  
GLP : yes

**2,3-Butanediol, 1,4-dimercapto-, (2R,3R)-rel-:**

Species : human keratinocytes  
Exposure time : 4 h  
Method : OECD Test Guideline 431  
Result : Irritating to skin.  
GLP : yes

Species : reconstructed human epidermis (RhE)  
Exposure time : 60 min  
Method : OECD Test Guideline 439  
Result : Irritating to skin.  
GLP : yes

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Causes serious eye irritation.

**Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Species	: Rabbit
Result	: No eye irritation
Exposure time	: 72 h
Method	: OECD Test Guideline 405
GLP	: yes

**2,3-Butanediol, 1,4-dimercapto-, (2R,3R)-rel-:**

Species	: Chicken eye
Result	: Risk of serious damage to eyes.
Exposure time	: 10 s
Method	: OECD Test Guideline 438
GLP	: yes

Species	: Human
Result	: Risk of serious damage to eyes.
Exposure time	: 6 h
Method	: OECD Test Guideline 492
GLP	: yes

**Respiratory or skin sensitization****Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Test Type	: Direct Peptide Reactivity Assay (DPRA)
Assessment	: Does not cause skin sensitization.
GLP	: yes
Remarks	: Based on data from similar materials Expert judgment

Test Type	: Buehler Test
Species	: Guinea pig
Method	: OECD Test Guideline 406
GLP	: no
Remarks	: Based on data from similar materials

Test Type	: Intracutaneous test
Species	: Guinea pig
GLP	: no
Remarks	: Based on data from similar materials

**2,3-Butanediol, 1,4-dimercapto-, (2R,3R)-rel-:**

Test Type	: Local lymph node assay (LLNA)
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Species : Mouse  
Assessment : Does not cause skin sensitization.  
Method : OECD Test Guideline 429  
GLP : yes

**Germ cell mutagenicity**

Not classified based on available information.

**Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster lung cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative  
GLP: yes

Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
GLP: yes

Test Type: Microbial mutagenesis assay (Ames test)  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
GLP: yes  
Remarks: Based on data from similar materials

**2,3-Butanediol, 1,4-dimercapto-, (2R,3R)-rel-:**

Genotoxicity in vitro : Test Type: Microbial mutagenesis assay (Ames test)  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)  
Result: negative  
GLP: yes

Test Type: Microbial mutagenesis assay (Ames test)  
Test system: Escherichia coli  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
GLP: yes

**Carcinogenicity**

Not classified based on available information.

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

Not classified based on available information.

**Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Effects on fertility : Test Type: reproductive and developmental toxicity study  
Species: Rat, male and female  
Application Route: Oral  
Dose: 100, 300, 1000 mg/kg bw/day  
General Toxicity Parent: NOAEL: > 1,000 mg/kg body weight  
General Toxicity F1: NOAEL: > 1,000 mg/kg body weight  
Method: OECD Test Guideline 421  
Result: Animal testing did not show any effects on fertility.  
GLP: yes

Effects on fetal development : Test Type: Pre-natal  
Species: Rat, female  
Strain: wistar  
Application Route: Oral  
Dose: 100, 300, 1000 mg/kg bw/day  
General Toxicity Maternal: NOAEL: > 1,000 mg/kg body weight  
Developmental Toxicity: NOAEL: 1,000 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No effects on fetal development.  
GLP: yes  
Remarks: Based on data from similar materials

**STOT-single exposure**

Not classified based on available information.

**STOT-repeated exposure**

Not classified based on available information.

**Repeated dose toxicity****Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Species : Rat, male and female  
NOAEL : 250 mg/kg  
LOAEL : 1,000 mg/kg  
Application Route : Oral  
Exposure time : 90 d  
Number of exposures : daily  
Dose : 62.5, 250, 1000 mg/kg bw  
Method : OECD Test Guideline 408  
GLP : yes  
Remarks : Based on data from similar materials

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**Aspiration toxicity**

Not classified based on available information.

***Kapa A-Tailing Buffer (10X)*****Acute toxicity**

Not classified based on available information.

**Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg  
Method: OECD Test Guideline 425  
GLP: yes

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Species : Rabbit  
Exposure time : 4 h  
Method : OECD Test Guideline 404  
Result : No skin irritation  
GLP : yes

**Serious eye damage/eye irritation**

Not classified based on available information.

**Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Species : Rabbit  
Result : No eye irritation  
Exposure time : 72 h  
Method : OECD Test Guideline 405  
GLP : yes

**Respiratory or skin sensitization****Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.



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### Components:

#### **1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Test Type : Direct Peptide Reactivity Assay (DPRA)  
Assessment : Does not cause skin sensitization.  
GLP : yes  
Remarks : Based on data from similar materials  
Expert judgment

Test Type : Buehler Test  
Species : Guinea pig  
Method : OECD Test Guideline 406  
GLP : no  
Remarks : Based on data from similar materials

Test Type : Intracutaneous test  
Species : Guinea pig  
GLP : no  
Remarks : Based on data from similar materials

### **Germ cell mutagenicity**

Not classified based on available information.

### Components:

#### **1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster lung cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative  
GLP: yes

Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
GLP: yes

Test Type: Microbial mutagenesis assay (Ames test)  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
GLP: yes  
Remarks: Based on data from similar materials

### **Carcinogenicity**

Not classified based on available information.

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

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**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

Not classified based on available information.

**Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Effects on fertility : Test Type: reproductive and developmental toxicity study  
Species: Rat, male and female  
Application Route: Oral  
Dose: 100, 300, 1000 mg/kg bw/day  
General Toxicity Parent: NOAEL: > 1,000 mg/kg body weight  
General Toxicity F1: NOAEL: > 1,000 mg/kg body weight  
Method: OECD Test Guideline 421  
Result: Animal testing did not show any effects on fertility.  
GLP: yes

Effects on fetal development : Test Type: Pre-natal  
Species: Rat, female  
Strain: wistar  
Application Route: Oral  
Dose: 100, 300, 1000 mg/kg bw/day  
General Toxicity Maternal: NOAEL: > 1,000 mg/kg body weight  
Developmental Toxicity: NOAEL: 1,000 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No effects on fetal development.  
GLP: yes  
Remarks: Based on data from similar materials

**STOT-single exposure**

Not classified based on available information.

**STOT-repeated exposure**

Not classified based on available information.

**Repeated dose toxicity****Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Species : Rat, male and female  
NOAEL : 250 mg/kg  
LOAEL : 1,000 mg/kg  
Application Route : Oral  
Exposure time : 90 d  
Number of exposures : daily  
Dose : 62.5, 250, 1000 mg/kg bw  
Method : OECD Test Guideline 408  
GLP : yes  
Remarks : Based on data from similar materials

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**Aspiration toxicity**

Not classified based on available information.

**Kapa Ligation Buffer (5X)****Acute toxicity**

Not classified based on available information.

**Components:****Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:**

Acute oral toxicity : LD50 Oral (Rat): 28,000 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: 5.1 mg/l  
Test atmosphere: dust/mist  
Method: Expert judgment

Acute dermal toxicity : LD50 Dermal (Rabbit): 20,000 mg/kg

**1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg  
Method: OECD Test Guideline 425  
GLP: yes

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Species : Rabbit  
Exposure time : 4 h  
Method : OECD Test Guideline 404  
Result : No skin irritation  
GLP : yes

**Serious eye damage/eye irritation**

Not classified based on available information.

**Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Species : Rabbit  
Result : No eye irritation  
Exposure time : 72 h  
Method : OECD Test Guideline 405  
GLP : yes

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Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Test Type : Direct Peptide Reactivity Assay (DPRA)  
Assessment : Does not cause skin sensitization.  
GLP : yes  
Remarks : Based on data from similar materials  
Expert judgment

Test Type : Buehler Test  
Species : Guinea pig  
Method : OECD Test Guideline 406  
GLP : no  
Remarks : Based on data from similar materials

Test Type : Intracutaneous test  
Species : Guinea pig  
GLP : no  
Remarks : Based on data from similar materials

**Germ cell mutagenicity**

Not classified based on available information.

**Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster lung cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative  
GLP: yes

Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
GLP: yes

Test Type: Microbial mutagenesis assay (Ames test)  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
GLP: yes  
Remarks: Based on data from similar materials

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**Carcinogenicity**

Not classified based on available information.

