KKURABO

SAFETY DATA SHEET

QuickGene-AutoS RNA Tissue Kit (AS-RT)

Name of substance	Classification acc. to GHS	Pictograms
Lysis Buffer LRT-02	Acute Tox. 4: H302	
	Skin Irrit. 2: H315	
	Eye Irrit. 2: H319	
Wash Buffer WRT-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		
SRT-02		
Elution Buffer CRT-S1		
Ethanol	Flam. Liq. 2: H225	
	Eye Irrit. 2B: H320	
	Carc. 1A: H350	$\wedge \wedge \wedge$
	Repr. 1A: H360	
	STOT SE 3: H335, H336	\vee \vee \vee
	STOT RE 1: H372	
	STOT RE 2: H373	

KURABO INDUSTRIES LTD.

Bio-Medical Department

Address

Neyagawa Techno Center 3F 14-5 Shimokida-Cho, Neyagawa, Osaka 572-0823, Japan +81-72-820-3079 +81-72-820-3095

Telephone Number FAX Number

Date of issue 03/15/2019

Product identifier:	
Product name:	Lysis Buffer
Product code:	LRT-02
SDS NO:	LRT02_JPE_1
Details of the supplier of the safety data a	sheet
Manufacturer/Supplier:	KURABO INDUSTRIES LTD.
Address:	Neyagawa Techno Center, 14-5 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 substance	_
Uses advised against: For research use	Reagents for automated nucleic acid isolation system
ards identification GHS classification and label elements of t	he product
Classification of the substance or mixture	
HEALTH HAZARDS	Acute toxicity Oral: Category 4
	Skin corrosion/irritation: Category 2
	Serious eye damage/eye irritation: Category 2
(Note) GHS classification wi	thout description: Not applicable/Out of classification/Not classifiable
Label elements	
	$\mathbf{\vee}$
Signal word:	Warning
HAZARD STATEMENT	
H302 Harmful if swallowed	
H315 Causes skin irritation	
H319 Causes serious eye irri	tation
PRECAUTIONARY STATEM	ENT
Prevention	
P264 Wash contaminated participation of the partici	rts thoroughly after handling.
P280 Wear protective gloves	
P280 Wear eye protection/fa	ace protection.
P270 Do not eat, drink or sm	oke when using this product.
Response	
	ash with plenty of soap and water.
	occurs: Get medical advice/attention.
	minated clothing and wash it before reuse.
	YES: Rinse cautiously with water for several minutes. Remove
	d easy to do. Continue rinsing.
-	persists: Get medical advice/attention.
P330 Rinse mouth.	
	D: Call a POISON CENTER or doctor/physician if you feel unwell.
Disposal B501 Dispose of contents (o	ontainar in accordance with local (national variation
POUL Dispose of contents/co	ontainer in accordance with local/national regulation.

3. Composition/information on ingredients

Ingredie	nt name	Content(%)	CAS No.	
guanidinium thiocyanate	guanidinium thiocyanate		50-01-1	
hydrochloride salts of amino	alcohol	1-5	-	
Water		Balance	7732-18-5	
Note : The figures shown	above are not the specific	ations of the product.		
Generally chemica	al substances greater than	1% of the total are listed	ł.	
	Rescuers should w	ear proper personal pi	rotective equipment suit	able for sit
Descriptions of first-aid measures			otective equipment suit nfortable for breathing.	able for sit
Descriptions of first-aid measures	Remove person to	fresh air and keep cor		able for sit
Descriptions of first–aid measures IF INHALED	Remove person to Call a POISON CEN	fresh air and keep cor NTER or doctor/physi	nfortable for breathing.	
	Remove person to Call a POISON CEN Remove contamina	fresh air and keep cor NTER or doctor/physi	nfortable for breathing. cian if you feel unwell. th plenty of soap and wa	
Descriptions of first–aid measures IF INHALED	Remove person to Call a POISON CEN Remove contamina If skin irritation occ	fresh air and keep con NTER or doctor/physi ted clothing. Wash wi curs: Get medical advi	nfortable for breathing. cian if you feel unwell. th plenty of soap and wa	ater.
Descriptions of first-aid measures IF INHALED IF ON SKIN(or hair)	Remove person to Call a POISON CEN Remove contamina If skin irritation occ Rinse cautiously wi	fresh air and keep con NTER or doctor/physi ted clothing. Wash wi curs: Get medical advi	nfortable for breathing. cian if you feel unwell. th plenty of soap and wa ce/attention. inutes. Remove contact	ater.
IF ON SKIN(or hair)	Remove person to Call a POISON CEI Remove contamina If skin irritation occ Rinse cautiously wi if present and easy	fresh air and keep con NTER or doctor/physi ted clothing. Wash wi curs: Get medical advi ith water for several n	nfortable for breathing. cian if you feel unwell. th plenty of soap and wa ce/attention. ninutes. Remove contact ng.	ater.

5. Fire-fighting measures

o. The 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.

Call a POISON CENTER or doctor/physician if you feel unwell.

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.

Precaution	s 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	al properties		
Physical properties			
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 nor	mal storage/handling cond	ditions.
Conditions to avoid	Freezing. Protec	t against direct sunlight.	
Hazardous decomposition products	CO, CO2 Nitroge	en oxides (NOx).	
where the state of the forement to an			
xicological Information	Hormful if our-li-	wod	
	Harmful if swallo		
TestResults Skin corrosion/irritation	Acute OralLD50Rat:	/ JUUIIIg/ Kg	
	moderate	nsient (temporary) eye irritation	
Serious eyedamage/eye irritation			
Carcinogenicity	Substances in group	LI, ZA; ZDJ BY IARU (Internation)	al Agency for Research on Cancer):None
ological Information			
Bioaccumulation	Not established.		
Mobilityinsoil	Not established.		
medineymeen			
Otherhazardous effects	Not established		
Otherhazardous effects sposal considerations When your own wastewater treatment plan	nt is not available, co		-
Otherhazardous effects sposal considerations When your own wastewater treatment plan management professional with manifests f product or waste.	nt is not available, co		-
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Otherhazardous effects sposal considerations When your own wastewater treatment plai management professional with manifests f product or waste. ansport Information UN No, UN CLASS	nt is not available, cc for industrial waste. F Not applicable to	ollow the laws and regulati	ons in your country while disposing of t
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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	and 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	a 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 PRTI	२	
	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	autics law	Not regulated.
Japan Marir	ne Pollution Prevention Law	Not regulated.
High Pressu	ıre Gas Safety law	Not regulated.
Gun Powde	r 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

