KKURABO

SAFETY DATA SHEET

QuickGene-AutoS RNA Virus Kit (AS-RV)

Name of substance	Classification acc. to GHS	Pictograms
Lysis Buffer LRV-01	Acute Tox. 4: H302	\land
	Skin Irrit. 2: H315	
	Eye Irrit. 2: H319	\sim
Wash Buffer WRV-S1	Flam. Liq. 2: H225	
	Eye Irrit. 2A: H319	
	Carc. 1A: H350	$\land \land \land$
	Repr. 1A: H360	
	STOT SE 3: H335, H336	
	STOT RE 1: H372	
	STOT RE 2: H373	
Solubilization Buffer		
SRV-01		
Elution Buffer CRV-S1		
Ethanol	Flam. Liq. 2: H225	
	Eye Irrit. 2B: H320	
	Carc. 1A: H350	$\land \land \land$
	Repr. 1A: H360	
	STOT SE 3: H335, H336	
	STOT RE 1: H372	
	STOT RE 2: H373	

KURABO INDUSTRIES LTD.

Bio-Medical Department

Address

Telephone Number FAX Number Advanced Technology Center 2F 14-30 Shimokida-Cho, Neyagawa, Osaka 572-0823, Japan +81-72-820-3079 +81-72-820-3095

Date of issue 11/04/2020

	Safety Data Sheet	
dentification of the substance/mixture and of the company/undertaking		
Product identifier:		
Product name:	Lysis Buffer	
Product code:	LRV-01	
SDS NO:	LRV01_JPE_1	
Details of the supplier of the safety dat	ta sheet	
Manufacturer/Supplier:	KURABO INDUSTRIES LTD.	
Address:	Advanced Technology Center, 14-30 Shimokida-cho, Neyagawa, Osaka, 572-0823 JAPA	
Division:	Bio-Medical department	
Telephone number:	+81-72-820-3079	
FAX:	+81-72-820-3095	
Relevant identified uses of the substar	nce or mixture and uses advised against	
Relevant identified uses of the produc	ct: Reagents for automated nucleic acid isolation system	
Uses advised against: For research us	se only	
lazards identification		
GHS classification and label elements o	•	
Classification of the substance or mixtu		
HEALTH HAZARDS	Acute toxicity Oral: Category 4	
	Skin corrosion/irritation: Category 2	
	Serious eye damage/eye irritation: Category 2	
	$\langle 0 \rangle$	
Signal word:	Warning	
Signal word: HAZARD STATEMENT	Warning	
-		
HAZARD STATEMENT	d	
HAZARD STATEMENT H302 Harmful if swallowed	d on	
HAZARD STATEMENT H302 Harmful if swallowed H315 Causes skin irritatio	d on irritation	
HAZARD STATEMENT H302 Harmful if swallowed H315 Causes skin irritatio H319 Causes serious eye	d on irritation	
HAZARD STATEMENT H302 Harmful if swallowed H315 Causes skin irritatio H319 Causes serious eye PRECAUTIONARY STATE Prevention	d on irritation	
HAZARD STATEMENT H302 Harmful if swallowed H315 Causes skin irritatio H319 Causes serious eye PRECAUTIONARY STATE Prevention	d on irritation EMENT parts thoroughly after handling.	
HAZARD STATEMENT H302 Harmful if swallower H315 Causes skin irritatio H319 Causes serious eye PRECAUTIONARY STATE Prevention P264 Wash contaminated	d irritation EMENT parts thoroughly after handling. ves.	
HAZARD STATEMENT H302 Harmful if swallowed H315 Causes skin irritation H319 Causes serious eye PRECAUTIONARY STATE Prevention P264 Wash contaminated P280 Wear protective glow P280 Wear eye protection	d irritation EMENT parts thoroughly after handling. ves.	
HAZARD STATEMENT H302 Harmful if swallowed H315 Causes skin irritation H319 Causes serious eye PRECAUTIONARY STATE Prevention P264 Wash contaminated P280 Wear protective glow P280 Wear eye protection	d on irritation EMENT parts thoroughly after handling. ves. n/face protection.	
HAZARD STATEMENT H302 Harmful if swallowed H315 Causes skin irritation H319 Causes serious eye PRECAUTIONARY STATE Prevention P264 Wash contaminated P280 Wear protective glow P280 Wear eye protection P270 Do not eat, drink or Response	d on irritation EMENT parts thoroughly after handling. ves. n/face protection.	
HAZARD STATEMENT H302 Harmful if swallowed H315 Causes skin irritatio H319 Causes serious eye PRECAUTIONARY STATE Prevention P264 Wash contaminated P280 Wear protective glov P280 Wear eye protection P270 Do not eat, drink or Response P302 + P352 IF ON SKIN	d on irritation EMENT parts thoroughly after handling. ves. n/face protection. * smoke when using this product.	
HAZARD STATEMENT H302 Harmful if swallowed H315 Causes skin irritatio H319 Causes serious eye PRECAUTIONARY STATE Prevention P264 Wash contaminated P280 Wear protective glo P280 Wear eye protection P270 Do not eat, drink or Response P302 + P352 IF ON SKIN: P332 + P313 If skin irritat	d on irritation EMENT parts thoroughly after handling. ves. n/face protection. * smoke when using this product.	
HAZARD STATEMENT H302 Harmful if swallowed H315 Causes skin irritation H319 Causes serious eye PRECAUTIONARY STATE Prevention P264 Wash contaminated P280 Wear protective glow P280 Wear eye protection P270 Do not eat, drink or Response P302 + P352 IF ON SKIN P332 + P313 If skin irritat P362 + P364 Take off con	d on irritation EMENT parts thoroughly after handling. ves. n/face protection. • smoke when using this product. : Wash with plenty of soap and water. tion occurs: Get medical advice/attention.	

P330 Rinse mouth.

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

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

Disposal

P501 Dispose of contents/container in accordance with local/national regulation.

3. Composition/information on ingredients Mixture/Substance selection

Mixture

Ingredient name	Content(%)	CAS No.
guanidinium thiocyanate	30-40	50-01-1
hydrochloride salts of aminoalcohol	1-5	-
Water	Balance	7732-18-5

Note : The figures shown above are not the specifications of the product.

Generally chemical substances greater than 1% of the total are listed.

4. First-aid measures

Descriptions of first-aid measures	Rescuers should wear proper personal protective equipment suitable for situation
IF INHALED	Remove person to fresh air and keep comfortable for breathing.
	Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN(or hair)	Remove contaminated clothing. Wash with plenty of soap and water.
	If skin irritation occurs: Get medical advice/attention.
IF IN EYES	Rinse cautiously with water for several minutes. Remove contact lenses,
	if present and easy to do. Continue rinsing.
	If eye irritation persists: Get medical advice/attention.
IF SWALLOWED	Rinse mouth.
	Call a POISON CENTER or doctor/physician if you feel unwell.

5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	Carbon dioxide, dry chemical and protein based foam.
Extinguishing media to avoid	None.
Special fire fighting	Keep personnel removed from and upwind of fire. Water runoff can damage
	the environment.
Procedures	Dike and collect water used to fight fire Evacuate area and fight fire from a safe
	distance.
Protection of fire-fighters	Wear adequate personal protective equipment.

6. Accidental release measures

Personnel precautions, protective equipment and emergency measures

Wear adequate personal protective equipment, see Section 8 (Exposure Controls/Personal Protection)

Environmental precautions

Prevent from entering into soil, waterways and ground water.

Clean-up methods and materials and containment measures

Spills should be contained by, and covered with suitable absorbent material and removed for disposal.

Precautions for safe handling		
Handling	Technicalmeasures	Avoid contact with skin, eyes and clothing. Wash hands after handling.
	Local and general ventilation	Use only with adequate ventilation.
	Precautions	See Section 8 (Exposure Controls/Personal Protection).
	Safehandling advice	See Section 10 (Stability and reactivity).
Storage	Suitable storage conditions	Protect from sunlight. Keep container tightly closed.
	Safepackagingmaterials	Use plastic container that have enough toughness.

8. Exposure controls/personal protection

Engineering measures

Evacuate and ventilate spill area. Provide easy access to water supply and eye wash facilities.

