

Version 3.0

Revision Date: 03-25-2022

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

SECTION 1. IDENTIFICATION

Product name Product code		KAPA LTP Library Preparation 07961863001	n Kit
Manufacturer or supplier's of Company name of supplier			
Address	:	9115 Hague Road Indianapolis, IN 46250 USA	
Telephone Emergency telephone	:	1-800-428-5074	
In case of emergencies:	:	CHEMTREC	1-800-424-9300 (U.S. or Ca- nada) 1-703-527-3887 (Internatio- nal)

Recommended use of the chemical and restrictions on use

Restrictions on use :	For prof	essional	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



Precautionary Statements	:	Brovention
Hazard Statements	:	H319 Causes serious eye irritation. H370 Causes damage to organs.
Signal Word	:	Danger

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-	77-86-1	>= 5 - < 10
(hydroxymethyl)-		
2,3-Butanediol, 1,4-dimercapto-,	3483-12-3	>= 1 - < 5
(2R,3R)-rel-		

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-	77-86-1	>= 1 - < 5
(hydroxymethyl)-		

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	>= 30 - < 50



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hydroomegahydroxy-		
1,3-Propanediol, 2-amino-2-	77-86-1	>= 1 - < 5
(hydroxymethyl)-		
Actual concentration is withhold a	a a trada socrat	

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	25322-68-3	>= 20 - < 30
hydroomegahydroxy-		

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 sporet			

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-,	75-57-0	>= 1 - < 5
chloride (1:1) 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	>= 50 - < 70
Polynucleotide 5'-hydroxyl kinase	37211-65-7	>= 0.1 - < 1
Actual concentration is withheld as	a trade secret	·

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	>= 50 - < 70		
DNA-dependent DNA polymerase	9012-90-2	< 0.1		
Actual concentration is withheld as a trade secret				

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

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



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			Rinse mouth with	n water.
	Most important sympto and effects, both acute delayed		None known.	
	Notes to physician	:		edure should be established in consultation esponsible for industrial medicine.
SEC	TION 5. FIRE-FIGHTI	NG MEAS	URES	
	Suitable extinguishing	media :		g measures that are appropriate to local cir- the surrounding environment.
	Unsuitable extinguishi media	ng :	High volume wat	er jet
	Specific hazards durin fighting	g fire :	No information a	vailable.
	Further information	:	Use extinguishin	ure for chemical fires. g measures that are appropriate to local cir- the surrounding environment.
	Special protective equ for fire-fighters	ipment :	Wear self-contai necessary.	ned breathing apparatus for firefighting if

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec- tive equipment and emer- gency procedures	:	Use personal protective equipment. 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.

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 sto	orage :	ce. Electrical installa	ightly closed in a dry and well-ventilated pla- tions / working materials must comply with safety standards.
	Further information on age conditions	stor- :	See label, packa	ge insert or internal guidelines
	Further information on age stability	stor- :	No decompositio	n 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 parame- ters / Permissible concentration	Basis
Poly(oxy-1,2- ethanediyl), .alphahydro- .omegahydroxy-	25322-68-3	TWA (aero- sol)	10 mg/m3	US WEEL

KAPA PEG/NaCl

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / Permissible concentration	Basis
Poly(oxy-1,2- ethanediyl), .alphahydro- .omegahydroxy-	25322-68-3	TWA (aero- sol)	10 mg/m3	US WEEL

KAPA End Repair Enzyme Mix

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / 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



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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 parame- ters / 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 poly- merase	9012-90-2	IOEL	0.00006 mg/m3	Roche In- dustrial Hy- giene Com- mittee (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 parame- ters / 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 In- dustrial Hy- giene Com- mittee (RIHC)

KAPA A-Tailing Enzyme



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Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / 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 poly- merase	9012-90-2	IOEL	0.00006 mg/m3	Roche In- dustrial Hy- giene Com- mittee (RIHC)
Engineering measures	: No data avai	lable		
Personal protective equipm	ent			
Respiratory protection	: In the case of ved filter.	of vapor formatio	n use a respirator with	n an appro-
Hand protection Material Break through time Glove thickness	In case of co Nitrile rubber > 30 min > 0.11 mm	ontact through sp r	lashing:	
Material Break through time Glove thickness	In case of fu : butyl-rubber : > 480 min : > 0.4 mm	Il contact:		
Remarks Eye protection	Replace torr : Eye wash bo Tightly fitting	or punctured glo ottle with pure wa safety goggles		

Skin and body protection	:	Impervious clothing Choose body protection according to the amount and con- centration 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
рН	:	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/cm3
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 tempe	erature : No data availa	ble
Viscosity Viscosity, dynamic	: No data availa	ble
Viscosity, kinemat	ic : No data availa	ble
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
рН	:	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/cm3
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
рН	:	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



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Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	No data available
Density	:	1.040 g/cm3
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
рН	:	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 sustai	Does not sustain combustion.		
		The product is i	not flammable.		
Self-ignition	:	Not applicable			
Upper explosion limit / flammability limit	Upper :	No data availab	ble		
Lower explosion limit / flammability limit	Lower :	No data availab	ble		
Vapor pressure	:	No data availab	ble		
Relative vapor density	:	No data availab	ble		
Relative density	:	No data availab	ble		
Density	:	1.120 g/cm3			
Solubility(ies) Water solubility	:	completely mise	cible		
Solubility in other se	olvents :	No data availab	ble		
Partition coefficient: n- octanol/water	:	No data availab	ble		
Autoignition temperatu	re :	No data availab	ble		
Decomposition temper	ature :	No data availab	ble		
Viscosity Viscosity, dynamic	:	No data availab	ble		
Viscosity, kinematic	; ;	No data availab	ble		
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