NITE CHRIP (http://www.safe.nite.go.jp/japan/sougou/view/SystemTop_jp.faces)

General Disclaimer

Date of issue 26/12/2018

Product identifier:	
Product name:	Wash Buffer
Product code:	WRT-S1
SDS NO:	WRTS1_JPE_1
Details of the supplier of the safety data s	heet
Manufacturer/Supplier:	KURABO INDUSTRIES LTD.
Address:	Neyagawa Techno Center, 14-5 Shimokida-cho, Neyagawa, Osaka, 572-0823 JAPAN
Division:	Bio-Medical department
Telephone number:	+81-72-820-3079
FAX:	+81-72-820-3095
Relevant identified uses of the substanc	-
-	Reagents for automated nucleic acid isolation system
Uses advised against: For research use	only
rds identification	
GHS classification and label elements of the	he product
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
	Category 1(liver)
	Category 2(Central nervous system)
Label elements	
Label elements	Danger
Signal word:	Danger
Signal word: HAZARD STATEMENT	
Signal word: HAZARD STATEMENT H225 Highly flammable liquid	and vapour
Signal word: HAZARD STATEMENT H225 Highly flammable liquid H319 Causes serious eye irri	and vapour tation
Signal word: HAZARD STATEMENT H225 Highly flammable liquid H319 Causes serious eye irri H335 May cause respiratory	and vapour tation irritation
Signal word: HAZARD STATEMENT H225 Highly flammable liquid H319 Causes serious eye irri H335 May cause respiratory H336 May cause drowsiness	and vapour tation irritation
Signal word: HAZARD STATEMENT H225 Highly flammable liquid H319 Causes serious eye irri H335 May cause respiratory H336 May cause drowsiness H350 May cause cancer	and vapour tation or dizziness
Signal word: HAZARD STATEMENT H225 Highly flammable liquid H319 Causes serious eye irri H335 May cause respiratory H336 May cause drowsiness H350 May cause cancer H360 May damage fertility or	and vapour tation irritation or dizziness the unborn child
Signal word: HAZARD STATEMENT H225 Highly flammable liquid H319 Causes serious eye irri H335 May cause respiratory H336 May cause drowsiness H350 May cause cancer H360 May damage fertility or H372 Causes damage to or	and vapour tation irritation or dizziness the unborn child gans through prolonged or repeated exposure
Signal word: HAZARD STATEMENT H225 Highly flammable liquid H319 Causes serious eye irri H335 May cause respiratory H336 May cause drowsiness H350 May cause cancer H360 May damage fertility or H372 Causes damage to org H373 May cause damage to	and vapour tation irritation or dizziness the unborn child gans through prolonged or repeated exposure o organs through prolonged or repeated exposure
Signal word: HAZARD STATEMENT H225 Highly flammable liquid H319 Causes serious eye irri H335 May cause respiratory H336 May cause drowsiness H350 May cause cancer H360 May damage fertility or H372 Causes damage to or H373 May cause damage to PRECAUTIONARY STATEME	and vapour tation irritation or dizziness the unborn child gans through prolonged or repeated exposure o organs through prolonged or repeated exposure
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Signal word: HAZARD STATEMENT H225 Highly flammable liquid H319 Causes serious eye irri H335 May cause respiratory H336 May cause drowsiness H350 May cause drowsiness H350 May cause damage to org H372 Causes damage to org H373 May cause damage to org H372 Causes damage to org H373 May cause damage to org H373 May cause damage to org H374 May cause damage to org H375 May cause damage to org H372 Causes damage to org H372 Causes damage to org H373 May cause damage to org H374 May cause damage to org H375 May cause damage to org H372 Causes damage to org H372 Causes damage to org H373 May cause damage to org H374 May cause damage to org H375 May cause damage to org H376 May cause damage to org H377 May cause damage to org H378 May cause damage to org H379 Dottain special instruction P201 Obtain special instruction P202 Do not handle until all so	and vapour tation irritation or dizziness the unborn child gans through prolonged or repeated exposure o organs through prolonged or repeated exposure ENT
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Safety Data Sheet

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	
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.

6. Accidental release measures

Personnel precautions, protective equipment and emergency measures

For indoor, provide adequate ventilation process until the end of working.

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

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

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

dling and storage Precautions for safe 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).	
Suitable storage conditions	Protect from sunlight. Keep container tightly closed.	
Safe packaging materials	Use plastic container that have enough toughness.	
	s for safe handling Technical measures Local and general ventilation Precautions Safe handling advice Suitable storage conditions	

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 chemical properties				
Liquid				
Colourless, Clear				
Alcohol odor				
7.6				
no data				
no data				
Completely soluble				

10. Stability and Reactivity

Chemical stability Conditions to avoid Hazardous decomposition products Stable under normal storage/handling conditions. Freezing. Extremes of temperature and direct sunlight, Heat, flames and sparks. 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 dustsource information	Acute toxicity -inhalation mistsource information	
Ethanol	LC50(Rat) = 63,000 ppmV (DFGOT vol.12 (1999)), 66.280	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	

