



Safety Data Sheet

This safety data sheet complies with the requirements of:
JIS Z 7253:2019

Revision Date 2021-02-06
Revision Number 5

1. Identification

Product Name 5X RNA (ssDNA) Ligation Buffer
Product Code SD1042
CAS-No 7732-18-5
Registration number No information available

Details of the supplier of the safety data sheet

Supplier

Japan:

Takara Bio Inc.

Nojihigashi 7-4-38

Kusatsu, Shiga 525-0058, Japan

Phone: +81.77.565.6972

Web: www.takara-bio.com

China:

Takara Biomedical Technology (Beijing) Co., Ltd.

Life Science Park, 22 KeXueYuan Road, Changping District,

Beijing 102206, China

Phone: +86 10 8072 0980

Web: www.takarabiomed.com.cn

Emergency telephone number In case of emergency, call PERS (Professional Emergency Resource Services)
1-800-633-8253 (US) or 801-629-0667 (international).

Recommended use of the chemical and restrictions on use

Identified uses For research use only. Not for use in diagnostic procedures

Restrictions on use No information available

2. Hazard(s) identification

GHS Classification

Not classified

Acute toxicity - Oral	Classification not possible
Acute toxicity - Dermal	Classification not possible
Acute toxicity - Inhalation (Gases)	Classification not applicable
Acute toxicity - Inhalation (Vapors)	Classification not possible
Acute toxicity - Inhalation (Dusts/Mists)	Classification not possible
Skin corrosion/irritation	Classification not possible
Serious eye damage/eye irritation	Classification not possible
Respiratory sensitization	Classification not possible
Skin sensitization	Classification not possible
Germ cell mutagenicity	Classification not possible
Carcinogenicity	Classification not possible
Reproductive toxicity	Classification not possible
Effects on or via lactation	No effects on or via lactation
Specific target organ toxicity (single exposure)	Classification not possible
Specific target organ toxicity (repeated exposure)	Classification not possible
Aspiration hazard	Classification not possible
Acute aquatic toxicity	Classification not possible
Chronic aquatic toxicity	Classification not possible
Ozone	Classification not possible

GHS label elements**Hazard Statements**

Not classified

Prevention

• Not applicable

Response

• Not applicable

Storage

• Not applicable

Disposal

• Not applicable

Other hazards

No information available.

3. Composition/information on ingredients**Pure substance/mixture**

Mixture

CAS-No

7732-18-5

Chemical name	CAS No	Weight-%	ENCS Inventory	ENCS Number	ISHL Inventory	ISHL No
HEPES	7365-45-9	5 - 10	No information available		No information available	
Magnesium chloride hexahydrate	7791-18-6	1 - 5	Existing	(1)-233	Existing	(1)-233
Hexaamminecobalt(III) chloride	10534-89-1	0.1 - 1	No information available		Existing	1-(1)-270

Pollutant Release and Transfer Registry (PRTR)

Not applicable

Industrial Safety and Health Law**ISHL Notifiable Substances**

ISHL Notifiable Substances - information (safety data sheet) to be supplied; Industrial Safety and Health Law enforcement order Table 9 (related to Industrial Safety and Health Law article 57-2 and ISHL Ordinance Article 34-2-4)

Chemical name	CAS No	Category	Ordinance number	Content rate %
Hexaamminecobalt(III) chloride	10534-89-1	ISHL Notifiable Substances	172	<10

Harmful Substances Whose Names Are to be Indicated on the Label

Harmful Substances - names to be indicated on the label; Industrial Safety and Health Law enforcement order Table 9 (related to Industrial Safety and Health Law article 57 and ISHL Ordinance Article 33)

Chemical name	CAS No	Category	Ordinance number	Content rate %
Hexaamminecobalt(III) chloride	10534-89-1	Harmful Substances Whose Names Are to be Indicated on the Label	172	<10

Poisonous and Deleterious Substances Control Law

Not applicable

4. First-aid measures**In case of inhalation**

Remove to fresh air.

In case of skin contact	Wash skin with soap and water.
In case of eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
In case of ingestion	Clean mouth with water and drink afterwards plenty of water.
Most important symptoms/effects, acute and delayed	No information available.
Note to physicians	Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.
Specific hazards arising from the chemical	No information available.
Special Extinguishing Media Large Fire	Cool drums with water spray. CAUTION: Use of water spray when fighting fire may be inefficient.
Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Ensure adequate ventilation.
For emergency responders	Use personal protection recommended in Section 8.
Environmental precautions	See Section 12 for additional Ecological Information.
Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

7. Handling and storage

Handling	
Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.
Storage	
Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls/personal protection

Engineering controls	Showers Eyewash stations
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Exposure guidelines Ventilation systems.
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical name	Japan Society of Occupational Health	ISHL Working Environmental Evaluation Standards - Administrative Control Levels	ACGIH TLV
Hexaammincobalt(III) chloride 10534-89-1	TWA: 0.05 mg/m ³ 1S+ ISHL/ACL: 0.02 mg/m ³ 1A+ C2B	0.02mg/m ³	TWA: 0.02 mg/m ³

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Chemical name	Japan Society of Occupational Health	ACGIH
Hexaammincobalt(III) chloride 10534-89-1	3 µg/L - blood (Cobalt) - within 2 h prior to end of shift at end of work week 35 µg/L - urine (Cobalt) - within 2 h prior to end of shift at end of work week	15

Environmental exposure controls No information available.