Personal protective equipment	
Respiratory protection	Wear suitable respiratory protection.
Hand protection	Wear suitable gloves.
Eye protection	Use eye protection. Use face shield in case of splash risk.
Skin and body protection	Wear suitable protective clothing.
Hygiene measures	When using, do not eat, drink or smoke. Avoid contact with eyes. Avoid contact

with skin. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

Information on basic physical and chemic	cal properties		
Physical properties			7
Appearance:	Liquid		
Color:	Colourless, Clear		
Odor:	Odourless		
pH:	6.5 Approx.		
Flash point:	Not flammable		
Auto-ignition temperature	Not flammable		
Solubility	·		
Solubility in water:	Completely soluble		
ability and Reactivity			
Chemical stability	Stable under no	rmal storage/handling cor	nditions.
Conditions to avoid		ct against direct sunlight.	
Hazardous decomposition products	-	en oxides (NOx).	
	,		
xicological Information			
Acute toxicity	Harmful if swallo		
TestResults	Acute OralLD50Rat	t:> 500mg/kg	
Skin corrosion/irritation	moderate		
Serious eyedamage/eye irritation		ansient (temporary) eye irritati	
Carcinogenicity	Substances in grou	p [1;2A;2B] by IARC (Internatio	onal Agency for Research on Cancer):None
ological Information			
Bioaccumulation	Not established		
Mobilityinsoil	Not established		
Mobilityinsoil Otherhazardous effects sposal considerations When your own wastewater treatment pla	Not established		en charge to a licensed industrial waste
Otherhazardous effects	Not established	ollect entire waste and the	-
Otherhazardous effects posal considerations When your own wastewater treatment pla management professional with manifests product or waste.	Not established	ollect entire waste and the	-
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	Class 1 Organic Solvents Preparations:	Not regulated.
	Class 2 Organic Solvents Preparations:	Not regulated.
	Class 3 Organic Solvents Preparations:	Not regulated.
	Notifiable Substance:	Not regulated.
	Labeling Requirements:	Not regulated.
	Others:	Not regulated.
Poisonous a	nd Deleterious Substances Control Law	
	Specified Poisonous Substance – Main Law:	Not regulated.
	Specified Poisonous Substance - Cabinet Order:	Not regulated.
	Poisonous Substances – Main Law:	Not regulated.
	Poisonous Substances - Cabinet Order:	Not regulated.
	Deleterious Substances – Main Law:	Not regulated.
	Deleterious Substances - Cabinet Order:	Not regulated.
	Enforcement Order Article 32-2:	Not regulated.
	Enforcement Order Article 32-3:	Not regulated.
	Not Considered Poisonous:	Not regulated.
	Not Considered Deleterious:	Not regulated.
	Cabinet Order, Preparations:	Not regulated.
Fire Service	Law	
	Class 1 Oxidizing Solids:	Not regulated.
	Class 2 Flammable Solids:	Not regulated.
	Class 3 Spontaneous combustibility and	Not regulated.
	Water-reactivity Substances:	Not regulated.
	Class 4 Flammable Liquids:	Not regulated.
	Class 5 Self-Reactive Substances:	Not regulated.
	Class 6 Oxidizing Liquids:	Not regulated.
	Designated Flammable Substances:	Not regulated.
	Storage Reporting Substance:	Not regulated.
Japan PRTR	ł	
	Specific Class 1 Designated Substance:	Not regulated.
	Class 1 Designated Substance:	Not regulated.
	Class 2 Designated Substance:	Not regulated.
Ship Safety	Law	Not regulated.
Civil Aerona	utics law	Not regulated.
Japan Marin	e Pollution Prevention Law	Not regulated.
High Pressu	re Gas Safety law	Not regulated.
Gun Powder	Control Law	Not regulated.

16. Other information

GHS classification and labelling Acute Tox. 4: H302 Skin Irrit. 2: H315 Eye Irrit. 2: H319

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 19th edit., 2015 UN Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012) JIS Z 7252:2014, JIS Z 7253:2012

 $\label{eq:NITE_CHRIP} NITE\ CHRIP\ (http://www.safe.nite.go.jp/japan/sougou/view/SystemTop_jp.faces)$

General Disclaimer

Date of issue 11/4/2020

Safety Data Sheet		
Product name:	Wash Buffer	
Product code:	WRV-S1	
SDS NO:	WRVS1_JPE_1	
Details of the supplier of the safety data		
Manufacturer/Supplier:	KURABO INDUSTRIES LTD.	
Address: Division:	Advanced Technology Center, 14–30 Shimokida-cho, Neyagawa, Osaka, 572–0823 JAP,	
Telephone number:	Bio-Medical department +81-72-820-3079	
FAX:	+81-72-820-3095	
Relevant identified uses of the substan		
	t: Reagents for automated nucleic acid isolation system	
Uses advised against: For research us	-	
_	·	
ards identification		
GHS classification and label elements of	•	
Classification of the substance or mixture		
PHYSICAL HAZARDS	Flammable liquids: Category 2	
HEALTH HAZARDS	Serious eye damage / eyeirritation: Category 2A	
	Carcinogenicity: Category 1A	
	Reproductive toxicity: Category 1A	
	Specific target organ systemictoxicity - single exposure:	
	Category 3(respiratory tract irritation)	
	Category 3(Narcotic effect)	
	Specific target organ systemictoxicity - Repeated exposure	
Label elements	Category 1(liver) Category 2(Central nervous system)	
Label elements		
Label elements Signal word:		
	Category 2(Central nervous system)	
Signal word:	Category 2(Central nervous system)	
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H319 Causes serious eye i	Category 2(Central nervous system) Danger id and vapour rritation	
Signal word: HAZARD STATEMENT H225 Highly flammable liqu	Category 2(Central nervous system) Danger id and vapour rritation	
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H319 Causes serious eye i	Category 2(Central nervous system) Danger id and vapour rritation y irritation	
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H319 Causes serious eye i H335 May cause respirator	Category 2(Central nervous system) Danger id and vapour rritation y irritation	
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H319 Causes serious eye i H335 May cause respirator H336 May cause drowsines	Category 2(Central nervous system) Danger id and vapour rritation y irritation ss or dizziness	
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H319 Causes serious eye i H335 May cause respirator H336 May cause drowsines H350 May cause cancer H360 May damage fertility	Category 2(Central nervous system) Danger id and vapour rritation y irritation ss or dizziness	
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H319 Causes serious eye i H335 May cause respirator H336 May cause drowsines H350 May cause cancer H360 May damage fertility H372 Causes damage to co H373 May cause damage	Category 2(Central nervous system) Danger	
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H319 Causes serious eye i H335 May cause respirator H336 May cause drowsines H350 May cause cancer H360 May damage fertility H372 Causes damage to co H373 May cause damage to co H373 May cause damage to co	Category 2(Central nervous system) Danger	
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Signal word: HAZARD STATEMENT H225 Highly flammable liqui H319 Causes serious eye i H335 May cause respirator H336 May cause drowsines H350 May cause drowsines H350 May cause cancer H360 May damage fertility H372 Causes damage to co H373 May cause damage to PRECAUTIONARY STATEN Prevention P201 Obtain special instruct P202 Do not handle until a	Category 2(Central nervous system) The system of the syst	
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Signal word: HAZARD STATEMENT H225 Highly flammable liqu H319 Causes serious eye i H335 May cause respirator H336 May cause drowsines H350 May cause drowsines H350 May cause cancer H360 May damage fertility H372 Causes damage to H373 May cause damage to H373 May cause damage to PRECAUTIONARY STATEN Prevention P201 Obtain special instruct P202 Do not handle until a P210 Keep away from heat P233 Keep container tightl P240 Ground/bond contain P241 Use explosion-proof P242 Use only non-sparkin P243 Take precautionary m P260 Do not breathe dust/ P261 Avoid breathing dust.	Category 2(Central nervous system) Image: Danger id and vapour rritation y irritation so or dizziness or the unborn child organs through prolonged or repeated exposure to organs through prolonged or repeated exposure to organs through prolonged or repeated exposure to argans through prolonged or repeated exposure to argan through prolonged or repeated exposure	
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P271 Use only outdoors or in a well-ventilated area.

 $P280 \ Wear \ protective \ gloves/protective \ clothing/eye \ protection/face \ protection.$

Response

P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses,

if present and easy to do. Continue rinsing.

P308 + P313 If exposed: Call a POISON CENTER or doctor/physician.

P312 Call a POISON CENTER or doctor if you feel unwell.

P314 Get medical advice/attention if you feel unwell.

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

P370 + P378 In case of fire: Use appropriate media to extinguish.

Storage

P405 Store locked up.

P403 + P233 Store in a well ventilated place. Keep container tightly closed.

P235 Keep cool.

Disposal

P501 Dispose of contents/container in accordance with local/national regulation.

3. Composition/information on ingredients

Mixture/Substance selection

Mixture

Ingredient name	Content(%)	CAS No.
ethanol	65 - 75	64-17-5
Water	Balance	7732-18-5

Note : The figures shown above are not the specifications of the product.

Generally chemical substances greater than 1% of the total are listed.

. First-aid measures	
Descriptions of first-aid measures	Rescuers should wear proper personal protective equipment suitable for situation
IF INHALED	Remove person to fresh air and keep comfortable for breathing.
	Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN(or hair)	Remove contaminated clothing. Wash with plenty of soap and water.
	If skin irritation occurs: Get medical advice/attention.
IF IN EYES	Rinse cautiously with water for several minutes. Remove contact lenses,
	if present and easy to do. Continue rinsing.
	If eye irritation persists: Get medical advice/attention.
IF SWALLOWED	Rinse mouth.
	Call a POISON CENTER or doctor/physician if you feel unwell.
Fire-fighting measures Extinguishing media	
Extinguishing media	
Suitable extinguishing media	Carbon dioxide, dry chemical and alcohol-resistant foam, water spray.
Extinguishing media to avoid	None.
Specific hazards arising from the chem	ical product
	Flammable.
Protection of fire-fighters	Wear adequate personal protective equipment. Firefighters should wear
	self-contained breathing apparatus and full firefighting turnout gear.
Accidental release measures	
Personnel precautions, protective equi	pment and emergency measures
For indoor, provide adequa	ate ventilation process until the end of working.
Wear adequate personal	protective equipment, see Section 8 (Exposure Controls/Personal Protection)
Environmental precautions	
T 1 C 1 C 1	

To be careful not discharged to the environment without being properly handled waste water contaminated. See Section 12 for additional ecological information.