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	рН		:	6.0			
	Melting point/range		:	No data availab	le		
	Boiling point/boiling ra	nge	:	No data availab	le		
	Flash point		:	does not flash			
	Evaporation rate		:	No data availab	le		
	Flammability (liquids)		:	Does not sustai	n combustion.		
				The product is not flammable.			
	Self-ignition		:	Not applicable			
	Upper explosion limit / flammability limit	Upper	:	No data availab	le		
	Lower explosion limit / flammability limit	Lower	:	No data availab	le		
	Vapor pressure		:	No data availab	le		
	Relative vapor density	,	:	No data availab	le		
	Relative density		:	No data availab	le		
	Density		:	1.148 g/cm3			
	Solubility(ies) Water solubility		:	completely miso	cible		
	Solubility in other s	olvents	:	No data availab	le		
	Partition coefficient: n- octanol/water		:	No data availab	le		
	Autoignition temperatu	ıre	:	No data availab	le		
	Decomposition tempe	rature	:	No data availab	le		
	Viscosity Viscosity, dynamic		:	No data availab	le		
	Viscosity, kinematio	C	:	No data availab	le		
	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	:	colorle	SS
	Odor	:	odorle	S
	Odor Threshold	:	No dat	a available
	рН	:	8.7	
	Melting point/range	:	No dat	a available
	Boiling point/boiling ra	nge :	No dat	a available
	Flash point	:	does n	ot flash
	Evaporation rate	:	No dat	a available
	Flammability (solid, ga	s) :	Does r	ot sustain combustion.
	Flammability (liquids)	:	Does r	ot sustain combustion.
	Self-ignition	:	Not ap	blicable
	Upper explosion limit / flammability limit	Upper :	No dat	a available
	Lower explosion limit / flammability limit	Lower :	No dat	a available
	Vapor pressure	:	No dat	a available
	Relative vapor density	:	No dat	a available
	Relative density	:	No dat	a available
	Density	:	1.044 (ı/cm3
	Solubility(ies) Water solubility	:	comple	tely miscible
	Solubility in other s	olvents :	No dat	a available
	Partition coefficient: n- octanol/water	:	No dat	a available
	Autoignition temperatu	ire :	No dat	a available
	Decomposition temper	rature :	No dat	a available
	Viscosity Viscosity, dynamic	:	No dat	a available



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Viscosity, kine Explosive properti		No data availab Not explosive	le
Oxidizing properti	es :	The substance of	or mixture is not classified as oxidizing.

KAPA Library Amplification Primer Premixes (10X)

Appearance	:	liquid
Color	:	colorless
Odor	:	odorless
Odor Threshold	:	No data available
рН	:	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/cm3
Solubility(ies) Water solubility	:	completely miscible



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	Solubility in other s	olvents :	No data availab	le
	Partition coefficient: n- octanol/water	:	No data availab	le
	Autoignition temperatu	ire :	No data availab	le
	Decomposition temper	rature :	No data availab	le
	Viscosity Viscosity, dynamic	:	No data availab	le
	Viscosity, kinematio	c :	No data availab	le
	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
рН	:	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 availabl	e
Relative vapor dens	sity :	No data availabl	e
Relative density	:	No data availabl	e
Density	:	1.148 g/cm3	
Solubility(ies) Water solubility	:	completely misc	ible
Solubility in othe	er solvents :	No data availabl	e
Partition coefficient octanol/water	:n- :	No data availabl	e
Autoignition temper	rature :	No data availabl	e
Decomposition tem	perature :	No data availabl	e
Viscosity Viscosity, dynan	nic :	No data availabl	e
Viscosity, kinem	atic :	No data availabl	e
Explosive propertie	s :	Not explosive	
Oxidizing properties	s :	The substance c	or mixture is not classified as oxidizing

KAPA A-Tailing Enzyme

Appearance	:	liquid
Color	:	colorless
Odor	:	odorless
Odor Threshold	:	No data available
рН	:	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/cm3
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.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reac- tions	:	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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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 Exposure time Method Result GLP	:	human keratinocytes 4 h OECD Test Guideline 431 Irritating to skin. yes
Species Exposure time Method Result GLP		reconstructed human epidermis (RhE) 60 min OECD Test Guideline 439 Irritating to skin. yes



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Serious eye damage/eye irritation

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
Species Result	:	Human Risk of serious damage to eyes.
	:	
Result		Risk of serious damage to eyes.

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)-:

:	Direct Peptide Reactivity Assay (DPRA) Does not cause skin sensitization. yes Based on data from similar materials Expert judgment
:	Buehler Test Guinea pig OECD Test Guideline 406 no Based on data from similar materials
:	Intracutaneous test Guinea pig no 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: MouseAssessment: Does not cause skin sensitization.Method: OECD Test Guideline 429GLP: 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 mu- tation 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 p

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.



	orary Prepar				
sion	Revision 03-25-20		Date of last issue: 10-11-2021 Date of first issue: 05-18-2016		
OSHA	No component of this product present at levels greater than or equal to 0.1% 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 Not classified I	toxicity based on available	e information.			
Components:					
1,3-Propaned	iol, 2-amino-2-(hy	ydroxymethyl)-	:		
Effects on ferti	lity :	Species: Rat, Application R Dose: 100, 30 General Toxic General Toxic Method: OEC	productive and developmental toxicity study male and female oute: Oral 00, 1000 mg/kg bw/day city Parent: NOAEL: > 1,000 mg/kg body weight city F1: NOAEL: > 1,000 mg/kg body weight D Test Guideline 421 al testing did not show any effects on fertility.		
Effects on feta	I development :	Species: Rat, Strain: wistar Application R Dose: 100, 30 General Toxid weight Development Method: OEC Result: No eff GLP: yes	female		

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Components:

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 Assessment GLP Remarks	: : :	Direct Peptide Reactivity Assay (DPRA) Does not cause skin sensitization. yes Based on data from similar materials Expert judgment
Test Type Species Method GLP Remarks		Buehler Test Guinea pig OECD Test Guideline 406 no Based on data from similar materials
Test Type Species GLP Remarks	::	Intracutaneous test Guinea pig no 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:

Species NOAEL LOAEL Application Route Exposure time Number of exposures Dose Method GLP		OECD Test Guideline 408 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-((hy	droxymethyl)-:
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:

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



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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 Assessment GLP Remarks	:	Direct Peptide Reactivity Assay (DPRA) Does not cause skin sensitization. yes Based on data from similar materials Expert judgment
Test Type Species Method GLP Remarks		Buehler Test Guinea pig OECD Test Guideline 406 no Based on data from similar materials
Test Type Species GLP Remarks	: : :	Intracutaneous test Guinea pig no Based on data from similar materials

Germ cell mutagenicity

Not classified based on available information.