Chemical Name	Skin co	rrosion irritation source in	formation	
Ethanol	Based o	n the NITE GHS classificati	on results.	
erious eyedamage/eye irritation				
Chemical Name	Serio	us eye damage source info	rmation	
Ethanol	Based o	n the NITE GHS classificati	on results.	
espiratory or skin sensitization	•			
Chemical Name	Respirator	y, Skin sensitization source	e information	
Ethanol	Based o	n the NITE GHS classificati	on results.	
eproductive cell mutagenicity				
Chemical Name		Mutagenic source informati	on	
Ethanol	Based o	n the NITE GHS classificati	on results.	
arcinogenicity				
Chemical Name	Ca	rcinogenicity source inform	ation	
Ethanol		A3 (ACGIH (7th, 2012))		
		1	Γ	
Chemical Name	NTP	IARC	ACGIH	JSOH (Japan)
Ethanol 64–17–5	Known	Group 1	A3	-
eproductive toxicity	_			
Chemical Name	Repro	ductive toxicity source info	ormation	
Ethanol	Based o	n the NITE GHS classificati	on results.	
TOT-single exposure	-			
Chemical Name	STOT -	single exposure- source in	formation	
Ethanol	Based o	n the NITE GHS classificati	on results.	
TOT-repeated exposure				
Chemical Name	STOT -repeated exposure- source information			
Ethanol	Based on the NITE GHS classification results.			
spiration hazard				
Chemical Name	Aspi	ration Hazard source infor	mation	
Ethanol	Based o	n the NITE GHS classificati	on results	

12. Ecological Information

Bioaccumulation				
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:		_ 1	
Bioaccumulative potential	No information available			
Mobility in soil	No information available	No information available		
Hazard to the 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 a liquid substances to be bu loaded by IBC code	

International Inventories		
EINECS/ELINCS	Listed	
TSCA	Listed	
Japanese regulations		
Law concerning the Examination and	d Regulation of Manufa	acture etc. of Chemical Substances
Regulated.	(2)-202	
Industrial Safety and Health Act		
Notifiable Substances (L	aw Art.57-2, Enforcem	ent Oder Art.18-2 Attached Table No.9)No.61
Dangerous Substances -	Flammable Substance	(Enforcement Order Attached Table 1 Item4)
Harmful Substances Who	ose Names Are to be Ir	ndicated on the Label (Law Art.57, Para.1,
Enforcement Order Art.1	8)	
Poisonous and Deleterious Substan	ces Control Law	Not regulated.
Fire Service Law		
Class 4 Flammable Liquid	ds:	Regulated. alcohols (water soluble)
Regulations for the carriage and sto	rage of dangerous goo	ods in ship
Flammable Liquids (Ordina	ance Art.3, Ministry of T	ransportation Ordinance Regarding
Transport by Ship and St	orage, Attached Table 1	1)
Japan PRTR		Not regulated.
Civil Aeronautics law		
Flammable Liquids (Ordir	nance Art.194, MITL No	ortification for Air Transportation of Explosives etc., Attached Table 1)
Japan Marine Pollution Prevention I	_aw	
Enforcement ordinance A	ppendix No. 1 Noxious li	quid 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

NITE CHRIP (http://www.safe.nite.go.jp/japan/sougou/view/SystemTop_jp.faces)

