SAFETY DATA SHEET

Creation date:

July 23, 2019

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Code No.	: GenCheck [®] DNA Ex : GC002-1N	traction kit [Type S/F]
	Kit components:	 ①Lysis Solution M ②Lysis Solution S ③Purification Solution ④Wash Solution 1 ⑤Wash Solution 2 ⑥TE (pH8.0) ⑦RNase A (100mg/ml) ⑧Beads Tube ⑨Spin Column
Company Name Address Department Phone Number Fax Number	: FASMAC CO.,LTD : 5-1-3 Midorigaoka. A : Genetic Analysis Dir : +81-46-295-8787 : +81-46-294-3738	Atsugi-shi. Kanagawa. 243-0041 Japan vision

2. HAZARDS IDENTIFICATION

②Lysis Solution 20S (sodi	um dodecyl sulfate):			
GHS Classification:	Acute toxicity (dermal)	Category 3		
	Skin corrosion/irritation	Category 2		
	Eye damage/irritation	Category 1		
	Specific target organ systemic toxicity/single exposure	Category 1 (The CNS)		
	Specific target organ systemic toxicity/repeated exposure	Category 2 (Liver)		
	Hazardous to the aquatic environment -AcuteHazard	Category 2		
Hazard Symbols:	\wedge \wedge \wedge			
		Danger		
Hazards Identification:	H312 Harmful in contact with skin			
	H315 Causes skin irritation			
	H318 Causes serious eye damage			
	H370 Causes damage to organs			
	H373 May cause damage to organs through prolonged or	repeated exposure		
	H401 Toxic to aquatic life			
Precautions :				
[Prevention]	P260 Do not breathe dust/fume/gas/mist/vapours/spray			
	P264 Wash arms, hands and face thoroughly after handli			
	P270 Do not eat, drink or smoke when using this product	t		
	P273 Avoid release to the environment			
r1	P280 Wear protective gloves/protective clothing/eye prote			
[Response]	P310 IF IN EYES: Immediately call a POISON CENTER or doctor/physician.			
	P312 Call a POISON CENTER or doctor/physician if you	teel unwell		
	P302+P352 IF ON SKIN: Wash with soap and water			
	P308+P311 IF exposed or you feel unwell: Call a POISO	· ·		
	P332+P313 If skin irritation occurs: Get medical advice/			
	P362+P364 Take off contaminated clothing and wash it			
	P305+P351+P338 IF IN EYES: Rinse cautiously with wat			
[Storage]	Remove contact lenses if present and easy to do – continue P405 Store locked up	rmsing		
[Disposal]	P501 Dispose of contents and container in accordance with	th regulation		
[Dishosai]	1 551 Dispose of contents and container in accordance with	ui regulativii		