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

Not classified based on available information.

**Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Effects on fertility : Test Type: reproductive and developmental toxicity study  
Species: Rat, male and female  
Application Route: Oral  
Dose: 100, 300, 1000 mg/kg bw/day  
General Toxicity Parent: NOAEL: > 1,000 mg/kg body weight  
General Toxicity F1: NOAEL: > 1,000 mg/kg body weight  
Method: OECD Test Guideline 421  
Result: Animal testing did not show any effects on fertility.  
GLP: yes

Effects on fetal development : Test Type: Pre-natal  
Species: Rat, female  
Strain: wistar  
Application Route: Oral  
Dose: 100, 300, 1000 mg/kg bw/day  
General Toxicity Maternal: NOAEL: > 1,000 mg/kg body weight  
Developmental Toxicity: NOAEL: 1,000 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No effects on fetal development.  
GLP: yes  
Remarks: Based on data from similar materials

**STOT-single exposure**

Not classified based on available information.

**STOT-repeated exposure**

Not classified based on available information.

**Repeated dose toxicity****Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Species : Rat, male and female  
NOAEL : 250 mg/kg  
LOAEL : 1,000 mg/kg  
Application Route : Oral

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Exposure time : 90 d  
Number of exposures : daily  
Dose : 62.5, 250, 1000 mg/kg bw  
Method : OECD Test Guideline 408  
GLP : yes  
Remarks : Based on data from similar materials

**Aspiration toxicity**

Not classified based on available information.

**KAPA PEG/NaCl****Acute toxicity**

Not classified based on available information.

**Components:****Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-hydroxy-:**

Acute oral toxicity : LD50 Oral (Rat): > 50,000 mg/kg  
Acute inhalation toxicity : Acute toxicity estimate: > 30 mg/l  
Test atmosphere: dust/mist  
Method: Expert judgment  
Acute dermal toxicity : LD50 Dermal (Rabbit): > 20,000 mg/kg

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-hydroxy-:**

Remarks : This information is not available.

**Serious eye damage/eye irritation**

Not classified based on available information.

**Components:****Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-hydroxy-:**

Remarks : This information is not available.

**Respiratory or skin sensitization****Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Germ cell mutagenicity**

Not classified based on available information.

**Carcinogenicity**

Not classified based on available information.

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- IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
- NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

Not classified based on available information.

**STOT-single exposure**

Not classified based on available information.

**Components:****Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-hydroxy-:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

**STOT-repeated exposure**

Not classified based on available information.

**Components:****Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-hydroxy-:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Aspiration toxicity**

Not classified based on available information.

**Components:****Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-hydroxy-:**

No data available

**KAPA End Repair Enzyme Mix****Acute toxicity**

Not classified based on available information.

**Components:****glycerol:**

Acute oral toxicity : LC50 (Mouse): 11,500 mg/kg

Acute inhalation toxicity : LC50 (Rat, male): 275000 mg/m3  
Exposure time: 7 h  
Test atmosphere: vapor  
GLP: no  
Assessment: The component/mixture is minimally toxic after short term inhalation.

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Acute dermal toxicity : LD50 (Guinea pig, male and female): 56,750 mg/kg  
GLP: no

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****glycerol:**

Species : Rabbit  
Exposure time : 24 h  
Result : No skin irritation  
GLP : no

**Serious eye damage/eye irritation**

Not classified based on available information.

**Components:****glycerol:**

Species : Rabbit  
Result : No eye irritation  
Exposure time : 7 d  
GLP : no

**Respiratory or skin sensitization****Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Components:****glycerol:**

Assessment : Mild eye irritant, Mild respiratory irritant, No skin irritation

**Germ cell mutagenicity**

Not classified based on available information.

**Components:****glycerol:**

Genotoxicity in vitro : Test Type: Microbial mutagenesis assay (Ames test)  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Result: negative  
GLP: No information available.

Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476



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GLP: No information available.**Carcinogenicity**

Not classified based on available information.

**Components:****glycerol:**

Species	: Rat, male and female
Application Route	: Oral
Exposure time	: 2 Years
GLP	: No information available.
Remarks	: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

Not classified based on available information.

**Components:****glycerol:**

Effects on fertility	: Test Type: Two-generation study Species: Rat, male and female Application Route: Oral Dose: 2000 mg/kg bw/day Fertility: NOAEL: 2,000 mg/kg body weight GLP: no
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Effects on fetal development	: Species: Rabbit, female Application Route: Oral Dose: 11.8, 54.8, 254.5, 1180 mg/kg bw/day Duration of Single Treatment: 29 d Developmental Toxicity: NOAEL: 1,180 mg/kg bw/day GLP: no
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**STOT-single exposure**

Not classified based on available information.

**STOT-repeated exposure**

Not classified based on available information.

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Species : Rat, male and female  
NOAEL : 4580 mg/kg  
NOAEL : 4,580 mg/kg  
Application Route : Oral  
Exposure time : 90 d  
Number of exposures : daily  
Dose : 4580 - 25,800 mg/kg/day  
GLP : no

Species : Rat, male and female  
Application Route : Inhalation  
Test atmosphere : dust/mist  
Exposure time : 13 Weeks  
Number of exposures : 6 hours/day, 5 days/week  
Dose : 33, 165 and 660 mg/m<sup>3</sup>  
GLP : No information available.

Species : Rat  
NOAEL : 5040 mg/kg  
NOAEL : 5,040 mg/kg  
Application Route : dermal  
Exposure time : 45 Weeks  
Number of exposures : 8 hours/day, 5 days/week  
Dose : 0.5-4.0 ml/kg  
GLP : no

Repeated dose toxicity - : Mild eye irritant, Mild respiratory irritant, No skin irritation  
Assessment

**Aspiration toxicity**

Not classified based on available information.

***KAPA HiFi HotStart ReadyMix (2X)*****Acute toxicity**

Not classified based on available information.

**Components:****glycerol:**

Acute oral toxicity : LC50 (Mouse): 11,500 mg/kg

Acute inhalation toxicity : LC50 (Rat, male): 275000 mg/m<sup>3</sup>  
Exposure time: 7 h  
Test atmosphere: vapor  
GLP: no  
Assessment: The component/mixture is minimally toxic after short term inhalation.

Acute dermal toxicity : LD50 (Guinea pig, male and female): 56,750 mg/kg

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GLP: no

**1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg  
Method: OECD Test Guideline 425  
GLP: yes

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes

**Methanaminium, N,N,N-trimethyl-, chloride (1:1):**

Acute oral toxicity : LD50 Oral (Rat): 47 mg/kg  
Method: OECD Test Guideline 401  
GLP: no

Acute dermal toxicity : LD50 Dermal (Rabbit): > 200 - < 500 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****glycerol:**

Species : Rabbit  
Exposure time : 24 h  
Result : No skin irritation  
GLP : no

**1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Species : Rabbit  
Exposure time : 4 h  
Method : OECD Test Guideline 404  
Result : No skin irritation  
GLP : yes

**Methanaminium, N,N,N-trimethyl-, chloride (1:1):**

Result : Irritating to skin.

**Serious eye damage/eye irritation**

Not classified based on available information.

**Components:****glycerol:**

Species : Rabbit  
Result : No eye irritation  
Exposure time : 7 d  
GLP : no

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Species : Rabbit  
Result : No eye irritation  
Exposure time : 72 h  
Method : OECD Test Guideline 405  
GLP : yes

**Methanaminium, N,N,N-trimethyl-, chloride (1:1):**

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405

**Respiratory or skin sensitization****Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Components:****glycerol:**

Assessment : Mild eye irritant, Mild respiratory irritant, No skin irritation

**1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Test Type : Direct Peptide Reactivity Assay (DPRA)  
Assessment : Does not cause skin sensitization.  
GLP : yes  
Remarks : Based on data from similar materials  
Expert judgment

Test Type : Buehler Test  
Species : Guinea pig  
Method : OECD Test Guideline 406  
GLP : no  
Remarks : Based on data from similar materials

Test Type : Intracutaneous test  
Species : Guinea pig  
GLP : no  
Remarks : Based on data from similar materials

**Methanaminium, N,N,N-trimethyl-, chloride (1:1):**

Test Type : Local lymph node assay (LLNA)  
Species : Mouse  
Assessment : Does not cause skin sensitization.  
Method : OECD Test Guideline 429

**Germ cell mutagenicity**

Not classified based on available information.