Clean-up methods and materials and containment measures

Spills should be contained by, and covered with suitable absorbent material and removed for disposal.

7. Handling and sto	orage	
Precaution	s for safe handling	
Handling	Technical measures	Avoid contact with skin, eyes and clothing. Wash hands after handling.
	Local and general ventilation	Use only with adequate ventilation.
	Precautions	See Section 8 (Exposure Controls/Personal Protection).
	Safe handling advice	See Section 10 (Stability and reactivity).
Storage	Suitable storage conditions	Protect from sunlight. Keep container tightly closed.
	Safe packaging materials	Use plastic container that have enough toughness.

8. Exposure controls/personal protection

Engineering measures

Evacuate and ventilate spill area. Provide easy access to water supply and eye wash facilities.

Exposure limits

Chemical Name	JSOH (Japan)	ISHL (Japan)	ACGIH
Ethanol 64–17–5	N/A	N/A	STEL: 1000 ppm

Personal protective equipment

Respiratory protection	Wear suitable respiratory protection.
Hand protection	Wear suitable gloves.
Eye protection	Use eye protection. Use face shield in case of splash risk.
Skin and body protection	Wear suitable protective clothing.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Information on basic physical and chemic	al properties
Physical properties	
Appearance:	Liquid
Color:	Colourless, Clear
Odor:	Alcohol odor
pH:	7.6
Flash point:	no data
Auto-ignition temperature	no data
Solubility	
Solubility in water:	Completely soluble

10. Stability and Reactivity

Chemical stability	Stable under normal storage/handling conditions.
Conditions to avoid	Freezing. Extremes of temperature and direct sunlight, Heat, flames and sparks.
Hazardous decomposition products	CO, CO2 Nitrogen oxides (NOx).

11. Toxicological Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Ethanol	6200mg/kg(Rat)	N/A	20000ppm/10H(Rat)
Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity – inhalation gassource information
Ethanol	LD50(Rat) : 6,200 mg/kg, 11,500 mg/kg, 17,800 mg/kg, 13,700 mg/kg(PATTY(6th, 2012)), 15,010 mg/kg, 7,000- 11,000	LDLo(Rabbit) = 20,000 mg/kg(SIDS(2005))	Based on the NITE GHS classification results.

Chemical Name	Acute toxicity – inhalation vapor– source information		Acute toxicity – inhalation mistsource information
Ethanol	LC50(Rat) = 63,000 ppmV (DFGOT vol.12 (1999)), 66,280 ppmV(124.7 mg/L) (SIDS	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Chemical Name	Skin corr	osion irritation source info	rmation	
Ethanol	Based on	the NITE GHS classification	on results.	
erious eyedamage/eye irritation	-			
Chemical Name	Serious	s eye damage source infor	mation	
Ethanol	Based on	the NITE GHS classification	on results.	
espiratory or skin sensitization	1			
Chemical Name	Respiratory,	Skin sensitization source	information	
Ethanol	Based on	the NITE GHS classification	on results.	
eproductive cell mutagenicity	•			
Chemical Name	М	utagenic source informatic	n	
Ethanol	Based on	the NITE GHS classification	on results.	
arcinogenicity	•			
Chemical Name	Carc	inogenicity source informa	tion	
Ethanol		A3 (ACGIH (7th, 2012))		
	•			
Chemical Name	NTP	IARC	ACGIH	JSOH (Japan)
Ethanol 64-17-5	Known	Group 1	A3	-
eproductive toxicity				
Chemical Name	Reprodu	uctive toxicity source infor	mation	
Ethanol	Based on	the NITE GHS classification	on results.	
TOT-single exposure				
Chemical Name	STOT –si	ngle exposure- source inf	ormation	
Ethanol	Based on	the NITE GHS classification	on results.	
TOT-repeated exposure				
Chemical Name	STOT -rep	eated exposure- source ir	formation	
Ethanol	Based on	the NITE GHS classification	on results.	
spiration hazard				
Chemical Name	Aspira	tion Hazard source inform	ation	
Ethanol		the NITE GHS classification		

12. Ecological Information

Bioaccumula	tion						
	Chemical Name	Algae/aquatic plants	Fish	Crustacea			
	Ethanol	EC50: Chlorella alga 1000 mg∕L 96 h	LC50: Fathead minnow >100mg/L 96h LC50: Oncorhychus mykiss =11200ppm 96h	EC50: Daphnia magna 5463 mg/L 48 h			
Persistence a	and degradability	Degree of decomposition:	Degree of decomposition : 89 % by BOD				
Bioaccumula	tive potential	No information available					
Mobility in se	bil	No information available					
Hazard to th	e ozone layer Mobility	No information available					

13. Disposal considerations

When your own wastewater treatment plant is not available, collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste. Follow the laws and regulations in your country while disposing of this product or waste.

14. Transport Information

International regulation	
Marine transportation	Marine transportation is regulated by IMDG Code.
Air transportation	Air transportation is regulated by IATA Dangerous Goods Regulations.
UN code	1170
Class	3
Proper Shipping Name	Ethanol solution
Packing group	П
Marine pollutant	Not applicable
MARPOL 73/78 Annex II and liquid substances to be bulk loaded by IBC code	Not applicable

International Inventories		
EINECS/ELINCS	Listed	
TSCA	Listed	
Japanese regulations		
Law concerning the Examination an	d Regulation of Manu	acture etc. of Chemical Substances
Regulated.	(2)-202	
Industrial Safety and Health Act		
Notifiable Substances (I	_aw Art.57-2, Enforce	ment Oder Art.18–2 Attached Table No.9)No.61
Dangerous Substances	- Flammable Substan	ce (Enforcement Order Attached Table 1 Item4)
Harmful Substances Wh	ose Names Are to be	Indicated on the Label (Law Art.57, Para.1,
Enforcement Order Art.	18)	
Poisonous and Deleterious Substan	ces Control Law	Not regulated.
Fire Service Law		
Class 4 Flammable Liqu	ds:	Regulated. alcohols (water soluble)
Regulations for the carriage and sto	orage of dangerous go	ods in ship
Flammable Liquids (Ordin	ance Art.3, Ministry of	Transportation Ordinance Regarding
Transport by Ship and S	torage, Attached Table	1)
Japan PRTR		Not regulated.
Civil Aeronautics law		
Flammable Liquids (Ord	nance Art.194, MITL	Nortification for Air Transportation of Explosives etc., Attached Table 1
Japan Marine Pollution Prevention	_aw	
Enforcement ordinance A	ppendix No. 1 Noxious	liquid substance Category Z

GHS classification and labelling Flam. Liq. 2: H225 Eye Irrit. 2A: H319 Carc. 1A: H350 Repr. 1A: H360 STOT SE 3: H335, H336 STOT RE 1: H372 STOT RE 2: H373

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 19th edit., 2015 UN Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012) JIS Z 7252:2014, JIS Z 7253:2012

 $\label{eq:NITE_CHRIP} \verb| http://www.safe.nite.go.jp/japan/sougou/view/SystemTop_jp.faces) \\$