General Disclaimer

Date of issue 03/15/2019

entification of the substance/mixture and Product identifier:						
Product identifier: Product name:	Elution Buffer					
Product name. Product code:	CRT-S1					
	SDS NO: CRTS1_JPE_1					
Details of the supplier of the safety dat						
Manufacturer/Supplier: KURABO INDUSTRIES LTD.						
Address:		Neyagawa Techno Center, 14–5 Shimokida-cho, Neyagawa, Osaka, 572–0823 JAPAN				
Division:	Bio-Medical departm			, 072 0020 074 74		
Telephone number:	+81-72-820-3079	none				
FAX:	+81-72-820-3095					
Relevant identified uses of the substa		s advised against				
Relevant identified uses of the produ		-	ation system			
Uses advised against: For research u	-		·····			
azards identification						
GHS classification and label elements of	of the product					
Classification of the substance or mixtur	•					
Not applicable to GHS class	ification					
Label elements No hazard pictogram						
No Signal word						
omposition/information on ingredients						
· ·						
Mixture/Substance selection	Mixture					
Mixture/Substance selection	Mixture					
		Content(%)	CAS No.	7		
Ingredie		Content(%)	CAS No. 7732-18-5]		
Ingredie Water	nt name	80-100	CAS No. 7732-18-5]		
Ingredie Water Note : The figures shown	nt name above are not the specific.	80-100 ations of the product.	7732-18-5]		
Ingredie Water Note : The figures shown	nt name	80-100 ations of the product.	7732-18-5]		
Ingredie Water Note : The figures shown	nt name above are not the specific.	80-100 ations of the product.	7732-18-5]		
Ingredie Water Note : The figures shown Generally chemica	nt name above are not the specifica al substances greater than	80-100 ations of the product. 1% of the total are liste	7732-18-5	itable for situatio		
Ingredie Water Note : The figures shown Generally chemica	nt name above are not the specifica al substances greater than Rescuers should we	80-100 ations of the product. 1% of the total are liste ear proper personal p	7732-18-5			
Ingredie Water Note : The figures shown Generally chemica rst-aid measures Descriptions of first-aid measures	nt name above are not the specifica al substances greater than Rescuers should we Remove person to f	80-100 ations of the product. 1% of the total are liste ear proper personal p fresh air and keep co	7732-18-5 ed.			
Ingredie Water Note : The figures shown Generally chemica rst-aid measures Descriptions of first-aid measures	nt name above are not the specific al substances greater than Rescuers should we Remove person to f Call a POISON CEN	80-100 ations of the product. 1% of the total are liste ear proper personal p fresh air and keep co JTER or doctor/phys	7732-18-5 ed. protective equipment su pmfortable for breathing.			
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Ingredie Water Note : The figures shown Generally chemica rst-aid measures Descriptions of first-aid measures IF INHALED	nt name above are not the specific al substances greater than Rescuers should we Remove person to f Call a POISON CEN Remove contaminat If skin irritation occ	80-100 ations of the product. 1% of the total are liste ear proper personal p fresh air and keep co NTER or doctor/phys ted clothing. Wash w surs: Get medical adv	7732-18-5 ed. orotective equipment su omfortable for breathing. sician if you feel unwell. vith plenty of soap and v	vater.		
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Ingredie Water Note : The figures shown Generally chemica rst-aid measures Descriptions of first-aid measures IF INHALED IF ON SKIN(or hair) IF IN EYES IF SWALLOWED re-fighting measures Extinguishing media	above are not the specific al substances greater than Rescuers should we Remove person to f Call a POISON CEN Remove contaminat If skin irritation occ Rinse cautiously wit if present and easy If eye irritation pers Rinse mouth. Call a POISON CEN	80-100 ations of the product. 1% of the total are liste ear proper personal p fresh air and keep co NTER or doctor/phys ted clothing. Wash w surs: Get medical adv th water for several i to do. Continue rinsi sists: Get medical ad NTER or doctor/phys	7732-18-5 ed. protective equipment su perfortable for breathing. sician if you feel unwell. with plenty of soap and v rice/attention. minutes. Remove contact ing. vice/attention.	vater.		
Ingredie Water Note : The figures shown Generally chemica rst-aid measures Descriptions of first-aid measures IF INHALED IF ON SKIN(or hair) IF IN EYES IF SWALLOWED re-fighting measures Extinguishing media Suitable extinguishing media	above are not the specific al substances greater than Rescuers should we Remove person to f Call a POISON CEN Remove contaminat If skin irritation occ Rinse cautiously wit if present and easy If eye irritation pers Rinse mouth. Call a POISON CEN	80-100 ations of the product. 1% of the total are liste ear proper personal p fresh air and keep co JTER or doctor/phys ted clothing. Wash w surs: Get medical adv th water for several n to do. Continue rinsi sists: Get medical adv	7732-18-5 ed. protective equipment su perfortable for breathing. sician if you feel unwell. with plenty of soap and v rice/attention. minutes. Remove contact ing. vice/attention.	vater.		
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Ingredie Water Note : The figures shown Generally chemica rst-aid measures Descriptions of first-aid measures IF INHALED IF ON SKIN(or hair) IF IN EYES IF SWALLOWED re-fighting measures Extinguishing media Suitable extinguishing media	nt name above are not the specific al substances greater than Rescuers should we Remove person to f Call a POISON CEN Remove contaminat If skin irritation occ Rinse cautiously wit if present and easy If eye irritation pers Rinse mouth. Call a POISON CEN Carbon dioxide, dry None.	80-100 ations of the product. 1% of the total are liste ear proper personal p fresh air and keep co VTER or doctor/phys ted clothing. Wash w surs: Get medical adv th water for several p to do. Continue rinsi sists: Get medical add VTER or doctor/phys chemical and protein	7732-18-5 ed. protective equipment su perfortable for breathing. sician if you feel unwell. with plenty of soap and v rice/attention. minutes. Remove contact ing. vice/attention.	vater. ot lenses,		
Ingredie Water Note : The figures shown Generally chemica rst-aid measures Descriptions of first-aid measures IF INHALED IF ON SKIN (or hair) IF IN EYES IF SWALLOWED re-fighting measures Extinguishing media Suitable extinguishing media Extinguishing media to avoid Special fire fighting	nt name above are not the specific al substances greater than Rescuers should we Remove person to f Call a POISON CEN Remove contaminat If skin irritation occ Rinse cautiously wit if present and easy If eye irritation pers Rinse mouth. Call a POISON CEN Carbon dioxide, dry None. Keep personnel rem the environment.	80-100 ations of the product. 1% of the total are liste ear proper personal p fresh air and keep co JTER or doctor/phys ted clothing. Wash w surs: Get medical adv th water for several n to do. Continue rinsi sists: Get medical adv JTER or doctor/phys chemical and protein	7732-18-5 ed. protective equipment su perfortable for breathing, sician if you feel unwell. with plenty of soap and w rice/attention. minutes. Remove contact ing. vice/attention. sician if you feel unwell.	vater. ot lenses,		
Ingredie Water Note : The figures shown Generally chemica rst-aid measures Descriptions of first-aid measures IF INHALED IF ON SKIN (or hair) IF IN EYES IF SWALLOWED re-fighting measures Extinguishing media Suitable extinguishing media Extinguishing media to avoid	nt name above are not the specific al substances greater than Rescuers should we Remove person to f Call a POISON CEN Remove contaminat If skin irritation occ Rinse cautiously wit if present and easy If eye irritation pers Rinse mouth. Call a POISON CEN Carbon dioxide, dry None. Keep personnel rem the environment.	80-100 ations of the product. 1% of the total are liste ear proper personal p fresh air and keep co JTER or doctor/phys ted clothing. Wash w surs: Get medical adv th water for several n to do. Continue rinsi sists: Get medical adv JTER or doctor/phys chemical and protein	7732-18-5 ed. protective equipment su perfortable for breathing, sician if you feel unwell. vith plenty of soap and v rice/attention. minutes. Remove contact ing. vice/attention. sician if you feel unwell.	vater. ot 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.

Precaution	s 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						

9. Physical and Chemical Properties

Information	on basic physical and chemic	cal properties
Physical pro	perties	
	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