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**Components:****glycerol:**

Genotoxicity in vitro : Test Type: Microbial mutagenesis assay (Ames test)  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Result: negative  
GLP: No information available.

Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
GLP: No information available.

**1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster lung cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative  
GLP: yes

Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
GLP: yes

Test Type: Microbial mutagenesis assay (Ames test)  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
GLP: yes  
Remarks: Based on data from similar materials

**Methanaminium, N,N,N-trimethyl-, chloride (1:1):**

Genotoxicity in vitro : Test Type: Microbial mutagenesis assay (Ames test)  
Test system: Salmonella typhimurium  
Result: negative

Test Type: Microbial mutagenesis assay (Ames test)  
Test system: Escherichia coli  
Result: negative

**Carcinogenicity**

Not classified based on available information.

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Species : Rat, male and female  
Application Route : Oral  
Exposure time : 2 Years  
GLP : No information available.  
Remarks : No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

Not classified based on available information.

**Components:****glycerol:**

Effects on fertility : Test Type: Two-generation study  
Species: Rat, male and female  
Application Route: Oral  
Dose: 2000 mg/kg bw/day  
Fertility: NOAEL: 2,000 mg/kg body weight  
GLP: no

Effects on fetal development : Species: Rabbit, female  
Application Route: Oral  
Dose: 11.8, 54.8, 254.5, 1180 mg/kg bw/day  
Duration of Single Treatment: 29 d  
Developmental Toxicity: NOAEL: 1,180 mg/kg bw/day  
GLP: no

**1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Effects on fertility : Test Type: reproductive and developmental toxicity study  
Species: Rat, male and female  
Application Route: Oral  
Dose: 100, 300, 1000 mg/kg bw/day  
General Toxicity Parent: NOAEL: > 1,000 mg/kg body weight  
General Toxicity F1: NOAEL: > 1,000 mg/kg body weight  
Method: OECD Test Guideline 421  
Result: Animal testing did not show any effects on fertility.  
GLP: yes

Effects on fetal development : Test Type: Pre-natal  
Species: Rat, female  
Strain: wistar  
Application Route: Oral

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Dose: 100, 300, 1000 mg/kg bw/day  
General Toxicity Maternal: NOAEL: > 1,000 mg/kg body weight  
Developmental Toxicity: NOAEL: 1,000 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No effects on fetal development.  
GLP: yes  
Remarks: Based on data from similar materials

**STOT-single exposure**

Causes damage to organs.

**Components:****Methanaminium, N,N,N-trimethyl-, chloride (1:1):**

Routes of exposure : Ingestion  
Target Organs : Central nervous system  
Assessment : Causes damage to organs.

**DNA-dependent DNA polymerase:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

**STOT-repeated exposure**

Not classified based on available information.

**Components:****DNA-dependent DNA polymerase:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Repeated dose toxicity****Components:****glycerol:**

Species : Rat, male and female  
NOAEL : 4580 mg/kg  
NOAEL : 4,580 mg/kg  
Application Route : Oral  
Exposure time : 90 d  
Number of exposures : daily  
Dose : 4580 - 25,800 mg/kg/day  
GLP : no

Species : Rat, male and female  
Application Route : Inhalation  
Test atmosphere : dust/mist  
Exposure time : 13 Weeks  
Number of exposures : 6 hours/day, 5 days/week  
Dose : 33, 165 and 660 mg/m3  
GLP : No information available.

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Species : Rat  
NOAEL : 5040 mg/kg  
NOAEL : 5,040 mg/kg  
Application Route : dermal  
Exposure time : 45 Weeks  
Number of exposures : 8 hours/day, 5 days/week  
Dose : 0.5-4.0 ml/kg  
GLP : no

Repeated dose toxicity - : Mild eye irritant, Mild respiratory irritant, No skin irritation  
Assessment

**1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Species : Rat, male and female  
NOAEL : 250 mg/kg  
LOAEL : 1,000 mg/kg  
Application Route : Oral  
Exposure time : 90 d  
Number of exposures : daily  
Dose : 62.5, 250, 1000 mg/kg bw  
Method : OECD Test Guideline 408  
GLP : yes  
Remarks : Based on data from similar materials

**Methanaminium, N,N,N-trimethyl-, chloride (1:1):**

Species : Rat  
NOAEL : 5 mg/kg  
Application Route : Oral  
Method : OECD Test Guideline 421  
GLP : yes

**Aspiration toxicity**

Not classified based on available information.

**Components:****DNA-dependent DNA polymerase:**

No data available

**Further information****Components:****Methanaminium, N,N,N-trimethyl-, chloride (1:1):**

Remarks : Other dangerous properties can not be excluded.

***KAPA Library Amplification Primer Premixes (10X)*****Acute toxicity**

Not classified based on available information.



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**Skin corrosion/irritation**

Not classified based on available information.

**Serious eye damage/eye irritation**

Not classified based on available information.

**Respiratory or skin sensitization****Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Germ cell mutagenicity**

Not classified based on available information.

**Carcinogenicity**

Not classified based on available information.

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

Not classified based on available information.

**STOT-single exposure**

Not classified based on available information.

**STOT-repeated exposure**

Not classified based on available information.

**Aspiration toxicity**

Not classified based on available information.

**KAPA Hyper Prep DNA Ligase****Acute toxicity**

Not classified based on available information.

**Components:****glycerol:**

Acute oral toxicity : LC50 (Mouse): 11,500 mg/kg

Acute inhalation toxicity : LC50 (Rat, male): 275000 mg/m3

Exposure time: 7 h

Test atmosphere: vapor

GLP: no

Assessment: The component/mixture is minimally toxic after short term inhalation.

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Acute dermal toxicity : LD50 (Guinea pig, male and female): 56,750 mg/kg  
GLP: no

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****glycerol:**

Species : Rabbit  
Exposure time : 24 h  
Result : No skin irritation  
GLP : no

**Serious eye damage/eye irritation**

Not classified based on available information.

**Components:****glycerol:**

Species : Rabbit  
Result : No eye irritation  
Exposure time : 7 d  
GLP : no

**Respiratory or skin sensitization****Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Components:****glycerol:**

Assessment : Mild eye irritant, Mild respiratory irritant, No skin irritation

**Germ cell mutagenicity**

Not classified based on available information.

**Components:****glycerol:**

Genotoxicity in vitro : Test Type: Microbial mutagenesis assay (Ames test)  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Result: negative  
GLP: No information available.

Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative

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GLP: No information available.

**Carcinogenicity**

Not classified based on available information.

**Components:****glycerol:**

Species	: Rat, male and female
Application Route	: Oral
Exposure time	: 2 Years
GLP	: No information available.
Remarks	: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Polynucleotide 5'-hydroxyl kinase:**

Remarks	: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
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<b>IARC</b>	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
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<b>OSHA</b>	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
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<b>NTP</b>	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
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**Reproductive toxicity**

Not classified based on available information.

**Components:****glycerol:**

Effects on fertility	: Test Type: Two-generation study Species: Rat, male and female Application Route: Oral Dose: 2000 mg/kg bw/day Fertility: NOAEL: 2,000 mg/kg body weight GLP: no
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Effects on fetal development	: Species: Rabbit, female Application Route: Oral Dose: 11.8, 54.8, 254.5, 1180 mg/kg bw/day Duration of Single Treatment: 29 d Developmental Toxicity: NOAEL: 1,180 mg/kg bw/day GLP: no
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**STOT-single exposure**

Not classified based on available information.

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Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

**STOT-repeated exposure**

Not classified based on available information.

**Components:****Polynucleotide 5'-hydroxyl kinase:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Repeated dose toxicity****Components:****glycerol:**

Species : Rat, male and female  
NOAEL : 4580 mg/kg  
NOAEL : 4,580 mg/kg  
Application Route : Oral  
Exposure time : 90 d  
Number of exposures : daily  
Dose : 4580 - 25,800 mg/kg/day  
GLP : no

Species : Rat, male and female  
Application Route : Inhalation  
Test atmosphere : dust/mist  
Exposure time : 13 Weeks  
Number of exposures : 6 hours/day, 5 days/week  
Dose : 33, 165 and 660 mg/m<sup>3</sup>  
GLP : No information available.

