



Safety Data Sheet

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

Revision Date 2021-02-06
Revision Number 8

1. Identification

Product Name BcaBEST™ Polymerase
Product Code SD2125
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

Acute toxicity - Oral	Category 4
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)	Category 4
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)	Category 1
Category 1 blood system, Central nervous system, Heart, Kidneys.	
Category 3 Target organ effects: Respiratory irritation.	
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**Signal word**

Danger

Hazard Statements

Harmful if swallowed

Harmful if inhaled

Causes damage to organs

Causes damage to the following organs: blood system, Central nervous system, Heart, Kidneys.

Prevention

- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Use only outdoors or in a well-ventilated area
- Do not breathe dust/fume/gas/mist/vapors/spray

Response

- IF exposed or concerned: Call a POISON CENTER or doctor
- Specific treatment (see .? on this label)
- IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
- Rinse mouth
- IF INHALED: Remove person to fresh air and keep comfortable for breathing
- Call a POISON CENTER or doctor if you feel unwell

Storage

- Store locked up

Disposal

- Dispose of contents/container to an approved waste disposal plant

Other hazards

No information available.

3. Composition/information on ingredients

Pure substance/mixture

Mixture

Chemical name	CAS No	Weight-%	ENCS Inventory	ENCS Number	ISHL Inventory	ISHL No
Ethylene glycol	107-21-1	30 - 60	Existing	(2)-230	Existing	(2)-230

Pollutant Release and Transfer Registry (PRTR)

Not applicable

Industrial Safety and Health LawISHL 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 %
Ethylene glycol	107-21-1	ISHL Notifiable Substances	075	50 - 60

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 %
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Ethylene glycol	107-21-1	Harmful Substances Whose Names Are to be Indicated on the Label	075	50 - 60
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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 controlsShowers
Eyewash stations
Ventilation systems.**Exposure guidelines**

Chemical name	Japan Society of Occupational Health	ISHL Working Environmental Evaluation Standards - Administrative Control Levels	ACGIH TLV
Ethylene glycol 107-21-1	-	-	STEL 50 ppm STEL 10 mg/m ³ TWA: 25 ppm

Biological occupational exposure limits

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

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**

Clear, colorless

Physical state

Liquid

Color

Clear

Odor

Unpleasant

Odor Threshold

No information available

Property**Values****Remarks • Method****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

398 °C / 748.4 °F

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

No information available

(n-octanol/water)

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)	897.70 mg/kg
ATEmix (dermal)	19,030.50 mg/kg
ATEmix (inhalation-dust/mist)	2.69 mg/l

- 1.61345 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 1.61345 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 57.31345 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
- 57.31345 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
- 1.61345 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ethylene glycol	= 4700 mg/kg (Rat)	= 10600 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.
Reproductive toxicity	Based on available data, the classification criteria are not met. Classification not possible.
Target organ effects	Respiratory system. Eyes. Skin. Central nervous system. Causes damage to the following organs: blood system, Central nervous system, Heart, Kidneys.
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	0.61345 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Ethylene glycol	6500 - 13000: 96 h Pseudokirchneriella subcapitata mg/L EC50	14 - 18: 96 h Oncorhynchus mykiss mL/L LC50 static 40000 - 60000: 96 h Pimephales promelas mg/L LC50 static 16000: 96 h Poecilia reticulata mg/L LC50 static 27540: 96 h Lepomis macrochirus mg/L LC50 static 40761: 96 h Oncorhynchus mykiss mg/L LC50 static 41000: 96 h Oncorhynchus mykiss mg/L LC50	46300: 48 h Daphnia magna mg/L EC50

Persistence and degradability	No information available.
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Bioaccumulation	There is no data for this product.
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Component Information

Chemical name	Partition coefficient
Ethylene glycol 107-21-1	-1.93

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

Notes	No components found suitable for Technical Name.
UN number or ID number	UN3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s.
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s., 9, III, Marine Pollutant
Transport hazard class(es)	9
Packing group	III
Marine pollutant	P
EmS-No	F-A, S-F
Special Provisions	274, 335, 969

ADR

Notes	No components found suitable for Technical Name.
UN number or ID number	UN3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s.
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s., 9, III, (-)
Transport hazard class(es)	9
Packing group	III
Environmental hazards	Yes
ERG Code	9L
Special Provisions	274, 335, 601, 375

IATA

Notes	No components found suitable for Technical Name.
UN number or ID number	UN3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s.
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s., 9, III
Transport hazard class(es)	9
Packing group	III
Special Provisions	A97, A158, A197
ERG Code	9L

Japan

UN number or ID number	UN3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s.
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s., 9, III
Transport hazard class(es)	9
Packing group	III
Environmental Hazard	Yes
Special Provisions	274, 335

15. Regulatory information

National regulations

Pollutant Release and Transfer Registry (PRTR)
Not applicable

Industrial Safety and Health Law

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)

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)

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)

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed

Chemical name	CAS No	Chemical Substances Control Law
Ethylene glycol	107-21-1	Priority assessment chemical substance

Ship (Marine Transportation) Safety Act

See section 14 for more information

Civil Aeronautics Act

See section 14 for more information

Act on Prevention of Marine Pollution and Maritime Disaster

Not applicable

Act on Port Regulation Law

See section 14 for more information

Air Pollution Control Law

Air pollutants with regulated emissions standards, Air Pollution Control Act article 3

Volatile organic compound per Air Pollution Control Law article 2, paragraph 4

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/NDSL - 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 sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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

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

This SDS complies with the requirements of JIS Z 7253:2019 (Japan). The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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End of Safety Data Sheet