ļ	Bioaccumulation
	Mobilityinsoil
	Otherhazardous effects

Not established. Not established. Not established

3. 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 the product or waste.				
4. Transport Information				
UN	No, UN CLASS	Not applicable to L	IN NO.	
Marine transport	ation is regulated by IMDG C	ode. Air transportat	ion is regulated by IATA Dangerous Goods Regulations.	
IME)G	Not regulated as da	angerous goods.	
TAI	A	Not regulated as da	angerous goods.	
5. Regulatory Informati			a star of Obamical Substances	
			e etc. of Chemical Substances	
	ss 1 Specified Chemical Sub		Not regulated.	
	ss 2 Specified Chemical Sub		Not regulated.	
	e 1 Monitoring Chemical Su		Not regulated.	
	e 2 Monitoring Chemical Su		Not regulated.	
	e 3 Monitoring Chemical Su	bstance:	Not regulated.	
Industrial Safety		blo	Not regulated	
	ngerous Substances Flamma		Not regulated.	
	ngerous Substances Flamma		Not regulated.	
	ngerous Substances Oxidizin	-	Not regulated.	
	ngerous Substances Explosiv		Not regulated.	
	ngerous Substances Ignitable		Not regulated.	
	mful Substances Carcinoger		Not regulated.	
	ss 1 Designated Chemical S		Not regulated.	
	ss 2 Designated Chemical S		Not regulated.	
	ss 3 Designated Chemical S		Not regulated.	
	ss 1 Organic Solvents Prepa		Not regulated.	
	ss 2 Organic Solvents Prepa		Not regulated.	
	ss 3 Organic Solvents Prepa	arations:	Not regulated.	
	ifiable Substance:		Not regulated.	
	Labeling Requirements:		Not regulated.	
	iers:	4	Not regulated.	
	eleterious Substances Con		Nation of the d	
	cified Poisonous Substance		Not regulated.	
•	cified Poisonous Substance		Not regulated.	
	sonous Substances – Main I		Not regulated.	
	sonous Substances - Cabin		Not regulated.	
	eterious Substances - Main		Not regulated.	
	eterious Substances - Cabir avecament Order Article 22-1		Not regulated.	
	orcement Order Article 32-2		Not regulated.	
	orcement Order Article 32-3	J.	Not regulated.	
	Considered Poisonous:		Not regulated.	
	Considered Deleterious:		Not regulated.	
	oinet Order, Preparations:		Not regulated.	
Fire Service Law			Net us sulate d	
	ss 1 Oxidizing Solids:		Not regulated.	
	ss 2 Flammable Solids:		Not regulated.	
	ss 3 Spontaneous combustil	bility and	Not regulated.	
	ter-reactivity Substances:		Not regulated.	
	ss 4 Flammable Liquids:		Not regulated.	
	ss 5 Self-Reactive Substand	ues:	Not regulated.	
	ss 6 Oxidizing Liquids:		Not regulated.	
	signated Flammable Substan	ces:	Not regulated.	
	rage Reporting Substance:		Not regulated.	
Japan PRTR			N	
	cific Class 1 Designated Su		Not regulated.	
	ss 1 Designated Substance:		Not regulated.	
Cla	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 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 NITE CHRIP (http://www.safe.nite.go.jp/japan/sougou/view/SystemTop.jp.faces)

General Disclaimer

Date of issue 10/9/2018

ntification of the substance/mixture and	of the company/undertaking
Product identifier:	
Product name:	Ethanol
Product code:	Ethanol
SDS NO:	ETOH_JPE_1
Details of the supplier of the safety dat	a sheet
Manufacturer/Supplier:	KURABO INDUSTRIES LTD.
Address:	Neyagawa Techno Center, 14-5 Shimokida-cho, Neyagawa, Osaka, 572-0823 JAPAN
Division:	Bio-Medical department
Telephone number:	+81-72-820-3079
FAX:	+81-72-820-3095
	nce or mixture and uses advised against
	ct: Reagents for automated nucleic acid isolation system
Uses advised against: For research us	se only
ards identification	
GHS classification and label elements o	f the product
Classification of the substance or mixtur	e
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
	Category 1(liver)
Label elements	Category 2(Central nervous system)
	Category 2(Central nervous system)
Label elements	
	Category 2(Central nervous system)
Signal word:	Category 2(Central nervous system)
Signal word: HAZARD STATEMENT	Category 2(Central nervous system) Danger uid and vapor
Signal word: HAZARD STATEMENT H225 Highly flammable liqu	Category 2(Central nervous system) Danger uid and vapor
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H320 Causes eye irritation	Category 2(Central nervous system) Danger uid and vapor
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H320 Causes eye irritatior H350 May cause cancer	Category 2(Central nervous system) Danger uid and vapor or the unborn child
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H320 Causes eye irritation H350 May cause cancer H360 May damage fertility	Category 2(Central nervous system) Danger uid and vapor or the unborn child ry irritation
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H320 Causes eye irritatior H350 May cause cancer H360 May damage fertility H335 May cause respirato H336 May cause drowsine	Category 2(Central nervous system) Danger uid and vapor or the unborn child ry irritation
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H320 Causes eye irritation H350 May cause cancer H360 May damage fertility H335 May cause respirato H336 May cause drowsine H372 Causes damage to H373 May cause damage	Category 2(Central nervous system) Danger Juid and vapor or the unborn child ry irritation ss or dizziness organs through prolonged or repeated exposure to organs through prolonged or repeated exposure
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H320 Causes eye irritation H350 May cause cancer H360 May damage fertility H335 May cause respirato H336 May cause drowsine H372 Causes damage to H373 May cause damage PRECAUTIONARY STATE	Category 2(Central nervous system) Danger Juid and vapor or the unborn child ry irritation ss or dizziness organs through prolonged or repeated exposure to organs through prolonged or repeated exposure
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H320 Causes eye irritation H350 May cause cancer H360 May damage fertility H335 May cause respirato H336 May cause drowsine H372 Causes damage to H373 May cause damage PRECAUTIONARY STATE Prevention	Category 2(Central nervous system) The construction of the unborn child ry irritation ss or dizziness organs through prolonged or repeated exposure to organs through prolonged or repeated exposure
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H320 Causes eye irritation H350 May cause cancer H360 May damage fertility H335 May cause respirato H336 May cause drowsine H372 Causes damage to H373 May cause damage PRECAUTIONARY STATE Prevention P201 Obtain special instru	Category 2(Central nervous system) The construction of the unborn child ry irritation ss or dizziness organs through prolonged or repeated exposure to organs through prolonged or repeated exposure
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H320 Causes eye irritation H350 May cause cancer H360 May damage fertility H335 May cause respirato H336 May cause drowsine H372 Causes damage to H373 May cause damage PRECAUTIONARY STATE Prevention P201 Obtain special instru P202 Do not handle until a	Category 2(Central nervous system) The construction of the unborn child ry irritation ss or dizziness organs through prolonged or repeated exposure to organs to organ to organs to organs torg
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H320 Causes eye irritation H350 May cause cancer H360 May damage fertility H335 May cause respirato H336 May cause drowsine H372 Causes damage to H373 May cause damage PRECAUTIONARY STATE Prevention P201 Obtain special instru P202 Do not handle until a P210 Keep away from hea	Category 2(Central nervous system) The construction of the unborn child ry irritation ss or dizziness organs through prolonged or repeated exposure to organs through prolonged or repeated exposure to organ to organs through prolonged or rep
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H320 Causes eye irritation H350 May cause cancer H360 May damage fertility H335 May cause respirato H336 May cause drowsine H372 Causes damage to H373 May cause damage PRECAUTIONARY STATE Prevention P201 Obtain special instru P202 Do not handle until a P210 Keep away from hea P233 Keep container tight	Category 2(Central nervous system) The construction of the unborn child ry irritation ss or dizziness organs through prolonged or repeated exposure to organs through prolonged or repeated exp
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Signal word: HAZARD STATEMENT H225 Highly flammable liqu H320 Causes eye irritation H350 May cause cancer H360 May damage fertility H335 May cause cancer H360 May damage fertility H335 May cause drowsine H372 Causes damage to H373 May cause damage PRECAUTIONARY STATE Prevention P201 Obtain special instru P202 Do not handle until a P210 Keep away from hea P233 Keep container tight P240 Ground/bond contai P241 Use explosion-proof	Category 2(Central nervous system) The system of the unborn child ry irritation so or the unborn child ry irritation so or dizziness organs through prolonged or repeated exposure to organs through prolonged or repeated exposure to organs through prolonged or repeated exposure EMENT nections before use. all safety precautions have been read and understood. t, hot surfaces, sparks, open flames and other ignition sources. No smoking. dy closed. mer and receiving equipment. electrical/ventilating/lighting/equipment.
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H320 Causes eye irritation H350 May cause cancer H360 May damage fertility H335 May cause respirato H336 May cause drowsine H372 Causes damage to H373 May cause damage PRECAUTIONARY STATE Prevention P201 Obtain special instru P202 Do not handle until a P210 Keep away from hea P233 Keep container tight P240 Ground/bond contai P241 Use explosion-proof P242 Use only non-sparki	Category 2(Central nervous system) The system of the unborn child ry irritation so or the unborn child ry irritation so or dizziness organs through prolonged or repeated exposure to organs through prolonged or repeated exposure to organs through prolonged or repeated exposure EXENT retions before use. all safety precautions have been read and understood. t, hot surfaces, sparks, open flames and other ignition sources. No smoking. dy closed. mer and receiving equipment. electrical/ventilating/lighting/equipment. ng tools.
Signal word: HAZARD STATEMENT H225 Highly flammable liqu H320 Causes eye irritation H320 Causes eye irritation H350 May cause cancer H360 May damage fertility H335 May cause respirato H336 May cause drowsine H372 Causes damage to H373 May cause damage PRECAUTIONARY STATE Prevention P201 Obtain special instru P202 Do not handle until a P210 Keep away from hea P233 Keep container tight P240 Ground/bond contai P241 Use explosion-proof P242 Use only non-sparki P243 Take precautionary	Category 2(Central nervous system) The system of the unborn child ry irritation so or the unborn child ry irritation so or dizziness organs through prolonged or repeated exposure to organs through prolonged or repeated exposure EXENT retions before use. all safety precautions have been read and understood. t, hot surfaces, sparks, open flames and other ignition sources. No smoking. dy closed. mer and receiving equipment. electrical/ventilating/lighting/equipment. electrical.
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Signal word: HAZARD STATEMENT H225 Highly flammable liqu H320 Causes eye irritation H320 Causes eye irritation H350 May cause cancer H360 May damage fertility H335 May cause respirato H336 May cause drowsine H372 Causes damage to H373 May cause damage PRECAUTIONARY STATE Prevention P201 Obtain special instru P202 Do not handle until a P210 Keep away from hea P233 Keep container tight P240 Ground/bond contai P241 Use explosion-proof P242 Use only non-sparki P243 Take precautionary of P260 Do not breathe dust P261 Avoid breathing dust	Category 2(Central nervous system)
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Cofoty 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,