Species : Rat  
NOAEL : 5040 mg/kg  
NOAEL : 5,040 mg/kg  
Application Route : dermal  
Exposure time : 45 Weeks  
Number of exposures : 8 hours/day, 5 days/week  
Dose : 0.5-4.0 ml/kg  
GLP : no

Repeated dose toxicity - Assessment : Mild eye irritant, Mild respiratory irritant, No skin irritation

**Aspiration toxicity**

Not classified based on available information.

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**Components:****Polynucleotide 5'-hydroxyl kinase:**

No data available

***KAPA A-Tailing Enzyme*****Acute toxicity**

Not classified based on available information.

**Components:****glycerol:**

Acute oral toxicity : LC50 (Mouse): 11,500 mg/kg

Acute inhalation toxicity : LC50 (Rat, male): 275000 mg/m3  
Exposure time: 7 h  
Test atmosphere: vapor  
GLP: no  
Assessment: The component/mixture is minimally toxic after short term inhalation.

Acute dermal toxicity : LD50 (Guinea pig, male and female): 56,750 mg/kg  
GLP: no

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****glycerol:**

Species : Rabbit  
Exposure time : 24 h  
Result : No skin irritation  
GLP : no

**Serious eye damage/eye irritation**

Not classified based on available information.

**Components:****glycerol:**

Species : Rabbit  
Result : No eye irritation  
Exposure time : 7 d  
GLP : no

**Respiratory or skin sensitization****Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

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Assessment : Mild eye irritant, Mild respiratory irritant, No skin irritation

**Germ cell mutagenicity**

Not classified based on available information.

**Components:****glycerol:**

Genotoxicity in vitro : Test Type: Microbial mutagenesis assay (Ames test)  
Test system: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Result: negative  
GLP: No information available.

Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
GLP: No information available.

**Carcinogenicity**

Not classified based on available information.

**Components:****glycerol:**

Species : Rat, male and female  
Application Route : Oral  
Exposure time : 2 Years  
GLP : No information available.  
Remarks : No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

Not classified based on available information.

**Components:****glycerol:**

Effects on fertility : Test Type: Two-generation study  
Species: Rat, male and female

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Application Route: Oral  
Dose: 2000 mg/kg bw/day  
Fertility: NOAEL: 2,000 mg/kg body weight  
GLP: no

Effects on fetal development : Species: Rabbit, female  
Application Route: Oral  
Dose: 11.8, 54.8, 254.5, 1180 mg/kg bw/day  
Duration of Single Treatment: 29 d  
Developmental Toxicity: NOAEL: 1,180 mg/kg bw/day  
GLP: no

**STOT-single exposure**

Not classified based on available information.

**Components:****DNA-dependent DNA polymerase:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

**STOT-repeated exposure**

Not classified based on available information.

**Components:****DNA-dependent DNA polymerase:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Repeated dose toxicity****Components:****glycerol:**

Species : Rat, male and female  
NOAEL : 4580 mg/kg  
NOAEL : 4,580 mg/kg  
Application Route : Oral  
Exposure time : 90 d  
Number of exposures : daily  
Dose : 4580 - 25,800 mg/kg/day  
GLP : no

Species : Rat, male and female  
Application Route : Inhalation  
Test atmosphere : dust/mist  
Exposure time : 13 Weeks  
Number of exposures : 6 hours/day, 5 days/week  
Dose : 33, 165 and 660 mg/m<sup>3</sup>  
GLP : No information available.

Species : Rat  
NOAEL : 5040 mg/kg  
NOAEL : 5,040 mg/kg

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Application Route : dermal  
Exposure time : 45 Weeks  
Number of exposures : 8 hours/day, 5 days/week  
Dose : 0.5-4.0 ml/kg  
GLP : no

Repeated dose toxicity - Assessment : Mild eye irritant, Mild respiratory irritant, No skin irritation

**Aspiration toxicity**

Not classified based on available information.

**Components:****DNA-dependent DNA polymerase:**

No data available

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**SECTION 12. ECOLOGICAL INFORMATION*****KAPA End-Repair Buffer (10X)*****Ecotoxicity****Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Toxicity to fish : LC50 (Fish): > 4,000 mg/l  
Exposure time: 96 h  
Test Type: static test  
Analytical monitoring: no  
Method: DIN 38412  
GLP: no

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 980 mg/l  
End point: Immobilization  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 473 mg/l  
End point: Growth rate  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: no  
Method: OECD Test Guideline 201  
GLP: No information available.

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l  
End point: Respiration inhibition  
Exposure time: 3 h  
Test Type: static test



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Method: OECD Test Guideline 209  
GLP: yes**Ecotoxicology Assessment**

Toxicity Data on Soil : Not expected to adsorb on soil.

Other organisms relevant to  
the environment : No data available**2,3-Butanediol, 1,4-dimercapto-, (2R,3R)-rel-:**Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 34.8 mg/l  
aquatic invertebrates  
End point: Immobilization  
Exposure time: 48 h  
Test Type: semi-static test  
Method: OECD Test Guideline 202  
GLP: yes  
Remarks: nominal concentrationNOEC (Daphnia magna (Water flea)): 25.0 mg/l  
End point: Immobilization  
Exposure time: 48 h  
Test Type: semi-static test  
Method: OECD Test Guideline 202  
GLP: yes  
Remarks: nominal concentrationToxicity to algae/aquatic : ErC50 (Raphidocelis subcapitata (freshwater green alga)):  
plants  
24.3 mg/l  
End point: Growth rate  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes  
Remarks: nominal concentrationNOErC (Raphidocelis subcapitata (freshwater green alga)):  
3.2 mg/l  
End point: Growth rate  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes  
Remarks: nominal concentrationNOEyC (Raphidocelis subcapitata (freshwater green alga)):  
1.0 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
GLP: yes  
Remarks: nominal concentration

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Biodegradability : aerobic  
Inoculum: activated sludge  
Result: Readily biodegradable.  
Biodegradation: 100 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
GLP: yes

**2,3-Butanediol, 1,4-dimercapto-, (2R,3R)-rel-:**

Biodegradability : aerobic  
Inoculum: activated sludge, non-adapted  
Concentration: 64.3 mg/l  
Result: Not readily biodegradable.  
Biodegradation: 53 %  
Exposure time: 43 d  
Method: OECD Test Guideline 301B  
GLP: yes  
Remarks: The 10 day time window criterion is not fulfilled.

Physico-chemical removability : Method: see user defined free text  
Remarks: Not abiotically degradable

**Bioaccumulative potential****Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Bioaccumulation : Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

Partition coefficient: n-octanol/water : log Pow: -2.31 (68 °F / 20 °C)  
Method: OECD Test Guideline 107  
GLP: no

**2,3-Butanediol, 1,4-dimercapto-, (2R,3R)-rel-:**

Partition coefficient: n-octanol/water : log Pow: 0.07 (77 °F / 25 °C)  
pH: 5.0  
Method: OECD Test Guideline 117  
GLP: yes

**Mobility in soil**

No data available

**Other adverse effects*****Kapa A-Tailing Buffer (10X)***

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- Toxicity to fish : LC50 (Fish): > 4,000 mg/l  
Exposure time: 96 h  
Test Type: static test  
Analytical monitoring: no  
Method: DIN 38412  
GLP: no
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 980 mg/l  
End point: Immobilization  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 202  
GLP: yes
- Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 473 mg/l  
End point: Growth rate  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: no  
Method: OECD Test Guideline 201  
GLP: No information available.
- Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l  
End point: Respiration inhibition  
Exposure time: 3 h  
Test Type: static test  
Analytical monitoring: no  
Method: OECD Test Guideline 209  
GLP: yes

**Ecotoxicology Assessment**

- Toxicity Data on Soil : Not expected to adsorb on soil.
- Other organisms relevant to the environment : No data available

**Persistence and degradability****Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

- Biodegradability : aerobic  
Inoculum: activated sludge  
Result: Readily biodegradable.  
Biodegradation: 100 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
GLP: yes

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Date of first issue: 05-18-2016**Bioaccumulative potential****Components:****1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Bioaccumulation : Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

Partition coefficient: n-octanol/water : log Pow: -2.31 (68 °F / 20 °C)  
Method: OECD Test Guideline 107  
GLP: no**Mobility in soil**

No data available

**Other adverse effects*****Kapa Ligation Buffer (5X)*****Ecotoxicity****Components:****Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:**Toxicity to fish : LC50 (Cyprinus carpio (Carp)): > 100 mg/l  
Exposure time: 4 d  
Method: OECD Test Guideline 203Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l  
Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : &gt; 1 mg/l

**Ecotoxicology Assessment**

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

Toxicity Data on Soil : Not expected to adsorb on soil.