General Disclaimer

Date of issue 11/04/2020

entification of the	substance/mixture and	of the company/undertaki	ng		
Product identi	fier:				
Product nam	e:	Solubilization Buffer			
F	Product code:	SRV-S1			
	SDS NO:	SRVS1_JPE_1			
Details of the	supplier of the safety dat	a sheet			
Manufacture		KURABO INDUSTRIE	S LTD.		
	Address:	Advanced Technolog	y Center, 14–30 Shi	mokida-cho, Neyagawa,	Osaka, 572-0823 JAP
	Division:	Bio-Medical departm	ent		
	Telephone number:	+81-72-820-3079			
	FAX:	+81-72-820-3095			
Relevant iden	tified uses of the substar	nce or mixture and uses a	dvised against		
		ct: Reagents for automate	-	tion system	
	d against: For research us	-		-	
azards identificati	on				
	ation and label elements o	f the product			
	of the substance or mixtu	-			
	Not applicable to GHS class				
I		Sincation			
Label element	•				
	s No hazard pictogram				
	No Nazaro pictogram No Signal word				
, i					
omposition/inform	nation on ingredients				
Mixture/Subst	ance selection	Mixture			
Γ	Ingredie	nt name			
			Content(%)	ILAS NO.	
			Content(%) 10-20	CAS No.	_
-	oolyoxyethylene sorbitan fa	tty acid ester	10-20		-
ł	polyoxyethylene sorbitan fa nydrochloride salts of amino	tty acid ester	10-20 1-5		-
ł	polyoxyethylene sorbitan fa nydrochloride salts of amino Nater	tty acid ester palcohol	10-20 1-5 Balance		
ł	oolyoxyethylene sorbitan fa nydrochloride salts of amino Nater Note : The figures shown	tty acid ester palcohol above are not the specific	10-20 1-5 Balance ations of the product		
ł	oolyoxyethylene sorbitan fa nydrochloride salts of amino Nater Note : The figures shown	tty acid ester palcohol	10-20 1-5 Balance ations of the product		
rst-aid measures	oolyoxyethylene sorbitan fa nydrochloride salts of amino Water Note : The figures shown Generally chemic	tty acid ester palcohol above are not the specific	10-20 1-5 Balance ations of the product		
rst-aid measures	oolyoxyethylene sorbitan fa nydrochloride salts of amino Nater Note : The figures shown	tty acid ester palcohol n above are not the specifica al substances greater than	10-20 1-5 Balance ations of the product 1% of the total are lis		itable for situation.
rst-aid measures	oolyoxyethylene sorbitan fa nydrochloride salts of amino Water Note : The figures shown Generally chemic	tty acid ester palcohol a above are not the specific al substances greater than Rescuers should wea Remove person to fr	10-20 1-5 Balance ations of the product 1% of the total are lis ar proper personal p esh air and keep co		
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rst−aid measures Descriptions c	bolyoxyethylene sorbitan fa nydrochloride salts of amino Nater Note : The figures shown Generally chemic f first-aid measures	tty acid ester balcohol a above are not the specific al substances greater than Rescuers should wea Remove person to fr Call a POISON CEN	10-20 1-5 Balance ations of the product 1% of the total are lis ar proper personal p resh air and keep co FER or doctor/phys		
rst-aid measures Descriptions c IF INHALED	bolyoxyethylene sorbitan fa nydrochloride salts of amino Nater Note : The figures shown Generally chemic f first-aid measures	tty acid ester balcohol a above are not the specific al substances greater than Rescuers should wea Remove person to fr Call a POISON CEN	10-20 1-5 Balance ations of the product 1% of the total are lis ar proper personal p resh air and keep co FER or doctor/physed clothing. Wash v		
rst-aid measures Descriptions c IF INHALED	bolyoxyethylene sorbitan fa nydrochloride salts of amino Nater Note : The figures shown Generally chemic f first-aid measures	tty acid ester balcohol a above are not the specific al substances greater than Rescuers should wea Remove person to fr Call a POISON CEN Remove contaminate If skin irritation occu	10-20 1-5 Balance ations of the product 1% of the total are lis ar proper personal p esh air and keep co FER or doctor/physed clothing. Wash v rs: Get medical adv		water.
rst-aid measures Descriptions o IF INHALED IF ON SKIN (o	bolyoxyethylene sorbitan fa nydrochloride salts of amino Nater Note : The figures shown Generally chemic f first-aid measures	tty acid ester balcohol a above are not the specific al substances greater than Rescuers should wea Remove person to fr Call a POISON CEN Remove contaminate If skin irritation occu	10-20 1-5 Balance ations of the product 1% of the total are lis ar proper personal p esh air and keep co FER or doctor/phys ed clothing. Wash v rs: Get medical adv n water for several		water.
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rst-aid measures Descriptions o IF INHALED IF ON SKIN (o IF IN EYES	oolyoxyethylene sorbitan fa nydrochloride salts of amino Nater Note : The figures shown Generally chemic of first-aid measures	tty acid ester balcohol a above are not the specific al substances greater than Rescuers should wea Remove person to fr Call a POISON CEN Remove contaminate If skin irritation occu Rinse cautiously with if present and easy t If eye irritation persi Rinse mouth.	10-20 1-5 Balance ations of the product 1% of the total are lis ar proper personal p resh air and keep co FER or doctor/physed clothing. Wash v rs: Get medical adv n water for several to do. Continue rins sts: Get medical adv		water.
rst-aid measures Descriptions o IF INHALED IF ON SKIN (o IF IN EYES	bolyoxyethylene sorbitan fa hydrochloride salts of amino Water Note : The figures shown Generally chemic of first-aid measures or hair)	tty acid ester balcohol a above are not the specific al substances greater than Rescuers should wea Remove person to fr Call a POISON CEN Remove contaminate If skin irritation occu Rinse cautiously with if present and easy t If eye irritation persi Rinse mouth.	10-20 1-5 Balance ations of the product 1% of the total are lis ar proper personal p resh air and keep co FER or doctor/physed clothing. Wash v rs: Get medical adv n water for several to do. Continue rins sts: Get medical adv		water.
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rst-aid measures Descriptions of IF INHALED IF ON SKIN (of IF IN EYES IF SWALLOW re-fighting measu Extinguishing r	polyoxyethylene sorbitan far hydrochloride salts of amino Water Note : The figures shown Generally chemic of first-aid measures for hair) ED	tty acid ester balcohol a above are not the specific al substances greater than Rescuers should wea Remove person to fr Call a POISON CEN Remove contaminate If skin irritation occu Rinse cautiously with if present and easy t If eye irritation persi Rinse mouth. Call a POISON CEN	10-20 1-5 Balance ations of the product 1% of the total are lis ar proper personal p esh air and keep co FER or doctor/physe ed clothing. Wash v rs: Get medical adv n water for several to do. Continue rins sts: Get medical ad FER or doctor/physe		water.
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rst-aid measures Descriptions of IF INHALED IF ON SKIN (IF IN EYES IF SWALLOW re-fighting measu Extinguishing r Suitable exting	volyoxyethylene sorbitan fa hydrochloride salts of amino Nater Note : The figures shown Generally chemic of first-aid measures or hair) TED TED Tres media nguishing media media to avoid	tty acid ester balcohol a above are not the specific al substances greater than Rescuers should wea Remove person to fr Call a POISON CEN Remove contaminate If skin irritation occu Rinse cautiously with if present and easy t If eye irritation persi Rinse mouth. Call a POISON CEN Carbon dioxide, dry o None. Keep personnel remo	10-20 1-5 Balance ations of the product 1% of the total are lis ar proper personal p esh air and keep co FER or doctor/phys ed clothing. Wash v rs: Get medical add n water for several to do. Continue rins sts: Get medical add FER or doctor/phys chemical and protei		water. ct lenses,
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rst-aid measures Descriptions of IF INHALED IF ON SKIN (of IF IN EYES IF SWALLOW re-fighting measu Extinguishing if Suitable exting Extinguishing if Special fire fig	volyoxyethylene sorbitan fa hydrochloride salts of amino Nater Note : The figures shown Generally chemic of first-aid measures or hair) ED res media Iguishing media media to avoid thting	tty acid ester balcohol a above are not the specific al substances greater than Rescuers should wea Remove person to fr Call a POISON CEN Remove contaminate If skin irritation occu Rinse cautiously with if present and easy t If eye irritation persi Rinse mouth. Call a POISON CEN Carbon dioxide, dry of None. Keep personnel remo the environment.	10-20 1-5 Balance ations of the product 1% of the total are lis ar proper personal p resh air and keep co TER or doctor/physe ad clothing. Wash v rrs: Get medical adv n water for several to do. Continue rins sts: Get medical ad TER or doctor/physe chemical and protei by ed from and upwi er used to fight fire	7732-18-5	water. ct lenses,

Safety Data Sheet

6. Accidental release measures

Personnel precautions, protective equipment and emergency measures

Wear adequate personal protective equipment, see Section 8 (Exposure Controls/Personal Protection)

Environmental precautions

Prevent from entering into soil, waterways and ground water.

Clean-up methods and materials and containment measures

Spills should be contained by, and covered with suitable absorbent material and removed for disposal.

Precautions for safe handling		
Handling	Technicalmeasures	Avoid contact with skin, eyes and clothing. Wash hands after handling.
	Local and general ventilation	Use only with adequate ventilation.
	Precautions	See Section 8 (Exposure Controls/Personal Protection).
	Safehandling advice	See Section 10 (Stability and reactivity).
Storage	Suitable storage conditions	Protect from sunlight. Keep container tightly closed.
	Safepackagingmaterials	Use plastic container that have enough toughness.

8. Exposure controls/personal protection

Engineering measures

Evacuate and ventilate spill area. Provide easy access to water supply and eye wash facilities.

Personal protective equipment				
Respiratory protection	Wear suitable respiratory protection.			
Hand protection	Wear suitable gloves.			
Eye protection	Use eye protection. Use face shield in case of splash risk.			
Skin and body protection	Wear suitable protective clothing.			
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice.			

9. Physical and Chemical Properties

Information on basic physical and chemical properties				
Physical properties				
	Appearance:	Liquid		
	Color:	Colourless to light yellow, Clear		
	Odor:	Practically odourless		
	pH:	6 Approx.		
	Flash point:	Not flammable		
	Auto-ignition temperature	Not flammable		
Solubility				
	Solubility in water:	Completely soluble		

10. Stability and Reactivity

Chemical stability	Stable under norm
Conditions to avoid	Freezing. Protect a
Hazardous decomposition products	CO, CO2 Nitrogen

Stable under normal storage/handling conditions. Freezing. Protect against direct sunlight. CO, CO2 Nitrogen oxides (NOx).