3 Purification Solution (he	exadecyltrimethylammonium bromide Mixture):				
GHS Classification:	Skin corrosion/irritation	: Category 3			
	Eye damage/irritation	Category 2A			
	Toxic to reproduction	Category 2			
	Specific target organ systemic toxicity/single exposure				
	(heart, the haemal system)	Category 2			
	Hazardous to the aquatic environment –Acute Hazard	Category 1			
	Hazardous to the aquatic environment –Chronic Hazard	Category 1			
Hazard Symbols:					
		Warning			
		8			
Hazards Identification :	H316 Causes mild skin irritation				
	H319 Causes serious eye irritation				
	H361 Suspected of damaging fertility or the unborn chil	d			
	H371 May cause damage to organs (heart, the haemal s	ystem)			
	H400 Very toxic to aquatic life				
-	H410 Very toxic to aquatic life with long lasting effects				
Precautions:					
[Prevention]	P201 Obtain special instructions before use	on mood and understand			
	P202 Do not handle until all safety precautions have be P260 Do not breathe dust/fume/gas/mist/vapours/spray	en read and understood			
	P264 Wash arms, hands and face thoroughly after hand	ling			
	P270 Do not eat, drink or smoke when using this produ				
	P273 Avoid release to the environment				
	P280 Wear protective gloves/protective clothing/eye pro	tection/face protection			
[Response]	P391 Collect spillage	-			
	P308+P311 If exposed or concerned: Call a POISON CENTER or doctor/physician				
	P332+P313 If skin irritation occurs: Get medical advice/attention				
	P337+P313 If eye irritation persists get medical advice/attention				
	P305+P351+P338 IF IN EYES: Rinse cautiously with wa				
	Remove contact lenses if present and easy to do – continu	e rinsing			
[Storage] [Disposal]	P405 Store locked up P501 Dispose of contents and container in accordance w	ith regulation			
[DIsposal]	1 501 Dispose of contents and container in accordance w	itii regulation			
4 Wash Solution 1:					
GHS Classification:	Acute toxicity (oral)	: Category 4			
	Skin corrosion/irritation	Category 2			
	Eye damage/irritation	Category 2A			
Hazard Symbols:					
		Warning			
		Warming			
Hazards Identification:	H302 Harmful if swallowed				
mazarus menuncation.	H315 Causes skin irritation				
	H319 Causes eye irritation				
Precautions :					
[Prevention]	P264 Wash arms, hands and face thoroughly after hand	ling.			
	P270 Do not eat, drink or smoke when using this produ				
	P280 Wear protective gloves/protective clothing/eye pro	tection/face protection			
[Response]	P330 IF SWALLOWED: Rinse mouth				
	P301+P312 IF SWALLOWED: Call a POISON CENTER	t or doctor/physician if you			
	feel unwell				
	P302+P352 IF ON SKIN: Wash with soap and water				
	P332+P313 If skin irritation occurs: Get medical advice				
	P337+P313 If eye irritation persists get medical advice/a P362+P364 Take off contaminated clothing and wash i				
	P305+P351+P338 IF IN EYES: Rinse cautiously with wa				
	Remove contact lenses if present and easy to do – continu				
[Disposal]	P501 Dispose of contents and container in accordance w				

⁽⁵⁾ Wash Solution 2 (ethano	b]):	
GHS Classification:	Highly flammable liquid and vapour Eye damage/irritation Carcinogenicity Toxic to Reproduction Specific target organ systemic toxicity/Single exposure (Respiratory system, Anesthetic action) Specific target organ systemic toxicity/Repeated exposure	 Category 2 Category 2B Category 1A Category 1A Category 3 Category 1 (Liver) Category 2 (The CNS)
Hazard Symbols:		Danger
Hazards Identification :	 H225 Highly flammable liquid and vapour H320 Causes eye irritation H335 May cause respiratory irritation H336 May cause drowsiness or dizziness H350 May cause cancer H360 May damage fertility or the unborn child H372 Causes damage to organs through prolonged or repe H373 May cause damage to organs through prolonged or r 	
Dressentions :	(The CNS)	
Precautions : [Prevention]	 P201 Obtain special instructions before use P202 Do not handle until all safety precautions have been P210 Keep away from heat/sparks/open flames/hot surface P233 Keep container tightly closed P240 Ground/bond container and receiving equipment P241 Use explosion-proof electrical/ventilating/light//eq P242 Use only non-sparking tools P243 Take precautionary measures against static dischars P260 Do not breathe dust/fume/gas/mist/vapours/spray P264 Wash hands thoroughly after handling P270 Do not eat, drink or smoke when using this product P271 Use only outdoors or in a well-ventilated area P280 Wear protective gloves/protective clothing/eye protect P312 IF INHALED:Call a POISON CENTER or doctor/ph P314 Get Medical advice/attention if you feel unwell P304+P340 IF INHALED: Remove victim to fresh air and comfortable for breathing P308+P313 If exposed or concerned: Get medical advice/at P370+P378 In case of fire: if water increases risk ,use for P303+P361+P353 IF ON SKIN (or hair): Remove/Take off i clothing. Rinse skin with water/shower P305+P351+P338 IF IN EYES: Rinse cautiously with wate Remove contact lenses if present and easy to do – continue 	es - No smoking uipment ge etion/face protection ysician if you feel unwell d keep at rest in a position attention tention extinction appropiate media ummediately all contaminated er for several minutes.
[Storage]	P405 Store locked up P403+P233 Store in a well ventilated place. Keep contain P403+P235 Store in a well ventilated place. Keep cool	-
[Disposal]	P501 Dispose of contents and container in accordance with	h regulation
 Beads Tubes (Zirconia si GHS Classification: Symbol: Signal word: Physical hazards: Health hazards: Environmental hazards: 		-