Components:

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:

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), .alphahydroomegahydroxy-:						
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.



APA LTP I	Library Preparation Ki	t						
rsion	Revision Date: 03-25-2022	Date of last issue: 10-11-2021 Date of first issue: 05-18-2016						
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 identified as a known or anti-	t present at levels greater than or equal to 0.1% is cipated carcinogen by NTP.						
	ive toxicity ed based on available informatior le exposure	٦.						
-	ed based on available information	٦.						
Polv(oxv-1	Poly(oxy-1,2-ethanediyl), .alphahydroomegahydroxy-:							
Assessmen	t : The subst	tance or mixture is not classified as specific targer icant, single exposure.						
•	ated exposure							
Componen	Not classified based on available information.							
Assessmen		tance or mixture is not classified as specific targe icant, repeated exposure.						
Aspiration Not classifie	toxicity ed based on available informatior	٦.						
<u>Componen</u>	its:							
Poly(oxy-1 No data ava	, 2-ethanediyl), .alphahydroo ailable	megahydroxy-:						
APA End R	epair Enzyme Mix							
Acuto toxic	-							
Acute toxic	,ity							

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:

n irritation

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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Result: negative GLP: No information available.

Carcinogenicity

Not classified based on available information.

Components:

glycerol: Species Application Ro Exposure time GLP Remarks		Rat, male and female Oral 2 Years No information available. 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		this product present at levels greater than or equal to 0.1% is pable, possible or confirmed human carcinogen by IARC.		
OSHA		f this product present at levels greater than or equal to 0.1% is f regulated carcinogens.		
NTP		this product present at levels greater than or equal to 0.1% is nown 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 feta	I 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.

STOT-repeated exposure

Not classified based on available information.



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Repeated dose toxicity

Components:

glycerol:

Species NOAEL NOAEL Application Route Exposure time Number of exposures Dose GLP		Rat, male and female 4580 mg/kg 4,580 mg/kg Oral 90 d daily 4580 - 25,800 mg/kg/day no
Species Application Route Test atmosphere Exposure time Number of exposures Dose GLP		Rat, male and female Inhalation dust/mist 13 Weeks 6 hours/day, 5 days/week 33, 165 and 660 mg/m3 No information available.
Species NOAEL NOAEL Application Route Exposure time Number of exposures Dose GLP		Rat 5040 mg/kg 5,040 mg/kg dermal 45 Weeks 8 hours/day, 5 days/week 0.5-4.0 ml/kg no
Repeated dose toxicity - Assessment	:	Mild eye irritant, Mild respiratory irritant, No skin irritation

Aspiration toxicity

Not classified based on available information.

KAPA HiFi HotStart ReadyMix (2X)

Acute toxicity

Not classified based on available information.

Components:

glycerol:	
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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



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GLP: no

1,3-Propanediol, 2-aminc Acute oral toxicity	: LD50 (Rat, female): > 5,000 mg/kg
Note of a toxicity	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-t	rimethyl-, 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 av	vailable information
Components:	
glycerol:	
Species	: Rabbit
Species Exposure time	: Rabbit : 24 h
Exposure time Result	
Exposure time Result	: 24 h
Exposure time Result GLP	24 hNo skin irritationno
Exposure time Result GLP 1,3-Propanediol, 2-aminc	24 hNo skin irritationno
Exposure time Result GLP 1,3-Propanediol, 2-amino Species	 24 h No skin irritation no
Exposure time Result GLP 1,3-Propanediol, 2-amino Species Exposure time Method	 24 h No skin irritation no b-2-(hydroxymethyl)-: Rabbit 4 h OECD Test Guideline 404
Exposure time Result GLP 1,3-Propanediol, 2-amino Species Exposure time Method Result	 24 h No skin irritation no b-2-(hydroxymethyl)-: Rabbit 4 h
Exposure time Result GLP 1,3-Propanediol, 2-amino Species Exposure time Method Result	 24 h No skin irritation no b-2-(hydroxymethyl)-: Rabbit 4 h OECD Test Guideline 404
Exposure time Result GLP 1,3-Propanediol, 2-amino Species Exposure time Method Result GLP	 24 h No skin irritation no b-2-(hydroxymethyl)-: Rabbit 4 h OECD Test Guideline 404 No skin irritation yes
Exposure time Result GLP 1,3-Propanediol, 2-amino Species Exposure time	 24 h No skin irritation no b-2-(hydroxymethyl)-: Rabbit 4 h OECD Test Guideline 404 No skin irritation yes
Exposure time Result GLP 1,3-Propanediol, 2-amino Species Exposure time Method Result GLP Methanaminium, N,N,N-t i	 24 h No skin irritation no b-2-(hydroxymethyl)-: Rabbit 4 h OECD Test Guideline 404 No skin irritation yes trimethyl-, chloride (1:1):
Exposure time Result GLP 1,3-Propanediol, 2-amino Species Exposure time Method Result GLP Methanaminium, N,N,N-t i	 24 h No skin irritation no b-2-(hydroxymethyl)-: Rabbit 4 h OECD Test Guideline 404 No skin irritation yes trimethyl-, chloride (1:1): Irritating to skin.