Personal Protective Equipment

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Eye/face protection

No special protective equipment required.

Skin and body protection

No special protective equipment required.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Aqueous solution
Physical state	Liquid
Color	No information available
Odor	Unpleasant
Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point		No information available
Boiling point/boiling range (°C)		No information available
Flammability (solid, gas)		No information available
Upper/lower flammability or explosive limits		
Upper flammability limit:		
Lower flammability limit:		
Flash point		ASTM D 56
Evaporation Rate		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
pH		No information available
Viscosity		
Kinematic viscosity		No information available
Dynamic Viscosity		No information available
Water solubility		No information available
Solubility in other solvents		No information available
Partition Coefficient (n-octanol/water)		No information available
Vapor pressure		No information available
Vapor density		No information available
Relative density		No information available
Particle characteristics		
Particle Size		Not applicable

Particle Size Distribution

Not applicable

Other information

Explosive properties No information available
Oxidizing properties No information available

10. Stability and reactivity

Reactivity No information available.
Chemical stability Stable under normal conditions.
Possibility of hazardous reactions None under normal processing.
Incompatible materials None known based on information supplied.
Hazardous Decomposition Products None known based on information supplied.
Explosion Data
Sensitivity to static discharge None.
Sensitivity to mechanical impact None.

11. Toxicological information

Acute toxicity**Numerical measures of toxicity - Product Information**

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 30,989.50 mg/kg

0.61425 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
 8.6051 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
 8.6051 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
 8.6051 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
 8.6051 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
HEPES	> 2000 mg/kg (Rat)	-	-
Magnesium chloride hexahydrate	= 8100 mg/kg (Rat)	-	-

Abbreviations and acronyms

Rat: Rat

Symptoms No information available.

Product Information

Ingestion Specific test data for the substance or mixture is not available.

Inhalation Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin corrosion/irritation Based on available data, the classification criteria are not met. Classification not possible.

Serious eye damage/eye irritation Based on available data, the classification criteria are not met. Classification not possible.

Respiratory or skin sensitization Classification not possible.

Germ cell mutagenicity Based on available data, the classification criteria are not met. Classification not possible.

Carcinogenicity Based on available data, the classification criteria are not met. Classification not possible.

Chemical name	Japan	IARC
Hexaamminecobalt(III) chloride 10534-89-1	-	Group 2B

Reproductive toxicity Based on available data, the classification criteria are not met. Classification not possible.

STOT - single exposure Based on available data, the classification criteria are not met. Classification not possible.

STOT - repeated exposure Based on available data, the classification criteria are not met. Classification not possible.

Aspiration hazard Based on available data, the classification criteria are not met. Classification not possible.

12. Ecological information

Ecotoxicity Classification not possible.

Percentage for unknown hazards 0.61425 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Crustacea
HEPES	-	100: 96 h Danio rerio mg/L LC50 static	-
Magnesium chloride hexahydrate	82.7: 72 h Pseudokirchneriella subcapitata mg/L EC50	1970 - 3880: 96 h Pimephales promelas mg/L LC50 static	140: 48 h Daphnia magna mg/L EC50 Static

Persistence and degradability No information available.

Bioaccumulation No information available.

Hazardous to the ozone layer Classification not possible. Based on available data, the classification criteria are not met.
Other adverse effects No information available.

13. Disposal considerations

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

14. Transport information

IMDG Not regulated

<u>ADR</u>	Not regulated
<u>IATA</u>	Not regulated
<u>Japan</u>	Not regulated

15. Regulatory information

National regulations

Pollutant Release and Transfer Registry (PRTR)

Not applicable

Industrial Safety and Health Law

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ISHL Notifiable Substances

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ISHL Working Environmental Evaluation Standards - Administrative Control Levels

Subject to working environment measurements (related to Industrial Safety and Health Law Enforcement Order article 21 and Working Environment Evaluation Standards - administrative control levels). For further specification, refer to section 8 of the SDS.

Poisonous and Deleterious Substances Control Law

Not applicable

Fire Service Law:

Not applicable

Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL)

Not applicable

Act on Prevention of Marine Pollution and Maritime Disaster

Not applicable

Labor Standards Act

Occupational illnesses caused by chemical substances - Labor Standards Act article 75, Enforcement Ordinance article 35 and Notification Designating Elements and Compounds of Chemical Substances and Occupational Illnesses Table 1-2 item 4-1

Air Pollution Control Law

Hazardous air pollutants (HAPs) per Air Pollution Control Law article 2, paragraph 1, item 3 and Enforcement Order article 1

International Regulations

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

IECSC

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

16. Other information

Revision Date 2021-02-06
Revision Note No information available.

Key or legend to abbreviations and acronyms used in the safety data sheetLegend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	Time weighted average	Ceiling	Maximum limit value
*	Skin designation	+	Sensitizers

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Chemicals Agency
 European Food Safety Authority (EFSA)
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGl(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 Japan GHS Classification
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program
 Organization for Economic Co-operation and Development Screening Information Data Set
 World Health Organization

Disclaimer

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End of Safety Data Sheet