3. COMPOSITION / INFORMATION ON INGREDIENTS

①Lysis Solution M

Single Product/Mixture Classification: Mixture

Common/Chemical Name	Content	Chemical Formula	CAS Number	Hazardous Ingredient
Trade secret	Nondisclosure	Nondisclosure	Nondisclosure	None

⁽²⁾Lysis Solution 20S

Single Product/Mixture Classification: Mixture

Common/Chemical Name	Content	Chemical Formula	CAS Number	Hazardous Ingredient
Sodium dodecyl sulfate	$<\!25\%~({ m w/v})$	C12H25SO4Na	151-21-3	Sodium dodecyl sulfate

③Purification Solution

Single Product/Mixture Classification: Mixture

Common/Chemical Name	Content	Chemical Formula	CAS Number	Hazardous Ingredient
Hexadecyltrimethylammonium bromide	< 10% (w/v)	C19H42BrN	57-09-0	CTAB
Trade secret	Nondisclosure	Nondisclosure	Nondisclosure	Nondisclosure

(4)Wash Solution 1

Single Product/Mixture Classification: Mixture

Common/Chemical Name	Content	Chemical Formula	CAS Number	Hazardous Ingredient
Trade secret	<80% (_{w/v})	Nondisclosure	Nondisclosure	Nondisclosure

5 Wash Solution 2

Single Product/Mixture Classification: Mixture

Common/Chemical Name	Content	Chemical Formula	CAS Number	Hazardous Ingredient
Ethanol	>60% (v/v)	C2H6O	64-17-5	Ethanol

@TE (pH8.0)

Single Product/Mixture Classification: Mixture

Common/Chemical Name	Content	Chemical Formula	CAS Number	Hazardous Ingredient
Tris-HCl (pH8.0)	10mM	Not available	Not available	None
EDTA	1mM	Not available	Not available	None

$\textcircled{O}RNase\,A~(100\,mg/ml)$

Single Product/Mixture Classification: Mixture

Common/Chemical Name	Content	Chemical Formula	CAS Number	Hazardous Ingredient
RNase A	100mg/ml	Not available	Not available	None

 $\otimes Beads$ Tube

Single Product/Mixture Classification: Mixture

Common/Chemical Name	Content	Chemical Formula	CAS Number	Hazardous Ingredient
Zirconium oxide	$90 \sim 96\%$	ZrO2	1314-23-4	Zirconium oxide
Yttrium oxide	$3\sim\!7\%$	Y2O3	1314-36-9	Yttrium oxide
Hafnium oxide	$1 \sim 3\%$	HfO2	12055-23-1	Hafnium oxide

4. FIRST AID MEASURES

Necessary measures against various exposure types

Inhalation	: Remove from exposure area to fresh air immediately. Get medical attention if adverse health effects persist or are severe.
Skin Contact	: Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains. Get medical attention if adverse health effects persist or are severe.
	: ②③: Remove contaminated clothing immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains. Get medical attention.
Eye Contact	 Wash eyes immediately with large amounts of water for at least 15 minutes. Get medical attention if adverse health effects persist or are severe. ②③④: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing Get medical attention.
Ingestion	: Wash mouth out with water. Get medical attention.