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 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

Use personal protective equipment as required.	
Remove person to fresh air and keep comfortable for breathing.	
Call a POISON CENTER or doctor/physician if you feel unwell.	
Remove contaminated clothing. Wash with plenty of soap and water.	
If symptoms persist, Get medical advice/attention.	
Rinse cautiously with water for several minutes. Remove contact lenses,	
if present and easy to do. Continue rinsing.	
Immediate medical attention is required.	
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.	

5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	Dry chemical, CO2, water spray or alcohol-resistant foam, Water spray (fog)
Extinguishing media to avoid	No information available.
Special extinguishing method	No information available.
Specific hazards arising from the ch	emical product
	Extremely flammable
Protection of fire-fighters	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.

Recoverly, neutralization

No information available

Secondary disaster prevention measures

Clean contaminated objects and areas thoroughly observing environmental regulations.

landling and storage Precautions for safe handling				
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	otective 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 clothing, protective boots.		

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 properties			
A	ppearance:	Liquid	
С	olor:	Colourless, Clear	
Odor:		characteristic odor	
pl	4:	No data available	
М	elting point/freezing point:	-117°C	
	oiling point, initial boiling point nd boiling range	78°C	
Flash point:		13°C	
	pper/lower flammability or plosive limits		
	pper: ower:	19.0 vol% 3.3 vol%	
Specific Gravity / Relative density:		0.789–0.791	
Auto-ignition temperature:		371°C	
Solubility	Solubility		
W	ater , Diethyl ether:	soluble	
	-Octanol/water partition pefficient:(log Pow):	-0.32	
Auto-ignition ter	mperature:	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 toxicity				
	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 – 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 dustsource 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 co	rrosion irritation source inf	ormation	
Ethanol	Based or	n the NITE GHS classification	on results.	
erious eyedamage/eye irritation				
Chemical Name	Seriou	is eye damage source infor	mation	
Ethanol	Based or	n the NITE GHS classification	on results.	
espiratory or skin sensitization				
Chemical Name	Respiratory	, Skin sensitization source	information	
Ethanol	Based or	n the NITE GHS classificatio	on results.	
eproductive cell mutagenicity				
Chemical Name	N	lutagenic source information	on	
Ethanol	Based or	n the NITE GHS classificatio	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	Reproc	luctive toxicity source info	rmation	
Ethanol	Based or	n the NITE GHS classificatio	on results.	
TOT-single exposure				
Chemical Name	STOT -	single exposure- source inf	formation	
Ethanol	Based or	n the NITE GHS classification	on results.	
TOT-repeated exposure				
Chemical Name	STOT -re	peated exposure- source i	nformation	
Ethanol	Based or	n the NITE GHS classificatio	on results.	
spiration hazard				
Chemical Name	Aspi	ration Hazard source inforn	nation	
Ethanol	Based or	n the NITE GHS classificatio	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
		(2)-202
	Regulated.	(z) = z u z
Industrial	Regulated. Safety and Health Act	(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 Regulatior	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 Regulatior 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 Regulatior 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 Regulatior 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