11. Toxicological Information

Acute toxicity	
TestResults	Acute Oral LD50 Rat: > 2000 mg/kg
Skin corrosion/irritation	No irritation
Serious eyedamage/eye irritation	non irritant
Carcinogenicity	Substances in group [1;2A;2B] by IARC (International Agency for Research on Cancer):None

12. Ecological Information

Bioaccumulation	Not established.
Mobilityinsoil	Not established.
Otherhazardous effects	Not established

13. Disposal considerations

When your own wastewater treatment plant is not available, collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste. Follow the laws and regulations in your country while disposing of this product or waste.

nsport Inform		N I I I I I I I I I I	NI NO
	UN No, UN CLASS	Not applicable to l	
Marine trans			tion is regulated by IATA Dangerous Goods Regulations.
IMDG		Not regulated as d	
		Not regulated as d	
	Emergency Response Guide	Number	171
ulatory Infor	mation		
Law concer	ning the Examination and Reg	ulation of Manufacture	etc. of Chemical Substances
	Class 1 Specified Chemical	Substance:	Not regulated.
	Class 2 Specified Chemical	Substance:	Not regulated.
	Type 1 Monitoring Chemical	Substance:	Not regulated.
	Type 2 Monitoring Chemical	Substance:	Not regulated.
	Type 3 Monitoring Chemical	Substance:	Not regulated.
Industrial Sa	afety and Health Law		
	Dangerous Substances Flam	mable:	Not regulated.
	Dangerous Substances Flam		Not regulated.
	Dangerous Substances Oxid	izing:	Not regulated.
	Dangerous Substances Expl	osives:	Not regulated.
	Dangerous Substances Ignit	able:	Not regulated.
	Harmful Substances Carcino		Not regulated.
	Class 1 Designated Chemica	l Substances:	Not regulated.
	Class 2 Designated Chemica		Not regulated.
	Class 3 Designated Chemica		Not regulated.
	Class 1 Organic Solvents Pr		Not regulated.
	Class 2 Organic Solvents Pr		Not regulated.
	Class 3 Organic Solvents Preparations:		Not regulated.
	Notifiable Substance:		Not regulated.
	Labeling Requirements:		Not regulated.
	Others:		Not regulated.
Poisonous a	nd Deleterious Substances C	ontrol Law	-
	Specified Poisonous Substa		Not regulated.
	Specified Poisonous Substa		Not regulated.
	Poisonous Substances - Ma		Not regulated.
	Poisonous Substances - Ca		Not regulated.
	Deleterious Substances - M		Not regulated.
	Deleterious Substances - C		Not regulated.
	Enforcement Order Article 3		Not regulated.
	Enforcement Order Article 3		Not regulated.
	Not Considered Poisonous:		Not regulated.
	Not Considered Deleterious:		Not regulated.
	Cabinet Order, Preparations		Not regulated.
Fire Service			Not regulated.
	Class 1 Oxidizing Solids:		Not regulated.
	Class 2 Flammable Solids:		Not regulated.
	Class 3 Spontaneous combu	stibility and	Not regulated.
	Water-reactivity Substance	-	Not regulated.
	-	э.	_
	Class 4 Flammable Liquids: Class 5 Self-Reactive Subst	00000	Not regulated.
		ances.	Not regulated.
	Class 6 Oxidizing Liquids:		Not regulated.
	Designated Flammable Subs Storage Reporting Substance	Lances.	Not regulated.

Japan PRTR

Not regulated.
Not regulated.

16. Other information

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 19th edit., 2015 UN Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012) JIS Z 7252:2014, JIS Z 7253:2012

 ${\tt NITE\ CHRIP\ (http://www.safe.nite.go.jp/japan/sougou/view/SystemTop_jp.faces)}$

General Disclaimer

Date of issue 11/04/2020

Product identifier:	of the company/undertaki	-		
Product Identifier. Product name:	Elution Buffer			
Product code:	CRV-S1			
SDS NO:	CRVS1_JPE_1			
Details of the supplier of the safety da				
Manufacturer/Supplier:		=S TD.		
Address:			okida-cho, Neyagawa, O	saka. 572-0823 J
Division:	Bio-Medical departm	-	,,,, -	
Telephone number:	+81-72-820-3079			
FAX:	+81-72-820-3095			
Relevant identified uses of the substa	nce or mixture and uses a	advised against		
Relevant identified uses of the produ	ict: Reagents for automate	ed nucleic acid isolatio	on system	
Uses advised against: For research u	ise only			
zards identification				
GHS classification and label elements of	of the product			
Classification of the substance or mixtu	ure			
Not applicable to GHS clas	sification			
Label elements				
No hazard pictogram				
No Signal word				
mposition/information on ingredients				
Mixture/Substance selection	Mixture			
			-	-
Ingredie	ent name	Content(%)	CAS No.]
Ingredie Water	ent name	Content(%) 80-100	CAS No. 7732-18-5]
Water	ent name n above are not the specific	80-100]
Water Note : The figures show		80-100 ations of the product.	7732-18-5]
Water Note : The figures show Generally chemic	n above are not the specific	80-100 ations of the product.	7732-18-5	
Water Note : The figures show Generally chemic st-aid measures	n above are not the specific cal substances greater than	80-100 ations of the product. 1% of the total are liste	d.	able for situation
Water Note : The figures show Generally chemic st-aid measures Descriptions of first-aid measures	n above are not the specific cal substances greater than Rescuers should we	80-100 ations of the product. 1% of the total are liste ar proper personal pro	d.	able for situation.
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Water Note : The figures show Generally chemic st-aid measures Descriptions of first-aid measures	n above are not the specific cal substances greater than Rescuers should we Remove person to fi Call a POISON CEN Remove contaminate	80-100 ations of the product. 1% of the total are liste ar proper personal pro resh air and keep com TER or doctor/physic ed clothing. Wash wit	d. btective equipment suit fortable for breathing. ian if you feel unwell. h plenty of soap and wa	
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Water Note : The figures show Generally chemic st-aid measures Descriptions of first-aid measures IF INHALED IF ON SKIN(or hair) IF IN EYES IF SWALLOWED	n above are not the specific cal substances greater than Rescuers should we Remove person to fr Call a POISON CEN Remove contaminate If skin irritation occu Rinse cautiously wit if present and easy f If eye irritation persi Rinse mouth.	80-100 ations of the product. 1% of the total are liste ar proper personal pro- resh air and keep com TER or doctor/physic ed clothing. Wash wit urs: Get medical advic h water for several mi to do. Continue rinsin ists: Get medical advice	7732-18-5 d. ptective equipment suit fortable for breathing. ian if you feel unwell. h plenty of soap and wa e/attention. nutes. Remove contact g. ce/attention.	ater.
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Water Note : The figures show Generally chemic st-aid measures Descriptions of first-aid measures IF INHALED IF ON SKIN (or hair) IF IN EYES IF SWALLOWED e-fighting measures Extinguishing media Suitable extinguishing media	n above are not the specific cal substances greater than Rescuers should wea Remove person to fr Call a POISON CEN Remove contaminate If skin irritation occu Rinse cautiously with if present and easy fi If eye irritation persi Rinse mouth. Call a POISON CEN Carbon dioxide, dry None.	80-100 ations of the product. 1% of the total are liste ar proper personal pro- resh air and keep com TER or doctor/physic ed clothing. Wash wit urs: Get medical advic h water for several mi to do. Continue rinsing ists: Get medical advice TER or doctor/physic TER or doctor/physic	7732-18-5 d. otective equipment suit fortable for breathing. ian if you feel unwell. h plenty of soap and wa e/attention. nutes. Remove contact g. ce/attention. ian if you feel unwell.	ater. : lenses,
Water Note : The figures show Generally chemic st-aid measures Descriptions of first-aid measures IF INHALED IF ON SKIN (or hair) IF IN EYES IF SWALLOWED e-fighting measures Extinguishing media Suitable extinguishing media Extinguishing media to avoid	n above are not the specific cal substances greater than Rescuers should wea Remove person to fr Call a POISON CEN Remove contaminate If skin irritation occu Rinse cautiously with if present and easy fi If eye irritation persi Rinse mouth. Call a POISON CEN Carbon dioxide, dry None.	80-100 ations of the product. 1% of the total are liste ar proper personal pro- resh air and keep com TER or doctor/physic ed clothing. Wash wit urs: Get medical advic h water for several mi to do. Continue rinsing ists: Get medical advice TER or doctor/physic TER or doctor/physic	d. otective equipment suit fortable for breathing. ian if you feel unwell. h plenty of soap and wa e/attention. nutes. Remove contact g. ce/attention. ian if you feel unwell. based foam.	ater. : lenses,
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Water Note : The figures show Generally chemic st-aid measures Descriptions of first-aid measures IF INHALED IF ON SKIN(or hair) IF IN EYES IF SWALLOWED e-fighting measures Extinguishing media Suitable extinguishing media Extinguishing media to avoid Special fire fighting	n above are not the specific cal substances greater than Rescuers should we Remove person to fr Call a POISON CEN Remove contaminate If skin irritation occu Rinse cautiously wit if present and easy f If eye irritation persi Rinse mouth. Call a POISON CEN Carbon dioxide, dry None. Keep personnel remothe environment.	80-100 ations of the product. 1% of the total are liste ar proper personal pro- resh air and keep com TER or doctor/physic ed clothing. Wash wit urs: Get medical advic h water for several mi to do. Continue rinsing ists: Get medical advice TER or doctor/physic chemical and protein l oved from and upwind	d. otective equipment suit fortable for breathing. ian if you feel unwell. h plenty of soap and wa e/attention. nutes. Remove contact g. ce/attention. ian if you feel unwell. based foam. l of fire. Water runoff ca	ater. I lenses,

Safety Data Sheet

6. Accidental release measures

Personnel precautions, protective equipment and emergency measures

Wear adequate personal protective equipment, see Section 8 (Exposure Controls/Personal Protection)

Environmental precautions

Prevent from entering into soil, waterways and ground water.