lost important symptoms/eff	
Inhalation	: ②: Pharyngalgia, cough
	5: Cough, headache, fatigue, lethargy
Skin	: ②: Redness
	5: Defatting of the skin
Eye	: ②: Redness, pain
	5: Reddening, painful stimulation, burning sensation
Ingestion	: ②: Nausea, vomiting, diarrhea
	5: burning sensation, headache, excitement, dizziness, unconsciousness
Most important symptoms	: ②: May cause dermatitis.
	5: May cause central nervous system effects.
	May cause irritation, headache, fatigue, or inability to concentrate.
	Prolonged or repeated exposure may cause adverse reproductive effects.
	Prolonged or repeated exposure may cause cirrhosis of the liver.

5. FIRE FIGHTING MEASURES

Extinguishing Media Banned Extinguishing Media Specific Hazards	 Powder, alcohol-resistant foam, carbon dioxide, dry sand, water spray (4)(5): Solid stream jets In case of fire, toxic and corrosive vapors or fumes may be formed. Wear suitable protection to avoid inhalation. (5): Very flammable Containers may explode in the heat of a fire. Vapors may form an explosive mixture with air. In case of fire, toxic and corrosive vapors or fumes may be formed.
Special Fire Fighting Procedu	
	 : Use media suitable to extinguish source of fire. Extinguish the fire from the windward side of the fire. Perform the proper operation to prevent dispersion of material that influences environmental conditions. : (5): For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Move containers if it can be done without risk Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. Continue cooling containers after fire is out
Protective Measures in Fire	 The fire fighting should be done from the windward side to avoid inhalation of toxic gas, with suitable respiratory protective device, if necessary 5: Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Persona	al Protection, and Emergency Equipment	
	: Wear appropriate personal protective equipment as specified in [8. Exposure	
	control / Personal protection] to avoid inhalation and contact with skin and eyes.	
Do not touch containers or spillage without proper protection.		
	Ventilate area of leak or spill.	
	Isolate the hazard area and deny entry to unnecessary and unprotected personnel.	
	Stay in windward side.	
	Move away from low land area.	
Environmental Precautions	: Do not release to the environment.	
Methods and materials for con	ntainment and cleaning up	
	: Clean spill area completely with floorcloth or the like.	
	: (5): Absorb spills with absorbent (vermiculite, sand, fuller's earth) and place in properly labeled containers for later disposal. Antistatic (non-sparking) tools should be used when collecting the absorbent.	

7. HANDLING AND STORAGE

Handling	
Technical Measures	: Wear proper equipment and take measures according to [8. Exposure control/
	Personal protection].
Local exhaust ventilation	n system/general ventilation
	: Ventilate according to [8. Exposure control / Personal protection].
Precaution	: Do not leak, overflow and scatter.
	Seal tightly after use.
	Wash hands and face and rinse mouth thoroughly after handling.
	Handle in a specially designated area where no eating or drinking is allowed.
	Avoid nonessential personnel from entering the handling area.
	Handle container with enough care not to damage container.
	Wear proper protective clothing and shoes.
	Do not release the product to the environment
	: (5): Do not handle until all safety precautions have been read and understood.
	Prohibit the use of high temperature materials, spark, and fire around the
	product.
	Handle container with enough care not to damage container.
	Do not breathe mist, vapor, or spray.
	Wash hands thoroughly after handling.
	Avoid contact with eyes.
	Avoid inhalation and ingestion
	Use only in a well-ventilated area or outdoors.
Incompatible Contacts	: See 10. STABILITY AND REACTIVITY
Storage	
Storage Condition	: Store at room temperature.
Technical Measures	: (5): Keep away from source of ignition
Incompatible Materials for	•
	: See 10. STABILITY AND REACTIVITY
Material of Container	: High density polyethylene, polypropylene

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Biological limit values	
ACGIH	: Not established
JSOH	: Not established
Engineering Measures	: Provide local exhaust ventilation if generating vapor, dust, or mist.
Appropriate engineering co	ntrols
	: Handle in accordance with good industrial hygiene and safety practice.
	Wash hands before breaks and at the end of workday.
Personal protective equipm	ent
Respiratory protection	: Protective mask
Hand protection	: Suitable impervious gloves.
Eye protection	: Suitable safety glasses (goggles)
Skin protection	: Protective clothing (long sleeved)