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General Disclaimer

Date of issue 03/15/2019

Product identifier:				
Product name:	Solubilization Bu	uffer		
Product code:	SRT-02			
SDS NO:	SRT02_JPE_1			
Details of the supplier of the safety da	ita sheet			
Manufacturer/Supplier:	KURABO INDUS	STRIES LTD.		
Address:	Neyagawa Tech	no Center, 14–5 Shimokid	la−cho, Neyagawa, Osal	ka, 572-0823 JAPA
Division:	Bio-Medical dep	partment		
Telephone number:	+81-72-820-30	79		
FAX:	+81-72-820-30	95		
Relevant identified uses of the subst	ance or mixture and	uses advised against		
Relevant identified uses of the produ	uct: Reagents for aut	omated nucleic acid isola	ation system	
Uses advised against: For research u	ise only			
ards identification				
GHS classification and label elements	of the product			
Classification of the substance or mixtu	re			
Not applicable to GHS class	sification			
Label elements				
No hazard pictogram				
No hazard pictogram				
No hazard pictogram				
No hazard pictogram No Signal word	Mixture			
No hazard pictogram No Signal word nposition/information on ingredients	Mixture			
No hazard pictogram No Signal word nposition/information on ingredients Mixture/Substance selection	Mixture ont name	Content(%)	CAS No.	
No hazard pictogram No Signal word nposition/information on ingredients Mixture/Substance selection	ent name	Content(%) 10-20	CAS No.	
No hazard pictogram No Signal word nposition/information on ingredients Mixture/Substance selection Ingredie	ent name tty acid ester		CAS No.	
No hazard pictogram No Signal word nposition/information on ingredients Mixture/Substance selection Ingredie polyoxyethylene sorbitan fat	ent name tty acid ester	10-20	CAS No. 	
No hazard pictogram No Signal word nposition/information on ingredients Mixture/Substance selection Ingredie polyoxyethylene sorbitan fat hydrochloride salts of amino Water	ont name tty acid ester palcohol	10-20 1-5 Balance		
No hazard pictogram No Signal word nposition/information on ingredients Mixture/Substance selection Ingredie polyoxyethylene sorbitan far hydrochloride salts of amino Water Note : The figures shown	ont name tty acid ester palcohol n above are not the spe	10-20 1-5 Balance cifications of the product.		
No hazard pictogram No Signal word nposition/information on ingredients Mixture/Substance selection Ingredie polyoxyethylene sorbitan far hydrochloride salts of amino Water Note : The figures shown	ont name tty acid ester palcohol n above are not the spe	10-20 1-5 Balance		
No hazard pictogram No Signal word nposition/information on ingredients Mixture/Substance selection Ingredie polyoxyethylene sorbitan far hydrochloride salts of amino Water Note : The figures shown	ont name tty acid ester palcohol n above are not the spe	10-20 1-5 Balance cifications of the product.		
No hazard pictogram No Signal word mposition/information on ingredients Mixture/Substance selection Ingredie polyoxyethylene sorbitan fai hydrochloride salts of amino Water Note : The figures shown Generally chemica	ent name tty acid ester palcohol n above are not the spe al substances greater t	10-20 1-5 Balance cifications of the product. han 1% of the total are liste		suitable for situation
No hazard pictogram No Signal word mposition/information on ingredients Mixture/Substance selection Ingredie polyoxyethylene sorbitan fat hydrochloride salts of amino Water Note : The figures shown Generally chemica st-aid measures Descriptions of first-aid measures	ent name tty acid ester palcohol n above are not the spe al substances greater t Rescuers shoul	10-20 1-5 Balance cifications of the product. han 1% of the total are liste d wear proper personal p		
No hazard pictogram No Signal word mposition/information on ingredients Mixture/Substance selection Ingredie polyoxyethylene sorbitan fai hydrochloride salts of amino Water Note : The figures shown Generally chemica	ent name tty acid ester palcohol n above are not the spe al substances greater t Rescuers shoul Remove person	10-20 1-5 Balance cifications of the product. han 1% of the total are liste d wear proper personal p to fresh air and keep co		ıg.
No hazard pictogram No Signal word mposition/information on ingredients Mixture/Substance selection Ingredie polyoxyethylene sorbitan fat hydrochloride salts of amino Water Note : The figures shown Generally chemica st-aid measures Descriptions of first-aid measures IF INHALED	ent name tty acid ester palcohol n above are not the spe al substances greater t Rescuers shoul Remove person Call a POISON	10-20 1-5 Balance cifications of the product. han 1% of the total are liste d wear proper personal p to fresh air and keep co CENTER or doctor/phys		ng. I.
No hazard pictogram No Signal word mposition/information on ingredients Mixture/Substance selection Ingredie polyoxyethylene sorbitan fat hydrochloride salts of amino Water Note : The figures shown Generally chemica st-aid measures Descriptions of first-aid measures	ent name tty acid ester palcohol a above are not the spe al substances greater t Rescuers shoul Remove person Call a POISON Remove contan	10-20 1-5 Balance reifications of the product. han 1% of the total are liste d wear proper personal p to fresh air and keep co CENTER or doctor/phys ninated clothing. Wash v		ng. I.
No hazard pictogram No Signal word mposition/information on ingredients Mixture/Substance selection Ingredie polyoxyethylene sorbitan fat hydrochloride salts of amino Water Note : The figures shown Generally chemica st-aid measures Descriptions of first-aid measures IF INHALED IF ON SKIN(or hair)	ent name tty acid ester palcohol above are not the spe al substances greater t Rescuers shoul Remove person Call a POISON Remove contan If skin irritation	10-20 1-5 Balance reifications of the product. han 1% of the total are liste d wear proper personal p to fresh air and keep co CENTER or doctor/phys ninated clothing. Wash v occurs: Get medical adv		ng. I. I water.
No hazard pictogram No Signal word mposition/information on ingredients Mixture/Substance selection Ingredie polyoxyethylene sorbitan fat hydrochloride salts of amino Water Note : The figures shown Generally chemica st-aid measures Descriptions of first-aid measures IF INHALED	ent name tty acid ester palcohol above are not the spe al substances greater t Rescuers shoul Remove person Call a POISON Remove contan If skin irritation Rinse cautious!	10-20 1-5 Balance cifications of the product. han 1% of the total are liste d wear proper personal p to fresh air and keep co CENTER or doctor/phys ninated clothing. Wash v occurs: Get medical adv y with water for several		ng. I. I water.
No hazard pictogram No Signal word mposition/information on ingredients Mixture/Substance selection Ingredie polyoxyethylene sorbitan fat hydrochloride salts of amino Water Note : The figures shown Generally chemica st-aid measures Descriptions of first-aid measures IF INHALED IF ON SKIN(or hair)	ent name tty acid ester palcohol above are not the spe al substances greater t Rescuers shoul Remove person Call a POISON Remove contan If skin irritation Rinse cautiously if present and e	10-20 1-5 Balance cifications of the product. han 1% of the total are liste d wear proper personal p to fresh air and keep co CENTER or doctor/phys ninated clothing. Wash v occurs: Get medical adv y with water for several easy to do. Continue rins		ng. I. I water.
No hazard pictogram No Signal word mposition/information on ingredients Mixture/Substance selection Ingredie polyoxyethylene sorbitan fat hydrochloride salts of amino Water Note : The figures shown Generally chemica st-aid measures Descriptions of first-aid measures IF INHALED IF ON SKIN(or hair)	ent name tty acid ester palcohol above are not the spe al substances greater t Rescuers shoul Remove person Call a POISON Remove contan If skin irritation Rinse cautiously if present and e	10-20 1-5 Balance cifications of the product. han 1% of the total are liste d wear proper personal p to fresh air and keep co CENTER or doctor/phys ninated clothing. Wash v occurs: Get medical adv y with water for several		ng. I. I water.
No hazard pictogram No Signal word mposition/information on ingredients Mixture/Substance selection Ingredie polyoxyethylene sorbitan fat hydrochloride salts of amino Water Note : The figures shown Generally chemica st-aid measures Descriptions of first-aid measures IF INHALED IF ON SKIN(or hair)	ent name tty acid ester palcohol above are not the spe al substances greater t Rescuers shoul Remove person Call a POISON Remove contan If skin irritation Rinse cautiously if present and e	10-20 1-5 Balance cifications of the product. han 1% of the total are liste d wear proper personal p to fresh air and keep co CENTER or doctor/phys ninated clothing. Wash v occurs: Get medical adv y with water for several easy to do. Continue rins		ng. I. I water.