Components:

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



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

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)-:

:	Direct Peptide Reactivity Assay (DPRA) Does not cause skin sensitization. yes Based on data from similar materials Expert judgment
	Buehler Test Guinea pig OECD Test Guideline 406 no Based on data from similar materials
:	Intracutaneous test Guinea pig no 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)-:

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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



Version **Revision Date:** Date of last issue: 10-11-2021 3.0 03-25-2022 Date of first issue: 05-18-2016 **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. No component of this product present at levels greater than or equal to 0.1% is **OSHA** on OSHA's list of regulated carcinogens. No ingredient of this product present at levels greater than or equal to 0.1% is NTP 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 Species: Rabbit, female Effects on fetal development : 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 Test Type: Pre-natal Effects on fetal development : 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.

:

2

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 NOAEL NOAEL Application Route Exposure time Number of exposures Dose GLP		Rat, male and female 4580 mg/kg 4,580 mg/kg Oral 90 d daily 4580 - 25,800 mg/kg/day no
Species Application Route Test atmosphere Exposure time Number of exposures Dose GLP	:::::::::::::::::::::::::::::::::::::::	Rat, male and female Inhalation dust/mist 13 Weeks 6 hours/day, 5 days/week 33, 165 and 660 mg/m3 No information available.



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Species NOAEL NOAEL Application Route Exposure time Number of exposures Dose GLP Repeated dose toxicit	: 0.5-4.0 ml : no	kg ay, 5 days/week
Assessment	y Mild eye h	mant, which respiratory initiality no Skin initialion

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



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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 Application Rou Exposure time GLP Remarks	ute :	Rat, male and female Oral 2 Years No information available. 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	e 5'-hydroxyl kina	ISE:
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	5	his 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

STOT-single exposure



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Components:

Polynucleotide 5'-hydroxyl kinase:

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 NOAEL NOAEL Application Route Exposure time Number of exposures Dose GLP	 Rat, male and female 4580 mg/kg 4,580 mg/kg Oral 90 d daily 4580 - 25,800 mg/kg/day no
Species Application Route Test atmosphere Exposure time Number of exposures Dose GLP	 Rat, male and female Inhalation dust/mist 13 Weeks 6 hours/day, 5 days/week 33, 165 and 660 mg/m3 No information available.
Species NOAEL NOAEL Application Route Exposure time Number of exposures Dose GLP	 Rat 5040 mg/kg 5,040 mg/kg dermal 45 Weeks 8 hours/day, 5 days/week 0.5-4.0 ml/kg no
Repeated dose toxicity - Assessment	: Mild eye irritant, Mild respiratory irritant, No skin irritation

Aspiration toxicity



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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



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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 GLP: No information available.

Carcinogenicity

Not classified based on available information.

Components:

glycerol:			
Species Application Ro Exposure time GLP Remarks			
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 Not classified b	toxicity based on available information.		
Components:			

glycerol:

Effects on fertility

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



KAPA LTP Library Preparation Kit

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		Application Ro Dose: 2000 m Fertility: NOA GLP: no	
Effects on feta	al development :	Application Ro Dose: 11.8, 5 Duration of Si	
STOT-single Not classified	exposure based on available	information.	
<u>Components</u>	<u>:</u>		
DNA-depend	ent DNA polymera	ase:	
Assessment	:		e or mixture is not classified as specific target t, single exposure.
	based on available	information.	
<u>Components</u>			
DNA-depend Assessment	ent DNA polymera	The substance	e or mixture is not classified as specific target t, repeated exposure.
Repeated do	se toxicity		
<u>Components</u>	<u>:</u>		
glycerol:			
Species NOAEL NOAEL Application Ro Exposure time Number of ex Dose GLP	e :	Rat, male and 4580 mg/kg 4,580 mg/kg Oral 90 d daily 4580 - 25,800 no	
Species Application Ro Test atmosph Exposure time Number of exp Dose GLP	ere :	Rat, male and Inhalation dust/mist 13 Weeks 6 hours/day, 5 33, 165 and 6 No informatio	5 days/week 60 mg/m3
Species NOAEL NOAEL	:	Rat 5040 mg/kg 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

SECTION 12. ECOLOGICAL INFORMATION

KAPA End-Repair Buffer (10X)

Ecotoxicity

Components:

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

1,5-1 Topaneuloi, 2-animo-2-(ity	aroxymetry)
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



KAP/	A LIP Library i	repai	ation K	It
Version 3.0		Revision 03-25-20		Date of last issue: 10-11-2021 Date of first issue: 05-18-2016
				l monitoring: no OECD Test Guideline 209
	cotoxicology Assess oxicity Data on Soil	sment	Not exped	cted to adsorb on soil.
	ther organisms releva e environment	int to :	No data a	available
2.	3-Butanediol, 1,4-di	mercapte	o (2R.3R)-i	rel-:
Тс	oxicity to daphnia and quatic invertebrates	-	EC50 (Da End point Exposure Test Type Method: 0 GLP: yes	aphnia magna (Water flea)): 34.8 mg/l t: Immobilization e time: 48 h e: semi-static test OECD Test Guideline 202
			End point Exposure Test Type Method: 0 GLP: yes	Daphnia magna (Water flea)): 25.0 mg/l t: Immobilization e time: 48 h e: semi-static test OECD Test Guideline 202
	oxicity to algae/aquati ants	c :	24.3 mg/l End point Exposure Test Type Method: (GLP: yes Remarks: NOErC (F 3.2 mg/l End point Exposure Test Type Method: (GLP: yes	t: Growth rate e time: 72 h e: static test OECD Test Guideline 201 f: nominal concentration Raphidocelis subcapitata (freshwater green alga)): t: Growth rate e time: 72 h e: static test OECD Test Guideline 201
			1.0 mg/l Exposure Method: 0 GLP: yes	Raphidocelis subcapitata (freshwater green alga)): e time: 72 h OECD Test Guideline 201 : : nominal concentration