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, Color etc)			
	: Colorless liquid		
Odor	: Odorless		
рН	: Not available		
Melting point / freezing point : Not available			
Initial boiling point and boiling range			
	: Not available		
Flash point	: Not available		
Upper/lower flammability or explosion limits			
	: Not available		
Vapor pressure	: Not available		

(8):White powder(3):Acetic-acid odor(6):pH8.0

 $\textcircled{5}{E}thanol\,odor$

Relative density Solubility Partition coefficient (n-octano	: Not available : Miscible in water //water)	③:Insolubility	
Autoignition temperature Decomposition temperature	: Not available : Not available : Not available		

10. STABILITY AND REACTIVITY

Reactivity	: Not available		
Chemical stability	: Stable under proper storage conditions and handling		
Possibility of hazardous reac	tions		
	: ②: Generates carbon monoxide or sulfur oxide gas when combusted		
	Reactive with strong oxidizing agents and strong acids		
	5: Vapors may form an explosive mixture with air.		
	Risk of explosion in presence of calcium hypochlorite, silver oxide, and/or		
	ammonia.		
	Degrades certain types of plastic, rubber, and coating agents		
Conditions to avoid	: Light, heat (5): Exposure to high temperature		
Incompatibilities	: ②: Strong oxidizing agents, Strong acids		
	5: Strong oxidizing agents, calcium hypochlorite, silver oxide, ammonia		
Hazardous decomposition pro	oducts		
	: Carbon monoxide, carbon dioxide		
	: \textcircled{O} : Corrosive and toxic gases including carbon monoxide and sulfur oxide.		

11. TOXICOLOGICAL INFORMATION

②Lysis Solution 20S (sodium dodecyl sulfate):