Clean-up methods and materials and containment measures

Spills should be contained by, and covered with suitable absorbent material and removed for disposal.

Precautions for safe handling		
Handling	Technicalmeasures	Avoid contact with skin, eyes and clothing. Wash hands after handling.
	Local and general ventilation	Use only with adequate ventilation.
	Precautions	See Section 8 (Exposure Controls/Personal Protection).
	Safehandling advice	See Section 10 (Stability and reactivity).
Storage	Suitable storage conditions	Protect from sunlight. Keep container tightly closed.
	Safepackagingmaterials	Use plastic container that have enough toughness.

8. Exposure controls/personal protection

Engineering measures

Evacuate and ventilate spill area. Provide easy access to water supply and eye wash facilities.

Personal protective equipment				
Respiratory protection	Wear suitable respiratory protection.			
Hand protection	Wear suitable gloves.			
Eye protection	Use eye protection. Use face shield in case of splash risk.			
Skin and body protection	Wear suitable protective clothing.			
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice.			

9. Physical and Chemical Properties

Information on basic physical and chemical properties				
Physical properties				
	Appearance:	Liquid		
	Color:	Colourless, Clear		
	Odor:	Odourless		
	pH:	6.5		
	Flash point:	Not flammable		
	Auto-ignition temperature	Non combustible		
Solubility				
	Solubility in water:	Completely soluble		
Viscosity		Like water		

10. Stability and Reactivity

Chemical stability	Stable under normal storage/handling conditions.
Conditions to avoid	Freezing. Protect against direct sunlight.
Hazardous decomposition products	CO, CO2 Nitrogen oxides (NOx).

11. Toxicological Information

Acute toxicity	
TestResults	Acute Oral LD50 Rat: > 2000 mg/kg
Skin corrosion/irritation	No irritation
Serious eyedamage/eye irritation	non irritant
Carcinogenicity	Substances in group [1;2A;2B] by IARC (International Agency for Research on Cancer):None

12. Ecological Information

Bioaccumulation	
Mobilityinsoil	
Otherhazardous effects	

Not established. Not established. Not established

Disposal considerations When your own wastewater treatment plant is not available, collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste. Follow the laws and regulations in your country while disposing of t product or waste.		
Transport Information	1	
UN	No, UN CLASS Not applicable to	DUN NO.
Marine transporta	tion is regulated by IMDG Code. Air transpor	tation is regulated by IATA Dangerous Goods Regulations.
IMD	G Not regulated as	adangerous goods.
IAT	A Not regulated as	adangerous goods.
Regulatory Informatio	n	
	he Examination and Regulation of Manufactu	ure etc. of Chemical Substances
Clas	ss 1 Specified Chemical Substance:	Not regulated.
Clas	ss 2 Specified Chemical Substance:	Not regulated.
Тур	e 1 Monitoring Chemical Substance:	Not regulated.
Тур	e 2 Monitoring Chemical Substance:	Not regulated.
Тур	e 3 Monitoring Chemical Substance:	Not regulated.
Industrial Safety	and Health Law	
Dan	gerous Substances Flammable:	Not regulated.
Dan	gerous Substances Flammable Gases:	Not regulated.
Dan	gerous Substances Oxidizing:	Not regulated.
Dan	gerous Substances Explosives:	Not regulated.
	gerous Substances Ignitable:	Not regulated.
	mful Substances Carcinogen:	Not regulated.
	ss 1 Designated Chemical Substances:	Not regulated.
	ss 2 Designated Chemical Substances:	Not regulated.
	ss 3 Designated Chemical Substances:	Not regulated.
	ss 1 Organic Solvents Preparations:	Not regulated.
	ss 2 Organic Solvents Preparations:	Not regulated.
	ss 3 Organic Solvents Preparations:	Not regulated.
	ifiable Substance:	Not regulated.
		-
Oth	eling Requirements:	Not regulated.
	ers. eleterious Substances Control Law	Not regulated.
	cified Poisonous Substance – Main Law:	Not regulated.
•	cified Poisonous Substance – Cabinet Order	-
	sonous Substances - Main Law:	5
		Not regulated.
	sonous Substances – Cabinet Order:	Not regulated.
	eterious Substances - Main Law:	Not regulated.
	eterious Substances - Cabinet Order:	Not regulated.
	prcement Order Article 32-2:	Not regulated.
	prcement Order Article 32–3:	Not regulated.
	Considered Poisonous:	Not regulated.
	Considered Deleterious:	Not regulated.
Cab	inet Order, Preparations:	Not regulated.
Fire Service Law		
Clas	s 1 Oxidizing Solids:	Not regulated.
Clas	ss 2 Flammable Solids:	Not regulated.
Clas	s 3 Spontaneous combustibility and	Not regulated.
Wa	ter-reactivity Substances:	Not regulated.
Clas	ss 4 Flammable Liquids:	Not regulated.
Clas	ss 5 Self-Reactive Substances:	Not regulated.
Clas	ss 6 Oxidizing Liquids:	Not regulated.
Des	ignated Flammable Substances:	Not regulated.
	rage Reporting Substance:	Not regulated.
Japan PRTR		
-	cific Class 1 Designated Substance:	Not regulated.
-	ss 1 Designated Substance:	Not regulated.
	ss 2 Designated Substance:	Not regulated.

Ship Safety Law	Not regulated.
Civil Aeronautics law	Not regulated.
Japan Marine Pollution Prevention Law	Not regulated.
High Pressure Gas Safety law	Not regulated.
Gun Powder Control Law	Not regulated.

16. Other i	nformation
Ref	erence Book
	Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN
	Recommendations on the TRANSPORT OF DANGEROUS GOODS 19th edit., 2015 UN
	Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)
	JIS Z 7252:2014, JIS Z 7253:2012
	NITE CHRIP (http://www.safe.nite.go.jp/japan/sougou/view/SystemTop_jp.faces)