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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

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 removabil-		Method: see user defined free text

Physico-chemical removabil-	:	Method: see user defined free text
ity		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 Mothod: OECD Test Cuideline 117
		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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Ecotoxicity

Components:

1,3-Propanediol, 2-amino-2-(hydroxymethyl)-: LC50 (Fish): > 4,000 mg/l Toxicity to fish : Exposure time: 96 h Test Type: static test Analytical monitoring: no Method: DIN 38412 GLP: no Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 980 mg/l aquatic invertebrates 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 ErC50 (Pseudokirchneriella subcapitata (green algae)): 473 plants 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 : No data available the environment

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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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 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l Exposure time: 72 h
Toxicity to fish (Chronic tox- icity)	:	> 1 mg/l
Ecotoxicology Assessment Acute aquatic toxicity	:	This product has no known ecotoxicological effects.
Ecotoxicology Assessment	:	This product has no known ecotoxicological effects. This product has no known ecotoxicological effects.

the environment

Other organisms relevant to : No data available

Toxicity to fish	: LC50 (Fish): > 4,000 mg/l			
	Exposure time: 96 h			
	Test Type: static test			



rsion)	Revisior 03-25-2		Date of last issue: 10-11-2021 Date of first issue: 05-18-2016			
		Analytical Method: D GLP: no	monitoring: no IN 38412			
Toxicity to daphnia and other : aquatic invertebrates		End point: Exposure Test Type: Analytical	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 alga plants	e/aquatic	mg/l End point: Exposure Test Type: Analytical Method: O	eudokirchneriella subcapitata (green algae)): 473 Growth rate time: 48 h : static test monitoring: no ECD Test Guideline 201 nformation available.			
Toxicity to micr	oorganisms	End point: Exposure Test Type: Analytical	vated sludge): > 1,000 mg/l Respiration inhibition time: 3 h : static test monitoring: no ECD Test Guideline 209			
Ecotoxicology		Not ovnoo	tod to odporth on poil			
Toxicity Data o Other organism the environmer	is relevant to	: Not expec : No data av	ted to adsorb on soil. /ailable			
Persistence a	nd degradability	/				
Components:						
Poly(oxy-1,2-e Biodegradabilit		: Biodegrad Exposure	negahydroxy-: ation: > 90 % time: 28 d ECD Test Guideline 301			
1,3-Propanedi	ol, 2-amino-2-(ŀ	ydroxymeth	yl)-:			
Biodegradabilit	y	Result: Re Biodegrad Exposure	activated sludge adily biodegradable. ation: 100 % time: 28 d ECD Test Guideline 301F			



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Bioaccumulative potential

Components:

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

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

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	: Remarks: Not applicable
halogens (AOX)	

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- : Remarks: No data available octanol/water

Mobility in soil

No data available

Other adverse effects

Components:

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

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

KAPA End Repair Enzyme Mix

Ecotoxicity

Components:

glycerol:

giyceioi.		
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 aquation	c toxicity	:	This product has	no known ecotoxicological effects.	
Toxicity Data o	n Soil	:	Not expected to	adsorb on soil.	
Other organism the environmer		:	No data available	e	
Persistence a	nd degradabili	ity			
Components:					
glycerol: Biodegradabilit	У	:	aerobic Inoculum: activa Concentration: 2 Result: Readily b Biodegradation: Exposure time: 2 GLP: no	26 mg/l biodegradable. 94 %	
Bioaccumulat	ive potential				
Components:					
glycerol: Partition coeffic octanol/water	cient: n-	:	log Pow: -1.75 (7 pH: 7.4 Method: OECD T GLP: no	77 °F / 25 °C) Test Guideline 107	
Mobility in soi No data availal Other adverse	ole				
KAPA HiFi HotStart Rea		Mix	(2X)		
Ecotoxicity					
Components:					
glycerol:					
Toxicity to fish		:	LC50 (Oncorhyn End point: morta Exposure time: 9 Test Type: static GLP: no	96 h	
Toxicity to dapl aquatic inverte		:	LC50 (Daphnia r End point: morta Exposure time: 4 Test Type: static Analytical monito GLP: no	l8 h test	



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	Toxicity to algae/aqua plants	atic :							
	Toxicity to microorgar	nisms :	End point: Exposure t Test Type:						
	Ecotoxicology Asse	ssment							
	Acute aquatic toxicity	:	This produ	t has no known ecotoxicological effects.					
	Chronic aquatic toxici	ty :	This produ	ct has no known ecotoxicological effects.					
	Toxicity Data on Soil	:	Not expect	ed to adsorb on soil.					
	Other organisms relevent the environment	vant to :	No data av	ailable					
	1.3-Propanediol. 2-a	1,3-Propanediol, 2-amino-2-(hydroxymethyl)-:							
	Toxicity to fish	:	LC50 (Fish Exposure t Test Type:): > 4,000 mg/l me: 96 h static test nonitoring: no					
	Toxicity to daphnia an aquatic invertebrates	nd other :	End point: Exposure t Test Type: Analytical r						
	Toxicity to algae/aqua plants	atic :	mg/l End point: Exposure t Test Type: Analytical r Method: O						
	Toxicity to microorgar	nisms :	End point: Exposure t Test Type: Analytical r						

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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-trime	eth	yl-, chloride (1:1):
Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 462 m Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.16 mg/l Exposure time: 11 d GLP: yes
		NOEC (Daphnia magna (Water flea)): 0.03 mg/l Exposure time: 11 d GLP: yes
		LC50 (Daphnia magna (Water flea)): 1.86 mg/l Exposure time: 48 h GLP: yes
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)) 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 polym	era	se:
Ecotoxicology Assessment		
Toxicity Data on Soil	:	Not expected to adsorb on soil.
Other organisms relevant to the environment	:	No data available
Persistence and degradabili	ty	
Components:		
glycerol:		
Biodegradability		aerobic