A	1 0 1 1 1	TD _1000/l	$(\mathbf{T}\mathbf{I}_1, \dots, \mathbf{I}_{n-1}, \mathbf{I}_{n-1}, \mathbf{C} < \mathbf{O}\mathbf{T}\mathbf{O}(\mathbf{I})$	NT. (. 1
Acute Toxicity	: Oral [rat]	LD ₅₀ =1200mg/kg		Not classified
	: Dermal [rabbit]	LD ₅₀ =200mg/kg	(The content of ${<}25\%$)	Category 3
	: Inhalation			Not available
Skin Corrosion / Irritation		y irritating"		Category 2
Eye Damage / Irritation		e data of an irrevers	sible symptom	Category 1
Respiratory or Skin Sensitizat				
Respiratory Sensitization				
Skin Sensitization	: No sensitisation	*		Not classified
Germ Cell Mutagenicity	: There is no indic	cation of mutagenici	ity .	Not classified
Carcinogenicity	: Not available			
Toxic to reproduction	: Not available			
Specific Target Organ System	ic Toxicity/Single Ex	posure		
	: The rabbit cause	d convulsions, dysp	nea by an examination. C	ategory 1 (The CNS)
Specific Target Organ System	ic Toxicity/Repeated	Exposure		
	: The rat was affe	cted by liver by an e	examination (Category 2 (Liver)
	· Ino Iao mao ano	ood of million of an i		allogory = (mrtor)
Aspiration Hazard	: Not available			
-	: Not available			
Purification Solution (hexade	: Not available cyltrimethylammon	ium bromide Mixtu		
-	: Not available ecyltrimethylammon : Oral [rat]			Not classified
Purification Solution (hexade	: Not available ecyltrimethylammon : Oral [rat] : Dermal	ium bromide Mixtu		Not classified Not available
) Purification Solution (hexade Acute Toxicity	: Not available ecyltrimethylammon : Oral [rat] : Dermal : Inhalation	ium bromide Mixtu LD ₅₀ >5000mg/kg	re):	Not classified Not available Not available
Purification Solution (hexade	: Not available ecyltrimethylammon : Oral [rat] : Dermal : Inhalation : CTAB : rat 「ir.	ium bromide Mixtu LD ₅₀ >5000mg/kg ritation :Category 2	re): The content of $< 10\%$:	Not classified Not available Not available Category 3J
)Purification Solution (hexade Acute Toxicity Skin Corrosion / Irritation	 Not available ecyltrimethylammon Oral [rat] Dermal Inhalation CTAB : rat 「ir trade secret : rai 	ium bromide Mixtu LD ₅₀ >5000mg/kg ritation :Category 2 bbit 「slightly irrit	re): The content of <10% : ating :Category 3」	Not classified Not available Not available Category 3」 Category 3
) Purification Solution (hexade Acute Toxicity	 Not available ecyltrimethylammon Oral [rat] Dermal Inhalation CTAB : rat fir.trade secret : radius CTAB : rabbit 	ium bromide Mixtu LD ₅₀ >5000mg/kg ritation :Category 2 bbit 「slightly irrit 「irritation :Categor	re): The content of <10% : ating :Category 3」 ry 2A The content of<10	Not classified Not available Not available Category 3 Category 3
)Purification Solution (hexade Acute Toxicity Skin Corrosion / Irritation	 Not available ecyltrimethylammon Oral [rat] Dermal Inhalation CTAB : rat fir. trade secret : rat CTAB : rabbit trade secret : ra 	ium bromide Mixtu LD ₅₀ >5000mg/kg ritation :Category 2 bbit 「slightly irrit 「irritation :Categor bbit 「slightly irrit	re): The content of <10% : ating :Category 3」 y 2A The content of<10 ating :Category 2B」	Not classified Not available Not available Category 3J Category 3 % :Not classifiedJ
Purification Solution (hexade Acute Toxicity Skin Corrosion / Irritation Eye Damage / Irritation	 Not available ecyltrimethylammon Oral [rat] Dermal Inhalation CTAB : rat 「ir: trade secret : ra CTAB : rabbit trade secret : ra CTAB + trade secret 	ium bromide Mixtu LD ₅₀ >5000mg/kg ritation :Category 2 bbit 「slightly irrit 「irritation :Categor	re): The content of <10% : ating :Category 3」 y 2A The content of<10 ating :Category 2B」	Not classified Not available Not available Category 3 Category 3
)Purification Solution (hexade Acute Toxicity Skin Corrosion / Irritation	 Not available ecyltrimethylammon Oral [rat] Dermal Inhalation CTAB : rat 「ir: trade secret : rat CTAB : rabbit trade secret : rat CTAB + trade settion 	ium bromide Mixtu LD ₅₀ >5000mg/kg ritation :Category 2 bbit 「slightly irrit 「irritation :Categor bbit 「slightly irrit	re): The content of <10% : ating :Category 3」 y 2A The content of<10 ating :Category 2B」	Not classified Not available Not available Category 3J Category 3 % :Not classifiedJ
Purification Solution (hexade Acute Toxicity Skin Corrosion / Irritation Eye Damage / Irritation Respiratory or Skin Sensitizat	 Not available ecyltrimethylammon Oral [rat] Dermal Inhalation CTAB : rat 「ir: trade secret : rat CTAB : rabbit trade secret : rat CTAB + trade settion Not available 	ium bromide Mixtu LD ₅₀ >5000mg/kg ritation :Category 2 bbit 「slightly irrit 「irritation :Categor bbit 「slightly irrit	re): The content of <10% : ating :Category 3」 y 2A The content of<10 ating :Category 2B」	Not classified Not available Not available Category 3J Category 3 % :Not classifiedJ
Purification Solution (hexade Acute Toxicity Skin Corrosion / Irritation Eye Damage / Irritation Respiratory or Skin Sensitizat Germ Cell Mutagenicity	 Not available ecyltrimethylammon Oral [rat] Dermal Inhalation CTAB : rat 「ir: trade secret : ra CTAB : rabbit trade secret : ra CTAB + trade setion Not available Not available 	ium bromide Mixtu LD ₅₀ >5000mg/kg ritation :Category 2 bbit 「slightly irrit 「irritation :Categor bbit 「slightly irrit	re): The content of <10% : ating :Category 3」 y 2A The content of<10 ating :Category 2B」	Not classified Not available Not available Category 3 Category 3 % :Not classified
Purification Solution (hexade Acute Toxicity Skin Corrosion / Irritation Eye Damage / Irritation Respiratory or Skin Sensitizat	 Not available ecyltrimethylammon Oral [rat] Dermal Inhalation CTAB : rat 「ir: trade secret : ration CTAB : rabbit trade secret : ration CTAB + trade settion Not available Not available Not available Not available 	ium bromide Mixtu LD ₅₀ >5000mg/kg ritation :Category 2 bbit 「slightly irrit 「irritation :Categor bbit 「slightly irrit ccret: (The content o	re): The content of <10% : ating :Category 3」 y 2A The content of<10 ating :Category 2B」	Not classified Not available Not available Category 3 Category 3 % :Not classified