Safety Data Sheet

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.

7. Handling and storage

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

Physical pro	operties		
	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 Conditions to avoid Hazardous decomposition products

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

11. Toxicological Information

Acute toxicity

TestResults
Skin corrosion/irritation

Acute Oral LD50 Rat: > 2000 mg/kg No irritation

	amage/eye irritation 	non irritant	
Carcinogenic	ity	Substances in group [1	;2A;2B] by IARC (International Agency for Research on Cancer):None
2. Ecological Inform	nation		
Bioaccumula	tion	Not established.	
Mobilityinso	il	Not established.	
Otherhazardous effects Not		Not established	
3. Disposal conside	arations		
	professional with manifest	-	ect entire waste and then charge to a licensed industrial waste low the laws and regulations in your country while disposing of this
4. Transport Inform	nation		
	UN No, UN CLASS	Not applicable to L	JN NO.
Marine trans	portation is regulated by I	MDG Code. Air transportat	ion is regulated by IATA Dangerous Goods Regulations.
	IMDG	Not regulated as da	angerous goods.
		Not regulated as da	angerous goods.
	Emergency Response G	uide Number	171
5. Regulatory Infor	mation		
		Regulation of Manufactur	e etc. of Chemical Substances
	Class 1 Specified Chemic	al Substance:	Not regulated.
	Class 2 Specified Chemic	al Substance:	Not regulated.
	Type 1 Monitoring Chemi	cal Substance:	Not regulated.
	Type 2 Monitoring Chemi	cal Substance:	Not regulated.
	Type 3 Monitoring Chemi	cal Substance:	Not regulated.
Industrial Sa	fety and Health Law		
	Dangerous Substances F	lammable:	Not regulated.
	Dangerous Substances F	lammable Gases:	Not regulated.
	Dangerous Substances C	xidizing:	Not regulated.
	Dangerous Substances E	xplosives:	Not regulated.
	Dangerous Substances Ig	nitable:	Not regulated.
	Harmful Substances Card	cinogen:	Not regulated.
	Class 1 Designated Chem	nical Substances:	Not regulated.
	Class 2 Designated Chem	nical Substances:	Not regulated.
	Class 3 Designated Chem	nical Substances:	Not regulated.
	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 Substance	s Control Law	
	Specified Poisonous Sub	stance – Main Law:	Not regulated.
	Specified Poisonous Sub	stance – 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 Artic	le 32–2:	Not regulated.
	Enforcement Order Artic	le 32–3:	Not regulated.
	Not Considered Poisonou	IS:	Not regulated.
	Not Considered Deleteric	ous:	Not regulated.
	Cabinet Order, Preparatio	ons:	Not regulated.
Fire Service	Law		
	Class 1 Oxidizing Solids:		Not regulated.
	Class 2 Flammable Solids	:	Not regulated.
	Class 3 Spontaneous con	nbustibility and	Not regulated.
	Water-reactivity Substa	-	Not regulated.
	•		

Designated Flammable Substances: Storage Reporting Substance: Japan PRTR Specific Class 1 Designated Substance: Class 1 Designated Substance:	Not regulated.
Storage Reporting Substance: Japan PRTR Specific Class 1 Designated Substance: Class 1 Designated Substance:	
Japan PRTR Specific Class 1 Designated Substance: Class 1 Designated Substance:	Not regulated.
· Specific Class 1 Designated Substance: Class 1 Designated Substance:	Not regulated.
Class 1 Designated Substance:	
	Not regulated.
Class 2 Designated Substance:	Not regulated.
	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 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

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