Other organisms relevant to the environment : No data available

**1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**Toxicity to fish : LC50 (Fish): > 4,000 mg/l  
Exposure time: 96 h  
Test Type: static test

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Method: DIN 38412  
GLP: no

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 980 mg/l  
End point: Immobilization  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 473 mg/l  
End point: Growth rate  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: no  
Method: OECD Test Guideline 201  
GLP: No information available.

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l  
End point: Respiration inhibition  
Exposure time: 3 h  
Test Type: static test  
Analytical monitoring: no  
Method: OECD Test Guideline 209  
GLP: yes

**Ecotoxicology Assessment**

Toxicity Data on Soil : Not expected to adsorb on soil.

Other organisms relevant to the environment : No data available

**Persistence and degradability****Components:****Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:**

Biodegradability : Biodegradation: > 90 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301

**1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Biodegradability : aerobic  
Inoculum: activated sludge  
Result: Readily biodegradable.  
Biodegradation: 100 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
GLP: yes

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Date of first issue: 05-18-2016**Bioaccumulative potential****Components:****Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-hydroxy-:**Partition coefficient: n-  
octanol/water : Remarks: No data available**1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**Bioaccumulation : Remarks: Due to the distribution coefficient n-octanol/water,  
accumulation in organisms is not expected.Partition coefficient: n-  
octanol/water : log Pow: -2.31 (68 °F / 20 °C)  
Method: OECD Test Guideline 107  
GLP: no**Mobility in soil**

No data available

**Other adverse effects****Components:****Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-hydroxy-:**Adsorbed organic bound  
halogens (AOX) : Remarks: Not applicable***KAPA PEG/NaCl*****Ecotoxicity****Components:****Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-hydroxy-:**Toxicity to fish : LC50: > 100 mg/l  
Exposure time: 96 h**Ecotoxicology Assessment**

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

Toxicity Data on Soil : Not expected to adsorb on soil.

Other organisms relevant to  
the environment : No data available**Persistence and degradability**

No data available

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### Bioaccumulative potential

#### Components:

#### **Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-hydroxy-:**

Partition coefficient: n-octanol/water : Remarks: No data available

### Mobility in soil

No data available

### Other adverse effects

#### Components:

#### **Poly(oxy-1,2-ethanediyl), .alpha.-hydro.-omega.-hydroxy-:**

Adsorbed organic bound halogens (AOX) : Remarks: Not applicable

## KAPA End Repair Enzyme Mix

### Ecotoxicity

#### Components:

#### **glycerol:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 54,000 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: static test  
GLP: no

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 1,955 mg/l  
End point: mortality  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: no  
GLP: no

Toxicity to algae/aquatic plants : (Scenedesmus quadricauda (Green algae)): > 10,000 mg/l  
End point: Growth rate  
Exposure time: 8 d  
Test Type: static test  
GLP: no

Toxicity to microorganisms : EC50 (Pseudomonas putida): > 10,000 mg/l  
End point: Growth rate  
Exposure time: 16 h  
Test Type: static test  
GLP: No information available.

### Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

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Chronic aquatic toxicity : This product has no known ecotoxicological effects.

Toxicity Data on Soil : Not expected to adsorb on soil.

Other organisms relevant to the environment : No data available

**Persistence and degradability****Components:****glycerol:**

Biodegradability : aerobic  
Inoculum: activated sludge  
Concentration: 226 mg/l  
Result: Readily biodegradable.  
Biodegradation: 94 %  
Exposure time: 24 h  
GLP: no

**Bioaccumulative potential****Components:****glycerol:**

Partition coefficient: n-octanol/water : log Pow: -1.75 (77 °F / 25 °C)  
pH: 7.4  
Method: OECD Test Guideline 107  
GLP: no

**Mobility in soil**

No data available

**Other adverse effects*****KAPA HiFi HotStart ReadyMix (2X)*****Ecotoxicity****Components:****glycerol:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 54,000 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: static test  
GLP: no

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 1,955 mg/l  
End point: mortality  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: no  
GLP: no



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- Toxicity to algae/aquatic plants : (Scenedesmus quadricauda (Green algae)): > 10,000 mg/l  
End point: Growth rate  
Exposure time: 8 d  
Test Type: static test  
GLP: no
- Toxicity to microorganisms : EC50 (Pseudomonas putida): > 10,000 mg/l  
End point: Growth rate  
Exposure time: 16 h  
Test Type: static test  
GLP: No information available.

**Ecotoxicology Assessment**

- Acute aquatic toxicity : This product has no known ecotoxicological effects.
- Chronic aquatic toxicity : This product has no known ecotoxicological effects.
- Toxicity Data on Soil : Not expected to adsorb on soil.
- Other organisms relevant to the environment : No data available

**1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

- Toxicity to fish : LC50 (Fish): > 4,000 mg/l  
Exposure time: 96 h  
Test Type: static test  
Analytical monitoring: no  
Method: DIN 38412  
GLP: no
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 980 mg/l  
End point: Immobilization  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 202  
GLP: yes
- Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 473 mg/l  
End point: Growth rate  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: no  
Method: OECD Test Guideline 201  
GLP: No information available.
- Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l  
End point: Respiration inhibition  
Exposure time: 3 h  
Test Type: static test  
Analytical monitoring: no  
Method: OECD Test Guideline 209  
GLP: yes

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Toxicity Data on Soil : Not expected to adsorb on soil.

Other organisms relevant to  
the environment : No data available**Methanaminium, N,N,N-trimethyl-, chloride (1:1):**Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 462 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203Toxicity to daphnia and other  
aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.16 mg/l  
Exposure time: 11 d  
GLP: yesNOEC (Daphnia magna (Water flea)): 0.03 mg/l  
Exposure time: 11 d  
GLP: yesLC50 (Daphnia magna (Water flea)): 1.86 mg/l  
Exposure time: 48 h  
GLP: yesToxicity to algae/aquatic  
plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 115  
mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
GLP: yes**Ecotoxicology Assessment**

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Toxicity Data on Soil : Not expected to adsorb on soil.

Other organisms relevant to  
the environment : No data available**DNA-dependent DNA polymerase:****Ecotoxicology Assessment**

Toxicity Data on Soil : Not expected to adsorb on soil.

Other organisms relevant to  
the environment : No data available**Persistence and degradability****Components:****glycerol:**Biodegradability : aerobic  
Inoculum: activated sludge

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Concentration: 226 mg/l  
Result: Readily biodegradable.  
Biodegradation: 94 %  
Exposure time: 24 h  
GLP: no

**1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Biodegradability : aerobic  
Inoculum: activated sludge  
Result: Readily biodegradable.  
Biodegradation: 100 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
GLP: yes

**Methanaminium, N,N,N-trimethyl-, chloride (1:1):**

Biodegradability : Remarks: Expected to be biodegradable

**Bioaccumulative potential****Components:****glycerol:**

Partition coefficient: n- : log Pow: -1.75 (77 °F / 25 °C)  
octanol/water pH: 7.4  
Method: OECD Test Guideline 107  
GLP: no

**1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:**

Bioaccumulation : Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

Partition coefficient: n- : log Pow: -2.31 (68 °F / 20 °C)  
octanol/water Method: OECD Test Guideline 107  
GLP: no

**Methanaminium, N,N,N-trimethyl-, chloride (1:1):**

Partition coefficient: n- : Remarks: No data available  
octanol/water

**DNA-dependent DNA polymerase:**

Partition coefficient: n- : Remarks: No data available  
octanol/water

**Mobility in soil**

No data available

**Other adverse effects****KAPA Library Amplification Primer Premixes (10X)**

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**Ecotoxicity**

No data available

**Persistence and degradability**

No data available

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**Other adverse effects*****KAPA Hyper Prep DNA Ligase*****Ecotoxicity****Components:****glycerol:**

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 54,000 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: static test  
GLP: no
- Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 1,955 mg/l  
End point: mortality  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: no  
GLP: no
- Toxicity to algae/aquatic plants : (Scenedesmus quadricauda (Green algae)): > 10,000 mg/l  
End point: Growth rate  
Exposure time: 8 d  
Test Type: static test  
GLP: no
- Toxicity to microorganisms : EC50 (Pseudomonas putida): > 10,000 mg/l  
End point: Growth rate  
Exposure time: 16 h  
Test Type: static test  
GLP: No information available.