Specific Target Organ System				
	: CTAB : [Effects the haemal system and heart: Category 1] (The content of < 10%) Cat			
Specific Torget Orgen System	(The content of < 10%) Category 2 emic Toxicity/Repeated Exposure			
Specific Target Organ System	: Not available	xposure		
Aspiration Hazard	: Not available			
Aspiration Hazard	. Not available			
(4) Wash Solution 1:				
Acute Toxicity	: Oral	$ m LD_{50}{<}2000~mg/kg$	Category4	
	: Dermal	$ m LD_{50}\!>\!5000~mg/kg$	Not classified	
	: Inhalation	$ m LC_{50}{>}5.0~mg/L$	Not classified	
Skin Corrosion / Irritation	:rabbit 「highly irr	-	Category2	
Eye Damage / Irritation	: rabbit <i>[irritating]</i>		Category2A	
Respiratory or Skin Sensitiza				
	: Not available			
Germ Cell Mutagenicity	: Not available			
Carcinogenicity	: Not available			
Toxic to Reproduction	: Not available			
Specific Target Organ System		sure		
	: Not available			
Specific Target Organ System		xposure		
	: Not available			
Aspiration Hazard	: Not available			
(4) Wash Solution 2:(Ethanol):				
Acute Toxicity	: Oral [rat]	$ m LD_{50}\!>\!5,\!000 m mg/kg$	Not classified	
	: Dermal[Rabbit]	LDLo=20,000 mg/kg bw	Not classified	
	: Inhalation (vapor)	$[rat] LC_{50} > 20,000 ppmV(4h)$	Not classified	
Skin Corrosion / Irritation	: [rabbit] Not irr	ritating	Not classified	
Eye Damage / Irritation	: [rabbit] "Mode	rate irritating" The effects listed above ar	e fully recovered	
	within 7 days of observat. Category2B			
Respiratory or Skin Sensitiza	tion			
	: Not available			
Germ Cell Mutagenicity	: There is no indicat		Not classified	
Carcinogenicity	: Ethanol causes a malignant tumor for the esophagus.		Category1A	
Toxic to Reproduction		fects on development of the offspring.	Category1A	
Specific Target Organ System				
	: May cause drowsir			
	May cause respira	•	Category3	
Specific Target Organ System				
	: Causes damage to	liver through prolonged or repeated expos		
	Mar Carran da un		tegory1(Liver)	
	. May Gauses dama	ge to the CNS through prolonged or repeat	-	
Aspiration Hazard	: Not available	Ca	tegory2(The CNS)	
Appration mazaru	. INOU AVAIIADIE			