General Disclaimer

entification of the substance/mixture a	and of the company/undertaking
Product identifier:	
Product name:	Ethanol
Product code:	Ethanol
SDS NO:	ETOH_JPE_1.1
Details of the supplier of the safety	data sheet
Manufacturer/Supplier:	KURABO INDUSTRIES LTD.
Address:	Advanced Technology Center, 14-30 Shimokida-cho, Neyagawa, Osaka, 572-0823 JAF
Division:	Bio-Medical department
Telephone number:	+81-72-820-3079
FAX:	+81-72-820-3095
	ostance or mixture and uses advised against
	oduct: Reagents for automated nucleic acid isolation system
Uses advised against: For researc	h use only
azards identification	
GHS classification and label elemen	•
Classification of the substance or mi	
PHYSICAL HAZARDS	Flammable liquids: Category 2
HEALTH HAZARDS	Serious eye damage / eye irritation: Category 2B
	Carcinogenicity: Category 1A
	Reproductive toxicity: Category 1A
	Specific target organ systemictoxicity - single exposure:
	Category 3(respiratory tract irritation)
	Category 3(Narcotic effect)
	Specific target organ systemictoxicity - Repeated exposure
	\mathbf{O} -t
Label elements	Category 1(liver) Category 2(Central nervous system)
	Category 2(Central nervous system)
Label elements Signal word:	
	Category 2(Central nervous system)
Signal word:	Category 2(Central nervous system)
Signal word: HAZARD STATEMENT	Category 2(Central nervous system)
Signal word: HAZARD STATEMENT H225 Highly flammable	Category 2(Central nervous system)
Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc	Category 2(Central nervous system)
Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc	Category 2(Central nervous system)
Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc H360 May damage fert	Category 2(Central nervous system)
Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc H360 May damage fert H335 May cause respi H336 May cause drow	Category 2(Central nervous system)
Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc H360 May damage fert H335 May cause respi H336 May cause drow H372 Causes damage	Category 2(Central nervous system)
Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc H360 May damage fert H335 May cause respi H336 May cause drow H372 Causes damage	Category 2(Central nervous system)
Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc H360 May damage fert H335 May cause respi H336 May cause drow H372 Causes damage H373 May cause dam	Category 2(Central nervous system)
Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc H360 May damage fert H335 May cause respi H336 May cause drow H372 Causes damage H373 May cause dam PRECAUTIONARY ST	Category 2(Central nervous system) Danger
Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc H360 May damage fert H335 May cause respi H336 May cause drow H372 Causes damage H373 May cause dam PRECAUTIONARY ST Prevention P201 Obtain special in	Category 2(Central nervous system) Danger
Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc H360 May damage fert H335 May cause respi H336 May cause drow H372 Causes damage H373 May cause dam PRECAUTIONARY ST Prevention P201 Obtain special in P202 Do not handle un	Category 2(Central nervous system) Danger
Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc H360 May damage fert H335 May cause respi H336 May cause drow H372 Causes damage H373 May cause dam PRECAUTIONARY ST Prevention P201 Obtain special in P202 Do not handle un	Category 2(Central nervous system) Danger Danger r e liquid and vapor ation er tility or the unborn child ratory irritation siness or dizziness to organs through prolonged or repeated exposure age to organs through prolonged or repeated exposure ATEMENT het, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc H360 May damage fert H335 May cause respi H336 May cause drow H372 Causes damage H373 May cause dam PRECAUTIONARY ST. Prevention P201 Obtain special in P202 Do not handle un P210 Keep away from P233 Keep container t	Category 2(Central nervous system) Danger Danger r e liquid and vapor ation er tility or the unborn child ratory irritation siness or dizziness to organs through prolonged or repeated exposure age to organs through prolonged or repeated exposure ATEMENT het, hot surfaces, sparks, open flames and other ignition sources. No smoking.
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Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc H360 May damage fert H335 May cause drow H372 Causes damage H373 May cause dam PRECAUTIONARY ST. Prevention P201 Obtain special in P202 Do not handle ur P210 Keep away from P233 Keep container to P240 Ground/bond co	Category 2(Central nervous system) Danger Danger liquid and vapor ation er tility or the unborn child ratory irritation siness or dizziness to organs through prolonged or repeated exposure age to organs through prolonged or repeated exposure til all safety precautions have been read and understood. heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. tightly closed. matiner and receiving equipment. roof electrical/ventilating/lighting/equipment.
Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc H360 May damage fert H335 May cause draw H372 Causes damage H373 May cause draw PRECAUTIONARY ST. Prevention P201 Obtain special in P202 Do not handle un P210 Keep away from P233 Keep container to P240 Ground/bond coo P241 Use explosion-p P242 Use only non-sp	Category 2(Central nervous system) Danger Danger liquid and vapor ation er tility or the unborn child ratory irritation siness or dizziness to organs through prolonged or repeated exposure age to organs through prolonged or repeated exposure til all safety precautions have been read and understood. heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. tightly closed. matiner and receiving equipment. roof electrical/ventilating/lighting/equipment.
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Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc H360 May damage fert H335 May cause respi H336 May cause drow H372 Causes damage H373 May cause dama PRECAUTIONARY ST. Prevention P201 Obtain special in P202 Do not handle un P210 Keep away from P233 Keep container to P241 Use explosion-p P242 Use only non-sp P243 Take precaution P260 Do not breathed	Category 2(Central nervous system) Danger Danger Latiquid and vapor ation er tility or the unborn child ratory irritation siness or dizziness to organs through prolonged or repeated exposure age to organs through prolonged or repeated exposure age to organs through prolonged or repeated exposure age to organs through prolonged or repeated exposure ATEMENT Instructions before use. ntil all safety precautions have been read and understood. heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. tightly closed. Intainer and receiving equipment. roof electrical/ventilating/lighting/equipment. marking tools. ary measures against static discharge. dust/fumes/gas/mist/vapours/spray.
Signal word: HAZARD STATEMENT H225 Highly flammable H320 Causes eye irrita H350 May cause canc H360 May damage ferd H335 May cause respi H336 May cause drow H372 Causes damage H373 May cause damage H374 May cause damage H375 May cause damage H376 May cause damage H376 May cause damage H377 Causes damage H378 May cause damage H378 May cause damage H378 May cause damage H378 May cause damage H379 May cause damage H379 May cause damage H379 May cause damage H371 May cause damage H372 Causes damage H373 May cause damage H373 May cause damage H376 May cause damage H377 Causes damage H378 May cause damage H378 Ma	Category 2(Central nervous system)

Cofot Data Ch

P271 Use only outdoors or in a well-ventilated area.

 $P280 \ Wear \ protective \ gloves/protective \ clothing/eye \ protection/face \ protection.$

Response

P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses,

P308 + P313: If exposed: Call a POISON CENTER or doctor/physician.

P312 Call a POISON CENTER or doctor if you feel unwell.

P314 Get medical advice/attention if you feel unwell.

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

P370 + P378: In case of fire: Use CO2, dry chemical, or foam to extinguish.

Storage

P405 Store locked up.

P403 + P233 Store in a well ventilated place. Keep container tightly closed.

P235 Keep cool.

Disposal

P501 Dispose of contents/container in accordance with local/national regulation.

3. Composition/information on ingredients

Mixture/Substance selection

Substance

Ingredient name	Content(%)	CAS No.
Ethanol	99.5	64-17-5

Note : The figures shown above are not the specifications of the product.

Generally chemical substances greater than 1% of the total are listed.

4. First-aid measures	
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5. F

Descriptions of first-aid measures	Use personal protective equipment as required.
IF INHALED	Remove person to fresh air and keep comfortable for breathing.
	Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN(or hair)	Remove contaminated clothing. Wash with plenty of soap and water.
	If symptoms persist, Get medical advice/attention.
IF IN EYES	Rinse cautiously with water for several minutes. Remove contact lenses,
	if present and easy to do. Continue rinsing.
	Immediate medical attention is required.
IF SWALLOWED	Rinse mouth. Never give anything by mouth to an unconscious person.
	Call a physician or poison control center immediately. Do not induce vomiting
	without medical advice.
Fire-fighting measures	
Extinguishing media	

Dry chemical, CO2, water spray or alcohol-resistant foam, Water spray (fog)
No information available.
No information available.
l product
Extremely flammable
Use personal protective equipment as required. Firefighters should wear
self-contained breathing apparatus and full firefighting turnout gear.

6. Accidental release measures

Personnel precautions, protective equipment and emergency measures

For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind

Environmental precautions

To be careful not discharged to the environment without being properly handled waste water contaminated. See Section 12 for additional ecological information.

Clean-up methods and materials and containment measures

Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

if present and easy to do. Continue rinsing.

Recoverly, neutralization

No information available

Secondary disaster prevention measures

Clean contaminated objects and areas thoroughly observing environmental regulations.

andling and storage		
Precaution	s for safe handling	
Handling	Technicalmeasures	Highly flammable. Avoid contact with high temperature objects, spark, and
		strong oxidizing agents.
	Local and general ventilation	Use with local exhaust ventilation.
	Precautions	Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging.
		Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain.
		Seal the container after use. After handling, wash hands and face, and then gargle. In places
		other than those specified, should not be smoking or eating and drinking. Should not
		be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary
		entry of non-emergency personnel to the handling area.
	Safe handling advice	Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).
Storage	Suitable storage conditions	Store away from sunlight in well-ventilated place at room temperature (preferably cool).
		Keep container tightly closed.
	Safe packaging materials	Glass
	Incompatible substances	Strong oxidizing agents

8. Exposure controls/personal protection

Engineering measures

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits

	Chemical Name	JSOH (Japan)	ISHL (Japan)	ACGIH
	Ethanol	N/A	N/A	STEL: 1000 ppm
	64-17-5			
Personal pro	tective equipment			
	Respiratory protection	gas mask for organic ga	s	
	Hand protection	Protection gloves		
	Eye protection	protective eyeglasses o	r chemical safety goggle	s
	Skin and body protection	Wear suitable protective	e clothing, protective bo	ots.

Wear suitable protective clothing, protective boots.

When using do not eat, drink or smoke.

9. Physical and Chemical Properties

Hygiene measures

Information	on basic physical and chemical	properties
Physical prop	perties	
	Appearance:	Liquid
	Color:	Colourless, Clear
	Odor:	characteristic odor
	pH:	No data available
	Melting point/freezing point:	-117°C
	Boiling point, initial boiling point and boiling range	78°C
	Flash point:	13°C
	Upper/lower flammability or explosive limits	
	Upper: Lower:	19.0 vol% 3.3 vol%
	Specific Gravity / Relative density:	0.789-0.791
	Auto-ignition temperature:	371°C
Solubility		-
	Water , Diethyl ether:	soluble
	n-Octanol/water partition coefficient:(log Pow):	-0.32
Auto-ignition	temperature:	371°C

10. Stability and Reactivity

Chemical stability	Stable under recommended storage conditions.
Reactivity	No data available
Hazardous reactions	May cause ignition on contact with strong oxidizing agents
Conditions to avoid	Extremes of temperature and direct sunlight, Heat, flames and sparks
Incompatible materials	Strong oxidizing agents
Hazardous decomposition products	Carbon monooxide (CO), Carbon dioxide (CO2)

11. Toxicological Information

Acute toxici	ty			
	Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
	Ethanol	6200mg/kg(Rat)	N/A	20000ppm/10H(Rat)

Chemical Name	Acute toxicity –oral– source information	Acute toxicity -dermal- source information	Acute toxicity – inhalation gassource information
Ethanol	LD50(Rat): 6,200 mg/kg, 11,500 mg/kg, 17,800 mg/kg, 13,700 mg/kg(PATTY(6th, 2012)), 15,010 mg/kg, 7,000- 11,000	LDLo(Rabbit) = 20,000 mg/kg(SIDS(2005))	Based on the NITE GHS classification results.

Chemical Name	Acute toxicity – inhalation vapor– source information	Acute toxicity – inhalation mistsource information
Ethanol	LC50(Rat) = 63,000 ppmV (DFGOT vol.12 (1999)), 66,280 ppmV(124.7 mg/L) (SIDS	 Based on the NITE GHS classification results.