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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-trimet	thyl-, chloride (1:1):							
Biodegradability	: Remarks: Expected to be biodegradable							
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							
1,3-Propanediol, 2-amino-2-(h	ydroxymethyl)-:							
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							
Methanaminium, N,N,N-trimet	thyl-, chloride (1:1):							
Partition coefficient: n- octanol/water	: Remarks: No data available							
DNA-dependent DNA polyme	rase:							
Partition coefficient: n- octanol/water	: Remarks: No data available							
Mobility in soil No data available Other adverse effects								
NDA I throw Anonlification	Drimony Dromainson (10V)							

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:

giyceroi.		
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



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Polynucleotide 5'-hydr	Polynucleotide 5'-hydroxyl kinase:							
Ecotoxicology Assessment								
Toxicity Data on Soil	:	Not expect	ted to adsorb on soil.					
Other organisms relevar the environment	nt to :	No data a	vailable					
Persistence and degra	Persistence and degradability							
Components:								
glycerol:								
Biodegradability	:	Inoculum: Concentra Result: Re Biodegrad	activated sludge ation: 226 mg/l eadily biodegradable. dation: 94 % time: 24 h					
Bioaccumulative poter	Bioaccumulative potential							
Components:								
glycerol:								
Partition coefficient: n- octanol/water	:	pH: 7.4	-1.75 (77 °F / 25 °C) DECD Test Guideline 107					
Polynucleotide 5'-hydr	Polynucleotide 5'-hydroxyl kinase:							
Partition coefficient: n- octanol/water	:		No data available					
Mobility in soil								
No data available								
Other adverse effects								
(APA A-Tailing Enzyn	ie							
Ecotoxicity								
Components:								
glycerol:								
Toxicity to fish	:	End point Exposure	corhynchus mykiss (rainbow trout)): 54,000 m : mortality time: 96 h :: static test					
Toxicity to daphnia and	other :	LC50 (Da	phnia magna (Water flea)): 1,955 mg/l					
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	vision Date: 25-2022	Date of last issue: 10-11-2021 Date of first issue: 05-18-2016
aquatic invertebrates	Expos Test T	oint: mortality sure time: 48 h -ype: static test tical monitoring: no no
Toxicity to algae/aquatic plants	End p Expos	nedesmus quadricauda (Green algae)): > 10,000 mg oint: Growth rate sure time: 8 d Type: static test no
Toxicity to microorganisms	End p Expos Test 1	(Pseudomonas putida): > 10,000 mg/l oint: Growth rate sure time: 16 h Type: static test No information available.
Ecotoxicology Assessme	ent	
Acute aquatic toxicity	: This p	roduct has no known ecotoxicological effects.
Chronic aquatic toxicity	: This p	roduct has no known ecotoxicological effects.
Toxicity Data on Soil	: Not ex	spected to adsorb on soil.
Other organisms relevant t the environment	o : No da	ta available
DNA-dependent DNA pol	ymerase:	
Ecotoxicology Assessme	ent	
Toxicity Data on Soil	: Not ex	spected to adsorb on soil.
Other organisms relevant t the environment	o : No da	ta available
Persistence and degrada	bility	
Components:		
glycerol: Biodegradability	Conce Resul Biode	um: activated sludge entration: 226 mg/l t: Readily biodegradable. gradation: 94 % sure time: 24 h
Bioaccumulative potentia	al	
Components:		
glycerol:		
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	Partition coefficient: n- octanol/water	:	log Pow: -1.75 (7 pH: 7.4 Method: OECD T GLP: no	7°F / 25 °C) ⁻ est Guideline 107
DNA-dependent D		polymera	se:	
	Partition coefficient: n- octanol/water	:	Remarks: No dat	a available
	Mobility in soil			
No data available				
	Other adverse effects	5		
SEC	TION 13. DISPOSAL	CONSIDER	ATIONS	

Disposal methods

Disposal methods		
Waste from residues	 Do not contaminate ponds, waterways or ditches cal or used container. Send to a licensed waste management company Can be disposed as waste water, when in comp local regulations. 	/.
Contaminated packaging	 Empty remaining contents. Dispose of as unused product. Empty containers should be taken to an approve handling site for recycling or disposal. Do not re-use empty containers. 	ed waste

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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SECTION 15. REGULATORY INFORMATION

KAPA End-Repair 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	:	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 SOCMI 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 R	Right To Know	
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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 comp	pliance with the inventory
DSL		et contains the following components that are not adian DSL nor NDSL.
	2'-Deoxygu	anosine 5'-triphosphate trisodium salt
	Adenosine	5'-(tetrahydrogen triphosphate), 2'-deoxy-
	2'-Deoxycyt	tidine 5'-triphosphate disodium salt
	Thymidine 8	5'-(tetrahydrogen triphosphate), sodium salt
	Adenosine	5'-triphosphate disodium salt hydrate
NZIoC	: On the inve	ntory, or in compliance with the inventory
ENCS	: Not in comp	pliance with the inventory
ISHL	: Not in comp	pliance with the inventory
KECI	: Not in comp	pliance with the inventory
PICCS	: Not in comp	pliance with the inventory
IECSC	: Not in comp	pliance with the inventory
TCSI	: Not in comp	pliance with the inventory
TSCA	: Product cor	ntains substance(s) not listed on TSCA inventory.
TECI	: Not in comp	pliance 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 SOCMI 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	V	
Water 7732-18-5		
Maine Chemicals of High Co	nc	ern
Product does not co	onta	ain any listed chemicals
Vermont Chemicals of High (Со	ncern
Product does not co	onta	ain any listed chemicals
Washington Chemicals of High	igh	Concern
Product does not co	onta	ain any listed chemicals
The ingredients of this produ	uct	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 com	pliance with the inventory
TCSI	: On the inve	entory, or in compliance with the inventory
TSCA	: Product co	ntains substance(s) not listed on TSCA inventory.
TECI	: Not in com	pliance 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	known CAS numbers that	ontain any chemical components with at exceed the threshold (De Minimis) ned 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 SOCMI Intermediate or Final VOC's (40 CFR 60.489): 25322-68-3