12. ECOLOGICAL INFORMATION

⁽²⁾ Lysis Solution 20S (sodium do	decyl sulfate):
Toxicity	: Crustaceans (Acartia) EC ₅₀ /LC ₅₀ =0.12mg/L/96H
	(The content of $<25\%$) The aquatic environment acute hazard : Category 2
Persistence and Degradability	: High degradability (BOD=85.0% TOC= 99.3%)
Bioaccumulative potential	: Crustaceans (stoop water flea) NOEC=0.88mg/L
	The aquatic environment chronic hazard : Not classified
Mobility in soil	: Not available
Hazard to the ozone layer	: Not available
Other hazard information	: Not available
⁽³⁾ Purification Solution (hexaded	vltrimethylammonium bromide Mixture):

B)Purification Solution (hexadecy) rimethylammonium bromide Mixture) Toxicity

: Cyanobacteria (*Microcystis*) EC₅₀=0.03mg/L/96H

Persistence and Degradability	: No degradability potential (0% by BOD)
Bioaccumulative potential	: Indication of bioaccumulation potential (BCF=741)
	EC ₅₀ <1mg/L, BCF>500, thus, chronic aquatic hazard is classified as Category 1
Mobility in soil	: Not available
Hazard to the ozone layer	: Not available
Other hazard information	: Not available
	. Not available
Wash Solution 1 :	
Toxicity	: Not available
Persistence / Degradability	: Not available
Bioaccumulative potential	: Not available
Mobility in soil	: Not available
Hazard to the ozone layer	: Not available
Other hazard information	: Not available
⑤Wash Solution 2:(Ethanol):	
Toxicity	: Algae (Chlorella) EC50 = 1000 mg/L/96 h : Not classified
Persistence and Degradability	: High degradability 89%byBOD
Bioaccumulative potential	: Crustacea(A kind of Ceriodaphnia) NOEC=9.6mg/L/10d
-	Chronic aquatic hazard is not classified as hazardous for rapid degradability potential and no bioaccumulation potential.
Mobility in soil	: Not available
Hazard to the ozone layer	: Not available
Other hazard information	: Not available

13. DISPOSAL CONSIDERATIONS

Hazardous Waste	: Dissolve or mix the material with a combustible solvent and burn in a chemical
	incinerator equipped with an afterburner and scrubber.
	Any disposal practice must be in compliance with country, local, state, and
	federal laws and regulations (contact country, local or state environmental agency for specific rules).
	Contact a licensed professional waste disposal service to dispose of this material
	if the above procedure is not operatable.
Contaminated Container ar	nd Packaging
	: Retaining product residue must be completely removed before dispose.

14. TRANSPORT INFORMATION

Basic classification information for the transporting/shipment		
UN Number	: 3082	
Chemical Name	: Environmentally hazardous substance, liquid, n.o.s.	
	(Hexadecyltrimethylammonium Bromide Mixture)	
Hazard Category	: Class 9	
Package Type	: PGIII	
Marine Pollutant	: applicable	
UN Number	: 1170	
Chemical Name	: Ethanol solution	
Hazard Category	: Class 3	
Package Type	: PG II	
Marine Pollutant	: Not applicable	
International regulations		
Land	: Controlled under ADR/RID's regulations.	
Sea	: Controlled under IMDG's regulations.	
Air	: Controlled under IATA's regulations.	
Additional Information	 Keep container out of direct sunlight and avoid any damage onto container during transport. Do not transport with food and feedstuffs. Do not load heavy container onto the material. Retention of the yellow card is required at the time of transfer. 	

15. REGULATORY INFORMATION

Follow all the relevant local, state, and federal laws and regulations in your country.

16. OTHER INFORMATION

\cdot Reference

NITE Chemical Risk Information Platform (NITE-CHRIP) https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop SDS supplied by the supplier, etc.

The above information is believed to be correct to be the best of our knowledge and information but do not purport to be all inclusive and shall be used only as a guide. This product is intended to be used by expert persons having chemical knowledge and skill, at their own discretion and we shall not be held liable for any damage-resulting from handling or from contact with the above material.