Skin corrosion/irritation

Chemical Name	Skin cor	rosion irritation source inf	formation	
Ethanol	Based or	the NITE GHS classification	on results.	
erious eyedamage/eye irritation				
Chemical Name	Seriou	s eye damage source info	rmation	
Ethanol	Based or	the NITE GHS classification	on results.	
espiratory or skin sensitization				
Chemical Name	Respiratory	, Skin sensitization source	information	
Ethanol	Based or	the NITE GHS classification	on results.	
eproductive cell mutagenicity				
Chemical Name	N	lutagenic source informati	on	
Ethanol	Based or	the NITE GHS classification	on results.	
arcinogenicity				
Chemical Name	Car	cinogenicity source inform	ation	
Ethanol		A3 (ACGIH (7th, 2012))		
Chemical Name	NTP	IARC	ACGIH	JSOH (Japan)
Ethanol 64-17-5	Known	Group 1	A3	-
productive toxicity				
Chemical Name	Reprod	Reproductive toxicity source information		
Ethanol	Based or	the NITE GHS classification	on results.	
TOT-single exposure				
Chemical Name	STOT -	single exposure- source in	formation	
Ethanol	Based or	the NITE GHS classification	on results.	
TOT-repeated exposure				
Chemical Name	STOT -re	peated exposure- source	information	
Ethanol	Based or	the NITE GHS classification	on results.	
spiration hazard				
Chemical Name	Aspir	ation Hazard source inforr	mation	
Ethanol	Based or	the NITE GHS classification	on results.	

12. Ecological Information

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Ethanol	EC50: Chlorella alga 1000 mg/L 96 h	LC50: Fathead minnow >100mg/L 96h LC50: Oncorhychus mykiss =11200ppm 96h	EC50: Daphnia magna 5463 mg/L 48 h
Persistence and degradability	Degree of decomposition:	:89 % by BOD	
Bioaccumulative potential	No information available		
Mobility in soil	No information available		
Hazard to the ozone layer Mobility	No information available		

13. Disposal considerations

Waste from residues

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated container and contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

	rmation	1170
ADR/RID	UN number	1170
	Class	3
	Proper Shipping Name	Ethanol
	Packing group	
	Marine pollutant	Not applicable
IMDG	UN number	1170
	Class	3
	Proper Shipping Name	Ethanol
	Packing group	II
	Marine pollutant	Not applicable
	MARPOL 73/78 Annex II and liquid substances to be bulk loaded by IBC code	No information available
IATA	UN number	1170
	Class	3
	Proper Shipping Name	Ethanol solution
	Packing group	II
	Environmentally Hazardous Substance	Not applicable
Internation	al Inventories EINECS/ELINCS TSCA	Listed Listed
Japanese r	egulations	
•	-	ulation of Manufacture etc. of Chemical Substances
	Regulated.	(2)-202
Industrial	0	(2)-202
Industrial	Safety and Health Act	
Industrial	Safety and Health Act Notifiable Substances (Law Art	t.57-2, Enforcement Oder Art.18-2 Attached Table No.9)No.61
Industrial	Safety and Health Act Notifiable Substances (Law Art Dangerous Substances - Flam	t.57–2, Enforcement Oder Art.18–2 Attached Table No.9)No.61 mable Substance (Enforcement Order Attached Table 1 Item4)
	Safety and Health Act Notifiable Substances (Law Ard Dangerous Substances - Flam Harmful Substances Whose Na	t.57–2, Enforcement Oder Art.18–2 Attached Table No.9)No.61 mable Substance (Enforcement Order Attached Table 1 Item4) imes Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18)
Poisonous	Safey and Health Act Notifiable Substances (Law Ard Dangerous Substances – Flam Harmful Substances Whose Na s and Deleterious Substances C	t.57–2, Enforcement Oder Art.18–2 Attached Table No.9)No.61 mable Substance (Enforcement Order Attached Table 1 Item4) imes Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18)
	Safety and Health Act Notifiable Substances (Law Art Dangerous Substances – Flam Harmful Substances Whose Na s and Deleterious Substances Co ice Law	t.57–2, Enforcement Oder Art.18–2 Attached Table No.9)No.61 mable Substance (Enforcement Order Attached Table 1 Item4) imes Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18) ontrol Law Not regulated.
Poisonous Fire Servi	Safety and Health Act Notifiable Substances (Law Art Dangerous Substances – Flam Harmful Substances Whose Na s and Deleterious Substances Co ice Law Category IV, alcohols, dangerou	t.57–2, Enforcement Oder Art.18–2 Attached Table No.9)No.61 mable Substance (Enforcement Order Attached Table 1 Item4) imes Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18) ontrol Law Not regulated. us grade 2 water–soluble
Poisonous Fire Servi	Safety and Health Act Notifiable Substances (Law Art Dangerous Substances – Flam Harmful Substances Whose Na s and Deleterious Substances G ice Law Category IV, alcohols, dangerou ns for the carriage and storage of	t.57–2, Enforcement Oder Art.18–2 Attached Table No.9)No.61 mable Substance (Enforcement Order Attached Table 1 Item4) umes Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18) ontrol Law Not regulated. us grade 2 water-soluble of dangerous goods in ship
Poisonous Fire Servi	Safety and Health Act Notifiable Substances (Law Art Dangerous Substances – Flam Harmful Substances Whose Na s and Deleterious Substances G ice Law Category IV, alcohols, dangerou ns for the carriage and storage of Flammable Liquids (Ordinance Art	t.57-2, Enforcement Oder Art.18-2 Attached Table No.9)No.61 mable Substance (Enforcement Order Attached Table 1 Item4) umes Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18) ontrol Law Not regulated. us grade 2 water-soluble of dangerous goods in ship rt.3, Ministry of Transportation Ordinance Regarding
Poisonous Fire Servi Regulation	Safety and Health Act Notifiable Substances (Law Art Dangerous Substances – Flam Harmful Substances Whose Na s and Deleterious Substances Cr ice Law Category IV, alcohols, dangerou ns for the carriage and storage of Flammable Liquids (Ordinance Ar Transport by Ship and Storage,	t.57-2, Enforcement Oder Art.18-2 Attached Table No.9)No.61 mable Substance (Enforcement Order Attached Table 1 Item4) imes Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18) ontrol Law Not regulated. us grade 2 water-soluble of dangerous goods in ship rt.3, Ministry of Transportation Ordinance Regarding Attached Table 1)
Poisonous Fire Servi Regulation Japan PR	Safety and Health Act Notifiable Substances (Law Art Dangerous Substances – Flam Harmful Substances Whose Na s and Deleterious Substances C ice Law Category IV, alcohols, dangerou ns for the carriage and storage of Flammable Liquids (Ordinance Ar Transport by Ship and Storage, TR	t.57-2, Enforcement Oder Art.18-2 Attached Table No.9)No.61 mable Substance (Enforcement Order Attached Table 1 Item4) umes Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18) ontrol Law Not regulated. us grade 2 water-soluble of dangerous goods in ship rt.3, Ministry of Transportation Ordinance Regarding
Poisonous Fire Servi Regulation Japan PR	Safety and Health Act Notifiable Substances (Law Art Dangerous Substances – Flam Harmful Substances Whose Na s and Deleterious Substances Co ice Law Category IV, alcohols, dangerou ns for the carriage and storage of Flammable Liquids (Ordinance Ar Transport by Ship and Storage, TR nautics law	t.57-2, Enforcement Oder Art.18-2 Attached Table No.9)No.61 mable Substance (Enforcement Order Attached Table 1 Item4) imes Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18) ontrol Law Not regulated. us grade 2 water-soluble of dangerous goods in ship rt.3, Ministry of Transportation Ordinance Regarding Attached Table 1) Not regulated.
Poisonous Fire Servi Regulation Japan PR Civil Aero	Safety and Health Act Notifiable Substances (Law Art Dangerous Substances – Flam Harmful Substances Whose Na s and Deleterious Substances Co ice Law Category IV, alcohols, dangerou ns for the carriage and storage of Flammable Liquids (Ordinance Ar Transport by Ship and Storage, TR nautics law	t.57-2, Enforcement Oder Art.18-2 Attached Table No.9)No.61 mable Substance (Enforcement Order Attached Table 1 Item4) imes Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18) ontrol Law Not regulated. us grade 2 water-soluble of dangerous goods in ship rt.3, Ministry of Transportation Ordinance Regarding Attached Table 1)

16. Other information

GHS classification and labelling Flam. Liq. 2: H225 Eye Irrit. 2B: H320 Carc. 1A: H350 Repr. 1A: H360 STOT SE 3: H335, H336 STOT RE 1: H372 STOT RE 2: H373

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 19th edit., 2015 UN Classification, labelling and packaging of substances and mixtures (table3–1 ECNO6182012) JIS Z 7252:2014, JIS Z 7253:2012

 $\label{eq:NITE_CHRIP} \end{tabular} NITE\ \end{tabular} CHRIP\ \end{tabular} (http://www.safe.nite.go.jp/japan/sougou/view/SystemTop_jp.faces)$

General Disclaimer