Poly(oxy-1,2ethanediyl), .alpha.hydro-.omega.-hydroxy>= 30 - < 50 %

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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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
Poly(oxy-1,2-ethanediyl), .alphahydroomegahydroxy-	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



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7647-01-0

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 SOCMI Intermediate or Final VOC's (40 CFR 60.489): >= 20 - < 30 %

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

25322-68-3

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 % 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

Pennsylvania Right To Know

Water	7732-18-5
Poly(oxy-1,2-ethanediyl), .alphahydroomegahydroxy-	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 invento	ory, or in compliance with the inventory
DSL	: All component	s of this product are on the Canadian DSL
NZIoC	: On the invento	ory, or in compliance with the inventory
ENCS	: On the invento	ory, or in compliance with the inventory
ISHL	: On the invento	ory, or in compliance with the inventory
KECI	: On the invento	ory, or in compliance with the inventory
PICCS	: On the invento	ory, or in compliance with the inventory
IECSC	: On the invento	ory, or in compliance with the inventory
TCSI	: On the invento	ory, or in compliance with the inventory
TSCA	: All substances	listed as active on the TSCA inventory
TECI	: Not in complia	nce 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).

KAPA LTP L	ibrary Preparat	tion Kit	
Version 3.0			Date of last issue: 10-11-2021 Date of first issue: 05-18-2016
The following			. Clean Air Act Section 111 SOCMI Intermedi-
	/OC's (40 CFR 60.489 /cerol	9): 56-81-5	>= 50 - < 70 %
Clean Water		oc are listed up	der the U.S. CleanWater Act, Section 311, Ta-
ble 116.4A:			
eth (ca	ycine, N,N'-1,2- nanediylbis[N- arboxymethyl)-	60-00-4	>= 0 - < 0.1 %
The following 117.3:	Hazardous Chemical	is are listed und	ler the U.S. CleanWater Act, Section 311, Table
eth	ycine, N,N'-1,2- nanediylbis[N- arboxymethyl)-	60-00-4	>= 0 - < 0.1 %
This product		toxic pollutants	listed under the U.S. Clean Water Act Section
307 This product	does not contain any	priority pollutan	ts related to the U.S. Clean Water Act
US State Re	gulations		
	etts Right To Know		
gly	/cerol		56-81-5
-	ia Right To Know		
	/cerol ater		56-81-5 7732-18-5
Maine Cherr	icals of High Concer	m	
Pr	oduct does not contair	n any listed che	micals
	emicals of High Con oduct does not contair		micals
-	Chemicals of High C oduct does not contair		micals
California P	ermissible Exposure	Limits for Che	emical Contaminants
gly	rcerol		56-81-5
-	-	-	the following inventories:
AIIC	: 1	Not in complian	ce with the inventory
DSL	(This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.	
	I	DNA-dependen	t DNA polymerase
	I	Polynucleotide	5'-hydroxyl kinase
NZIoC	: (On the inventor	y, or in compliance with the inventory
ENCS	: 1	Not in complian	ce with the inventory
ISHL	:	Not in complian	ce with the inventory
KECI	: 1	Not in complian	ce with the inventory

Roche



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PICCS	: Not in complianc	e with the inventory
IECSC	: Not in complianc	e with the inventory
TCSI	: On the inventory	, or in compliance with the inventory
TSCA	: All substances lis	sted as active on the TSCA inventory
TECI	: Not in complianc	e 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 SOCMI Intermediate or Final VOC's (40 CFR 60.489): >= 10 - < 20 %

glycerol

56-81-5

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- ethanediylbis[N-	60-00-4	>= 0 - < 0.1 %
(carboxymethyl)-		



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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-	60-00-4	>= 0 - < 0.1 %
ethanediylbis[N-		
(carboxymethyl)-		

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

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.

California Permissible Exposure Limits for Chemical Contaminants

glycerol		56-81-5
The ingredients of this produ	uct	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	e with the inventory
ISHL	: Not in compliance	e with the inventory
KECI	: Not in compliance	e with the inventory
PICCS	: Not in compliance	e with the inventory
IECSC	: Not in compliance	e with the inventory
TCSI	: Not in compliance	e with the inventory
TSCA	: Product contains	substance(s) not listed on TSCA inventory.
TECI	: Not in compliance	e 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 SOCMI 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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Versi 3.0	ion	Revision Date: 03-25-2022	Date of last issue: 10-11-2021 Date of first issue: 05-18-2016		
	Hydrochlor The following Hazard 117.3:		-0 >= 0 - < 0.1 % I under the U.S. CleanWater Act, Section 311, Table		
	Hydrochlor		>= 0 - < 0.1 % ants listed under the U.S. Clean Water Act Section		
	This product does not contain any priority pollutants related to the U.S. Clean Wate				
	US State Regulation	S			
	Massachusetts Righ Hydrochlor		7647-01-0		
	Pennsylvania Right Water Hydrochlor		7732-18-5 7647-01-0		
	Maine Chemicals of				
		es not contain any listed	l chemicals		
	Vermont Chemicals	-			
Product does not contain any listed chemicals Washington Chemicals of High Concern Product does not contain any listed chemicals					
	AIIC		pliance with the inventory		
	DSL		ct contains the following components that are not adian DSL nor NDSL.		
		Primer / O	igonucleotide / Probe		
	NZIoC	: On the inv	entory, or in compliance with the inventory		
	ENCS	: Not in com	pliance with the inventory		
	ISHL	: Not in com	pliance with the inventory		
	KECI	: Not in com	pliance with the inventory		
	PICCS	: Not in com	pliance with the inventory		
	IECSC	: Not in com	pliance with the inventory		
	TCSI	: Not in com	pliance with the inventory		
	TSCA	: Product co	ntains substance(s) not listed on TSCA inventory.		
	TECI	: Not in com	pliance 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 SOCMI 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- 60-00-4 >= 0 - < 0.1 %ethanediylbis[N-(carboxymethyl)-