**Ecotoxicology Assessment**

- Acute aquatic toxicity : This product has no known ecotoxicological effects.
- Chronic aquatic toxicity : This product has no known ecotoxicological effects.
- Toxicity Data on Soil : Not expected to adsorb on soil.
- Other organisms relevant to the environment : No data available

**KAPA LTP Library Preparation Kit**Version  
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Toxicity Data on Soil : Not expected to adsorb on soil.

Other organisms relevant to the environment : No data available

**Persistence and degradability****Components:****glycerol:**Biodegradability : aerobic  
Inoculum: activated sludge  
Concentration: 226 mg/l  
Result: Readily biodegradable.  
Biodegradation: 94 %  
Exposure time: 24 h  
GLP: no**Bioaccumulative potential****Components:****glycerol:**Partition coefficient: n-octanol/water : log Pow: -1.75 (77 °F / 25 °C)  
pH: 7.4  
Method: OECD Test Guideline 107  
GLP: no**Polynucleotide 5'-hydroxyl kinase:**

Partition coefficient: n-octanol/water : Remarks: No data available

**Mobility in soil**

No data available

**Other adverse effects****KAPA A-Tailing Enzyme****Ecotoxicity****Components:****glycerol:**Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 54,000 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: static test  
GLP: no

Toxicity to daphnia and other : LC50 (Daphnia magna (Water flea)): 1,955 mg/l

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aquatic invertebrates		End point: mortality Exposure time: 48 h Test Type: static test Analytical monitoring: no GLP: no
Toxicity to algae/aquatic plants	:	(Scenedesmus quadricauda (Green algae)): > 10,000 mg/l End point: Growth rate Exposure time: 8 d Test Type: static test GLP: no
Toxicity to microorganisms	:	EC50 (Pseudomonas putida): > 10,000 mg/l End point: Growth rate Exposure time: 16 h Test Type: static test GLP: No information available.

**Ecotoxicology Assessment**

Acute aquatic toxicity	:	This product has no known ecotoxicological effects.
Chronic aquatic toxicity	:	This product has no known ecotoxicological effects.
Toxicity Data on Soil	:	Not expected to adsorb on soil.
Other organisms relevant to the environment	:	No data available

**DNA-dependent DNA polymerase:****Ecotoxicology Assessment**

Toxicity Data on Soil	:	Not expected to adsorb on soil.
Other organisms relevant to the environment	:	No data available

**Persistence and degradability****Components:****glycerol:**

Biodegradability	:	aerobic Inoculum: activated sludge Concentration: 226 mg/l Result: Readily biodegradable. Biodegradation: 94 % Exposure time: 24 h GLP: no
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**Bioaccumulative potential****Components:****glycerol:**

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Partition coefficient: n-octanol/water : log Pow: -1.75 (77 °F / 25 °C)  
pH: 7.4  
Method: OECD Test Guideline 107  
GLP: no

**DNA-dependent DNA polymerase:**

Partition coefficient: n-octanol/water : Remarks: No data available

**Mobility in soil**

No data available

**Other adverse effects**

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**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : Do not contaminate ponds, waterways or ditches with chemical or used container.  
Send to a licensed waste management company.  
Can be disposed as waste water, when in compliance with local regulations.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Empty containers should be taken to an approved waste handling site for recycling or disposal.  
Do not re-use empty containers.

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**SECTION 14. TRANSPORT INFORMATION****International Regulations****UNRTDG**

Not regulated as a dangerous good

**IATA-DGR**

Not regulated as a dangerous good

**IMDG-Code**

Not regulated as a dangerous good

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

**Domestic regulation****49 CFR**

Not regulated as a dangerous good

**Special precautions for user**

Remarks : Not dangerous goods in the meaning of ADR/RID, ADN, IMDG-Code, ICAO/IATA-DGR

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This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Serious eye damage or eye irritation

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

**US State Regulations****Massachusetts Right To Know**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know**

Water	7732-18-5
1,3-Propanediol, 2-amino-2-(hydroxymethyl)-	77-86-1

**Maine Chemicals of High Concern**

Product does not contain any listed chemicals

**Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

**Washington Chemicals of High Concern**

Product does not contain any listed chemicals

**The ingredients of this product are reported in the following inventories:**



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AIIC	: Not in compliance with the inventory
DSL	: This product contains the following components that are not on the Canadian DSL nor NDSL.  2'-Deoxyguanosine 5'-triphosphate trisodium salt  Adenosine 5'-(tetrahydrogen triphosphate), 2'-deoxy-  2'-Deoxycytidine 5'-triphosphate disodium salt  Thymidine 5'-(tetrahydrogen triphosphate), sodium salt  Adenosine 5'-triphosphate disodium salt hydrate
NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: Not in compliance with the inventory
ISHL	: Not in compliance with the inventory
KECI	: Not in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: Not in compliance with the inventory
TCSI	: Not in compliance with the inventory
TSCA	: Product contains substance(s) not listed on TSCA inventory.
TECI	: Not in compliance with the inventory

### TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

### *Kapa A-Tailing Buffer (10X)*

#### CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

#### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : No SARA Hazards

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**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

**US State Regulations****Massachusetts Right To Know**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know**

Water

7732-18-5

**Maine Chemicals of High Concern**

Product does not contain any listed chemicals

**Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

**Washington Chemicals of High Concern**

Product does not contain any listed chemicals

**The ingredients of this product are reported in the following inventories:**

AIIC : Not in compliance with the inventory

DSL : This product contains the following components that are not on the Canadian DSL nor NDSL.

Adenosine 5'-(tetrahydrogen triphosphate), 2'-deoxy-

NZIoC : On the inventory, or in compliance with the inventory

ENCS : Not in compliance with the inventory

ISHL : Not in compliance with the inventory

KECI : Not in compliance with the inventory

PICCS : Not in compliance with the inventory

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IECSC : Not in compliance with the inventory

TCSI : On the inventory, or in compliance with the inventory

TSCA : Product contains substance(s) not listed on TSCA inventory.

TECI : Not in compliance with the inventory

**TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

**Kapa Ligation Buffer (5X)****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : No SARA Hazards

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-	25322-68-3	>= 30 - < 50 %
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**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

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No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know**

Water	7732-18-5
Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-	25322-68-3
1,3-Propanediol, 2-amino-2-(hydroxymethyl)-	77-86-1

**Maine Chemicals of High Concern**

Product does not contain any listed chemicals

**Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

**Washington Chemicals of High Concern**

Product does not contain any listed chemicals

**The ingredients of this product are reported in the following inventories:**

AIIC	: Not in compliance with the inventory
DSL	: This product contains the following components that are not on the Canadian DSL nor NDSL.  Adenosine 5'-triphosphate disodium salt hydrate
NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: Not in compliance with the inventory
ISHL	: Not in compliance with the inventory
KECI	: Not in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: Not in compliance with the inventory
TCSI	: On the inventory, or in compliance with the inventory
TSCA	: Product contains substance(s) not listed on TSCA inventory.
TECI	: Not in compliance with the inventory

**TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

**KAPA PEG/NaCl****CERCLA Reportable Quantity**

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

**KAPA LTP Library Preparation Kit**Version  
3.0Revision Date:  
03-25-2022Date of last issue: 10-11-2021  
Date of first issue: 05-18-2016**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : No SARA Hazards**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-	25322-68-3	>= 20 - < 30 %
----------------------------------------------------------	------------	----------------

**Clean Water Act**

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Hydrochloric acid	7647-01-0	>= 0 - < 0.1 %
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The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Hydrochloric acid	7647-01-0	>= 0 - < 0.1 %
-------------------	-----------	----------------

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

**US State Regulations****Massachusetts Right To Know**

Hydrochloric acid	7647-01-0
-------------------	-----------

**Pennsylvania Right To Know**

Water	7732-18-5
Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-	25322-68-3
Sodium chloride (NaCl)	7647-14-5
Hydrochloric acid	7647-01-0