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

>= 0 - < 0.1 %

Glycine, N,N'-1,2- 60-00-4 ethanediylbis[N-(carboxymethyl)-

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 Water	56-81-5 7732-18-5

Maine Chemicals of High Concern

Product does not contain any listed chemicals



KA	PA LTP Library	/ Prepara	tion Kit		
Vers 3.0	sion	Revision E 03-25-202		Date of last issue: 10-11-2021 Date of first issue: 05-18-2016	
	Vermont Chemicals	•			
			in any listed chemi	cals	
	Washington Chemic Product do	•	Concern in any listed chemi	cals	
	California Permissil	ble Exposur	Limits for Chem	ical Contaminants	
	glycerol			56-81-5	
	The ingredients of t	his product	are reported in th	e following inventories:	
	AIIC	:	Not in compliance	with the inventory	
	DSL	:		ains the following components listed o All other components are on the Cana	
			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 list	ed 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		es not contain any chemical components with bers that exceed the threshold (De Minimis)

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

reporting levels established by SARA Title III, Section 313.

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 SOCMI Intermediate or Final VOC's (40 CFR 60.489): >= 50 - < 70 %

56-81-5 glycerol

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A: 60-00-4 >= 0 - < 0.1 %

Glycine, N,N'-1,2ethanediylbis[N-(carboxymethyl)-

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

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

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 Water		56-81-5 7732-18-5
Maine Chemicals of High Conc	ern	
Product does not contain any listed chemicals		
Vermont Chemicals of High Co	ncern	
Product does not contain any listed chemicals		
Washington Chemicals of High	Concern	
Product does not contain any listed chemicals		
California Permissible Exposur	e 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 con Canadian NDSL. All other components DSL.	•



RAFA LIF LIDIALY FIEPALATION RIL				
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	DNA-depende	nt DNA polymerase		
NZIoC	: On the invento	ory, or in compliance with the inventory		
ENCS	: Not in complia	nce with the inventory		
ISHL	: Not in complia	nce with the inventory		
KECI	: Not in complia	nce with the inventory		
PICCS	: Not in complia	nce with the inventory		
IECSC	: Not in complia	nce with the inventory		
TCSI	: On the invento	ory, or in compliance with the inventory		

: Not in compliance with the inventory

: All substances listed as active on the TSCA inventory

TSCA list

TSCA

TECI

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/ atten- tion.

Kapa A-Tailing Buffer (10X)



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GHS label elements

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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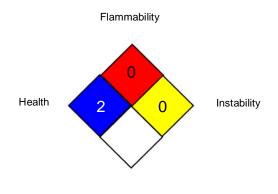
GHS label elements

Not a hazardous substance or mixture.

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



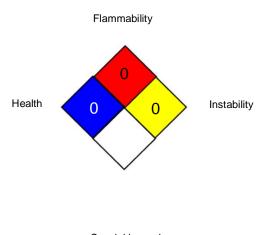
Special hazard

HMIS® IV:



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:



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.

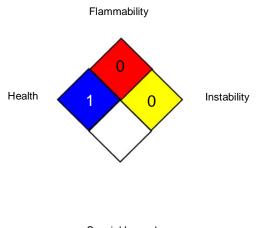
Special hazard



Version 3.0

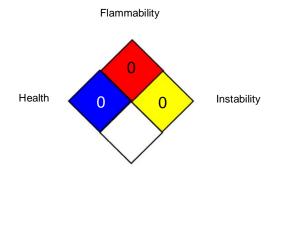
Revision Date: 03-25-2022

NFPA 704:



Special hazard

NFPA 704:



Special hazard

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HMIS® IV:



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:



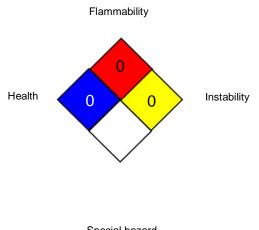
HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.



Version 3.0

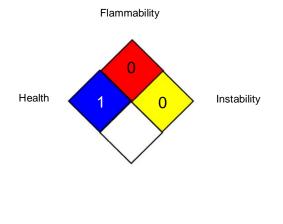
Revision Date: 03-25-2022

NFPA 704:



Special hazard

NFPA 704:



Special hazard

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HMIS® IV:



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HMIS® IV:



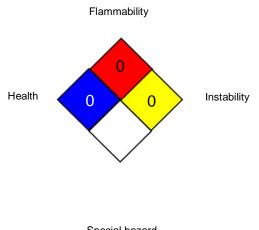
HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.



Version 3.0

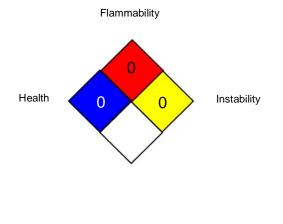
Revision Date: 03-25-2022

NFPA 704:



Special hazard

NFPA 704:



Special hazard

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

HMIS® IV:



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:



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:

Health



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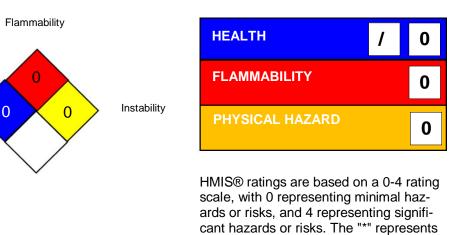
Revision Date: 03-25-2022

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

a chronic hazard, while the "/" represents

the absence of a chronic hazard.

HMIS® IV:



Special hazard

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: IECSC - 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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Revision Date

: 03-25-2022

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / Z8 / 2104