**Maine Chemicals of High Concern**

Product does not contain any listed chemicals

**Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

**Washington Chemicals of High Concern**

Product does not contain any listed chemicals

**The ingredients of this product are reported in the following inventories:**

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AIIC	: On the inventory, or in compliance with the inventory
DSL	: All components of this product are on the Canadian DSL
NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
ISHL	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
TCSI	: On the inventory, or in compliance with the inventory
TSCA	: All substances listed as active on the TSCA inventory
TECI	: Not in compliance with the inventory

**TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

***KAPA End Repair Enzyme Mix*****CERCLA Reportable Quantity**

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : No SARA Hazards

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

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The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

glycerol	56-81-5	>= 50 - < 70 %
----------	---------	----------------

### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-	60-00-4	>= 0 - < 0.1 %
----------------------------------------------------	---------	----------------

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-	60-00-4	>= 0 - < 0.1 %
----------------------------------------------------	---------	----------------

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

### US State Regulations

#### Massachusetts Right To Know

glycerol	56-81-5
----------	---------

#### Pennsylvania Right To Know

glycerol	56-81-5
Water	7732-18-5

#### Maine Chemicals of High Concern

Product does not contain any listed chemicals

#### Vermont Chemicals of High Concern

Product does not contain any listed chemicals

#### Washington Chemicals of High Concern

Product does not contain any listed chemicals

#### California Permissible Exposure Limits for Chemical Contaminants

glycerol	56-81-5
----------	---------

#### The ingredients of this product are reported in the following inventories:

AIIC : Not in compliance with the inventory

DSL : This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.

DNA-dependent DNA polymerase

Polynucleotide 5'-hydroxyl kinase

NZIoC : On the inventory, or in compliance with the inventory

ENCS : Not in compliance with the inventory

ISHL : Not in compliance with the inventory

KECI : Not in compliance with the inventory

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PICCS	: Not in compliance with the inventory
IECSC	: Not in compliance with the inventory
TCSI	: On the inventory, or in compliance with the inventory
TSCA	: All substances listed as active on the TSCA inventory
TECI	: Not in compliance with the inventory

### TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

## KAPA HiFi HotStart ReadyMix (2X)

### CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

### SARA 304 Extremely Hazardous Substances Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Specific target organ toxicity (single or repeated exposure)

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

glycerol	56-81-5	>= 10 - < 20 %
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### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Hydrochloric acid	7647-01-0	>= 0 - < 0.1 %
Sulfuric acid	7664-93-9	>= 0 - < 0.1 %
Glycine, N,N'-1,2-ethanediybis[N-(carboxymethyl)-	60-00-4	>= 0 - < 0.1 %



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The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Hydrochloric acid	7647-01-0	>= 0 - < 0.1 %
Sulfuric acid	7664-93-9	>= 0 - < 0.1 %
Glycine, N,N'-1,2-ethanediybis[N-(carboxymethyl)-	60-00-4	>= 0 - < 0.1 %

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

### US State Regulations

#### Massachusetts Right To Know

glycerol	56-81-5
Hydrochloric acid	7647-01-0
Sulfuric acid	7664-93-9

#### Pennsylvania Right To Know

Water	7732-18-5
glycerol	56-81-5

#### Maine Chemicals of High Concern

Product does not contain any listed chemicals

#### Vermont Chemicals of High Concern

Product does not contain any listed chemicals

#### Washington Chemicals of High Concern

Product does not contain any listed chemicals

#### California Prop. 65

WARNING: This product can expose you to chemicals including Sulfuric acid, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### California Permissible Exposure Limits for Chemical Contaminants

glycerol	56-81-5
----------	---------

#### The ingredients of this product are reported in the following inventories:

AIIC : Not in compliance with the inventory

DSL : This product contains the following components that are not on the Canadian DSL nor NDSL.

2'-Deoxyguanosine 5'-triphosphate trisodium salt

Adenosine 5'-(tetrahydrogen triphosphate), 2'-deoxy-

Thymidine 5'-(tetrahydrogen triphosphate), sodium salt

2'-Deoxycytidine 5'-triphosphate disodium salt

MAB / PAB

dUTP diphosphatase

DNA-dependent DNA polymerase

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NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: Not in compliance with the inventory
ISHL	: Not in compliance with the inventory
KECI	: Not in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: Not in compliance with the inventory
TCSI	: Not in compliance with the inventory
TSCA	: Product contains substance(s) not listed on TSCA inventory.
TECI	: Not in compliance with the inventory

**TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

***KAPA Library Amplification Primer Premixes (10X)*****CERCLA Reportable Quantity**

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : No SARA Hazards

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

**Clean Water Act**

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

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Hydrochloric acid 7647-01-0  $\geq 0 - < 0.1 \%$   
The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Hydrochloric acid 7647-01-0  $\geq 0 - < 0.1 \%$   
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

### US State Regulations

#### Massachusetts Right To Know

Hydrochloric acid 7647-01-0

#### Pennsylvania Right To Know

Water 7732-18-5  
Hydrochloric acid 7647-01-0

#### Maine Chemicals of High Concern

Product does not contain any listed chemicals

#### Vermont Chemicals of High Concern

Product does not contain any listed chemicals

#### Washington Chemicals of High Concern

Product does not contain any listed chemicals

### The ingredients of this product are reported in the following inventories:

AIIC : Not in compliance with the inventory

DSL : This product contains the following components that are not on the Canadian DSL nor NDSL.  
Primer / Oligonucleotide / Probe

NZIoC : On the inventory, or in compliance with the inventory

ENCS : Not in compliance with the inventory

ISHL : Not in compliance with the inventory

KECI : Not in compliance with the inventory

PICCS : Not in compliance with the inventory

IECSC : Not in compliance with the inventory

TCSI : Not in compliance with the inventory

TSCA : Product contains substance(s) not listed on TSCA inventory.

TECI : Not in compliance with the inventory

### TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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### KAPA Hyper Prep DNA Ligase

#### CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

#### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : No SARA Hazards

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

glycerol	56-81-5	>= 50 - < 70 %
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#### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-	60-00-4	>= 0 - < 0.1 %
----------------------------------------------------	---------	----------------

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-	60-00-4	>= 0 - < 0.1 %
----------------------------------------------------	---------	----------------

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

#### US State Regulations

##### Massachusetts Right To Know

glycerol	56-81-5
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##### Pennsylvania Right To Know

glycerol	56-81-5
Water	7732-18-5

##### Maine Chemicals of High Concern

Product does not contain any listed chemicals

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**Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

**Washington Chemicals of High Concern**

Product does not contain any listed chemicals

**California Permissible Exposure Limits for Chemical Contaminants**

glycerol

56-81-5

**The ingredients of this product are reported in the following inventories:**

AIIC	: Not in compliance with the inventory
DSL	: This product contains the following components listed on the Canadian NDSDL. All other components are on the Canadian DSL.  Polynucleotide 5'-hydroxyl kinase
NZIoC	: On the inventory, or in compliance with the inventory
ENCS	: Not in compliance with the inventory
ISHL	: Not in compliance with the inventory
KECI	: Not in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: Not in compliance with the inventory
TCSI	: On the inventory, or in compliance with the inventory
TSCA	: All substances listed as active on the TSCA inventory
TECI	: Not in compliance with the inventory

**TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

***KAPA A-Tailing Enzyme*****CERCLA Reportable Quantity**

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : No SARA Hazards

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**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

glycerol	56-81-5	>= 50 - < 70 %
----------	---------	----------------

### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-	60-00-4	>= 0 - < 0.1 %
----------------------------------------------------	---------	----------------

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-	60-00-4	>= 0 - < 0.1 %
----------------------------------------------------	---------	----------------

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

### US State Regulations

#### Massachusetts Right To Know

glycerol	56-81-5
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#### Pennsylvania Right To Know

glycerol	56-81-5
Water	7732-18-5

#### Maine Chemicals of High Concern

Product does not contain any listed chemicals

#### Vermont Chemicals of High Concern

Product does not contain any listed chemicals

#### Washington Chemicals of High Concern

Product does not contain any listed chemicals

#### California Permissible Exposure Limits for Chemical Contaminants

glycerol	56-81-5
----------	---------

#### The ingredients of this product are reported in the following inventories:

AIIC : Not in compliance with the inventory

DSL : This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.

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DNA-dependent DNA polymerase

NZloC	:	On the inventory, or in compliance with the inventory
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	Not in compliance with the inventory
TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	All substances listed as active on the TSCA inventory
TECI	:	Not in compliance with the inventory

### TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

## KAPA End-Repair Buffer (10X)

### GHS label elements

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H319 Causes serious eye irritation.

Precautionary Statements :

#### Prevention:

P264 Wash skin thoroughly after handling.

P280 Wear eye protection/ face protection.

#### Response:

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

## Kapa A-Tailing Buffer (10X)

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Not a hazardous substance or mixture.

***KAPA Ligation Buffer (5X)*****GHS label elements**

Not a hazardous substance or mixture.

***KAPA PEG/NaCl*****GHS label elements**

Not a hazardous substance or mixture.

***KAPA End Repair Enzyme Mix*****GHS label elements**

Not a hazardous substance or mixture.

***KAPA HiFi HotStart ReadyMix (2X)*****GHS label elements**

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H370 Causes damage to organs.

Precautionary Statements :

**Prevention:**  
P260 Do not breathe mist or vapors.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.

**Response:**  
P307 + P311 IF exposed: Call a POISON CENTER or doctor/physician.

**Storage:**  
P405 Store locked up.

**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

***KAPA Library Amplification Primer Premixes (10X)*****GHS label elements**

Not a hazardous substance or mixture.

***KAPA Hyper Prep DNA Ligase*****GHS label elements**

Not a hazardous substance or mixture.

***KAPA A-Tailing Enzyme***



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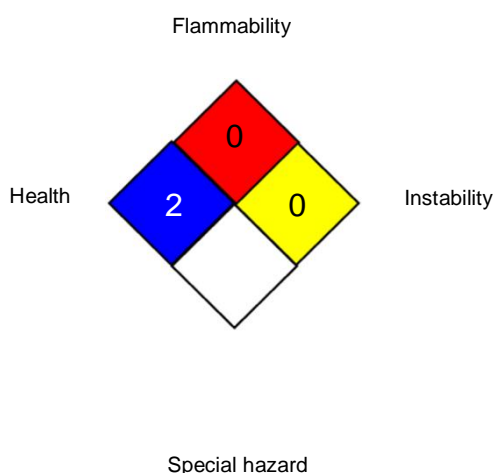
### GHS label elements

Not a hazardous substance or mixture.

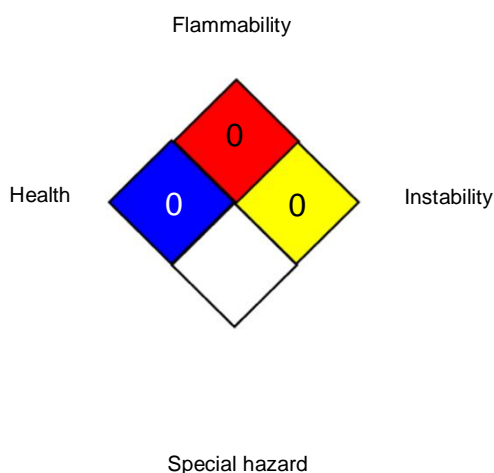
## SECTION 16. OTHER INFORMATION

### Further information

#### NFPA 704:



#### NFPA 704:



#### HMIS® IV:

HEALTH	/	2
FLAMMABILITY		0
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

#### HMIS® IV:

HEALTH	/	0
FLAMMABILITY		0
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

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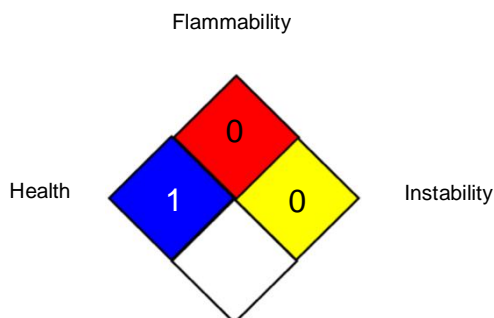
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### NFPA 704:

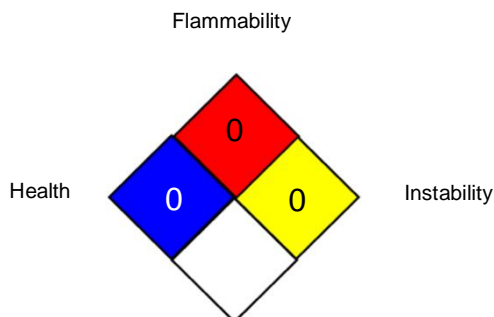


### HMIS® IV:

HEALTH	/	1
FLAMMABILITY		0
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

### NFPA 704:



### HMIS® IV:

HEALTH	/	0
FLAMMABILITY		0
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

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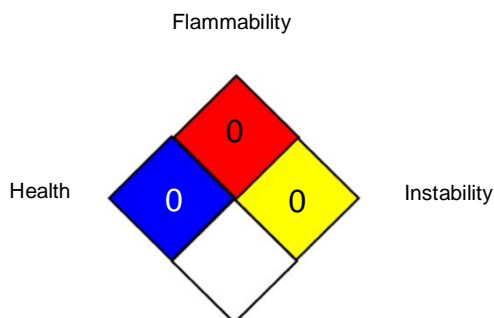
## KAPA LTP Library Preparation Kit

Version  
3.0

Revision Date:  
03-25-2022

Date of last issue: 10-11-2021  
Date of first issue: 05-18-2016

### NFPA 704:

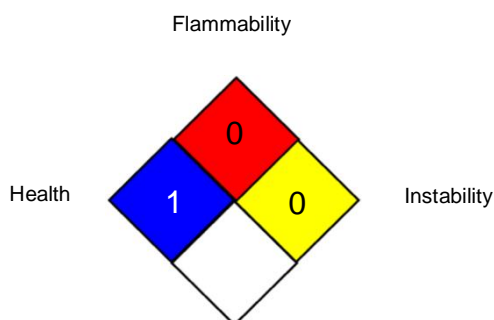


### HMIS® IV:

HEALTH	/	0
FLAMMABILITY		0
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

### NFPA 704:



### HMIS® IV:

HEALTH	/	4
FLAMMABILITY		0
PHYSICAL HAZARD		0

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# SAFETY DATA SHEET



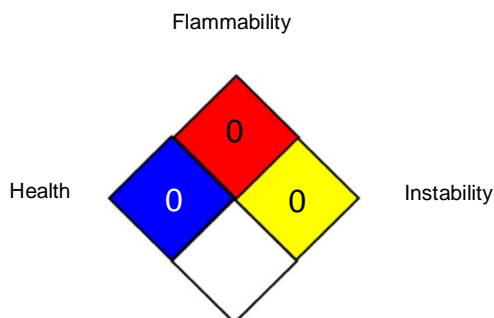
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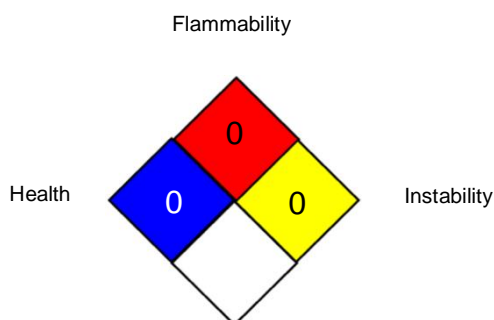


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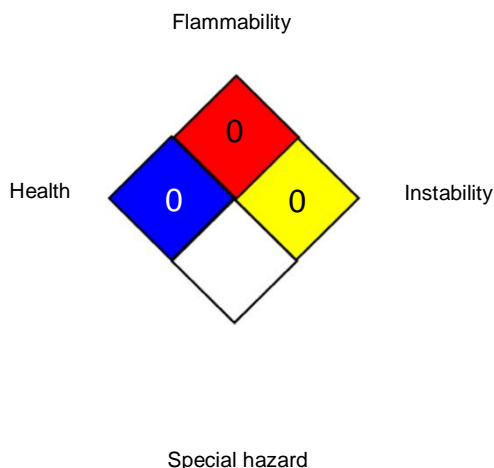
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### Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECS - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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