

SAFETY DATA SHEET

[Required under safety and health regulations for shipping and handling]

Version: 2022
Date Updated: December 31, 2022

SECTION 1. ----- PRODUCT AND COMPANY IDENTIFICATION -----

Product Name Mammalian Protease Inhibitor Cocktail, 100X
Product Code(s) BS386
Recommended Use For Laboratory Research Use Only
 Not for Human or Animal Drug Use

Supplier Bio Basic Asia Pacific Pte Ltd.
Address 2 International Business Park Road
 Strategy #01-04, Singapore 609930

Telephone (+65) 6954 2519
 (+65) 6491 5938

Email sg@biobasic-asia.com

SECTION 2. ----- HAZARDS IDENTIFICATION -----

GHS Classification

Flammable liquids (Category 4)

GHS Label elements, including precautionary statements

Pictogram None

Signal Word Warning

Hazard Statement(s):

H227 Combustible liquid

Precautionary Statement(s):

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P280 Wear protective gloves/eye protection/face protection

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

P403 Store in a well-ventilated place

P501 Dispose of contents/ container to an approved waste disposal plant

HMIS Classification

Health hazard: 0

Chronic health hazard: *

Flammability: 2

Physical hazards: 0

Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3. ----- COMPOSITION/INFORMATION ON INGREDIENTS -----

Chemical Name	EC No.	CAS-No	Weight %
Dimethyl sulfoxide	200-664-3	67-68-5	95-100
Bestatin	-	58970-76-6	0-1
N-(trans-Epoxy succinyl)-L-leucine 4-guanidinobutylamide	-	66701-25-5	0-1
Acetyl-leucine-leucine-arginal, hemisulfate	-	103476-89-7	0-1
Pepstatin A	-	26305-03-3	0-1
Aprotinin	-	9087-70-1	0-1
PMSF	-	329-98-6	0-1

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SECTION 4. ----- FIRST-AID MEASURES-----

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5. ----- FIRE FIGHTING MEASURES-----

Suitable extinguishing media

Water Foam Carbon dioxide (CO₂) Dry powder

Special hazards arising from the substance or mixture

No data available

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

Use water spray to cool unopened containers.

SECTION 6. ----- ACCIDENTAL RELEASE MEASURES-----

Personal precautions, protective equipment and emergency procedures

Avoid breathing vapours, mist or gas. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

Environmental precautions

Do not let product enter drains. Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up

Cover spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

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SECTION 7. ----- HANDLING AND STORAGE-----

Precautions for safe handling

Avoid inhalation of vapour or mist

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge

For precautions see section 2

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place

Recommended storage temperature: -20°C

Do not store in glass

Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated

SECTION 8. ----- EXPOSURE CONTROLS/PERSONAL PROTECTION-----

Control parameters

Exposure controls

Appropriate engineering controls

Use mechanical exhaust or laboratory fumehood to avoid exposure

Personal protective equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection

Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

SECTION 9. ----- PHYSICAL AND CHEMICAL PROPERTIES-----

Information on basic physical and chemical properties

Appearance	Form: Liquid, Clear
Odour	Odourless
Odour Threshold	No data available
pH	No data available
Melting point/freezing point	16 – 19°C (61 – 66°F)
Initial boiling point and boiling range	189 °C (372°F)
Flash point	87°C (189°F) - closed cup

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Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	Lower explosive limits: 2.6%(V) Upper explosive limits: 28.5%(V)
Vapour pressure	0.55hPa at 20°C (68°F)
Relative vapour density	No data available
Density	1.1 g/mL
Water solubility	Completely miscible
Solubility in other solvents	Alcohol - soluble Diethyl ether - soluble
Partition coefficient: n-octanol/water	log Pow: -1.35 at 20°C (68°F) - Bioaccumulation is not expected
Auto-ignition temperature	300 – 302°C (572 – 576°F) at 1,013hPa
Decomposition temperature	>190°C (>374°F)
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

Other safety information

No data available

SECTION 10. -----STABILITY AND REACTIVITY -----

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Organic halides, acetylidene, perchlorates, acid chlorides, nonmetallic halides, nitrates, iron (III) compounds, fluorides, chlorates, hydrides, perchloric acid, oxides of phosphorous, nitric acid, silver compounds, silicon compounds, silanes, acid halides, potassium, sodium, strong oxidizing agents, phosphorous halides, strong reducing agents, silver salt, nitrogen dioxides

Risk of ignition or formation of inflammable gases or vapours with:

Potassium permanganate

Conditions to avoid

Exposure to moisture may affect product quality.
Reacts dangerously with glass.
Heat, flames and sparks.

Incompatible materials

Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents

Hazardous decomposition products

Other decomposition products - No data available
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO_x), Sulphur oxides, Hydrogen chloride gas, Hydrogen fluoride

SECTION 11. ----- TOXICOLOGICAL INFORMATION -----

Acute toxicity

Oral LD50

LD50 Oral - Rat - male and female - 28,300mg/kg

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Inhalation LC50

LC0 Inhalation - Rat - male and female - 4h - > 5.33mg/l

Dermal LD50

LD50 Dermal - Rat - male and female - 40,000mg/kg

Other information on acute toxicity

No data available

Skin corrosion/irritation

Skin-Rabbit

Result: slight irritation – 4h

Serious eye damage/eye irritation

Eyes - Rabbit

Result: slight irritation - 24h

(OECD Test Guideline 405)

Respiratory or skin sensitisation

Maximization Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

Local lymph node assay (LLNA) - Mouse

Result: negative

(OECD Test Guideline 429)

Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: sister chromatid exchange assay

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 479

Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)

Species: Rat

Application Route: Intraperitoneal

Method: OECD Test Guideline 474

Result: negative

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

No data available

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Specific target organ toxicity - repeated exposure (Globally Harmonized System)

No data available

Aspiration hazard

No data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation
Ingestion	May be harmful if swallowed
Skin	May be harmful if absorbed through skin. May cause skin irritation
Eyes	May cause eye irritation
Aggravated Medical Condition	Avoid contact with DMSO solutions containing toxic materials or materials with toxicological properties. Dimethyl sulfoxide is readily absorbed through skin and may carry such materials into the body

Additional Information

Repeated dose toxicity – Rat: male and female - Oral - 18 Months - NOAEL (No observed adverse effect level) - 3,300mg/kg - LOAEL (Lowest observed adverse effect level) - 9,900mg/kg

Repeated dose toxicity – Monkey: male and female - Dermal - 18 Months - NOAEL (No observed adverse effect level) - >= 8,910mg/kg - LOAEL (Lowest observed adverse effect level) - 990mg/kg

RTECS: PV6210000

Exposure to large amounts can cause: redness of skin, Itching, burning, sedation, headache, nausea, Dizziness

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

SECTION 12. ----- ECOLOGICAL INFORMATION -----

Toxicity

Toxicity to fish static test LC50 - Danio rerio (zebra fish) - > 25,000mg/l - 96h (OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates static test EC50- *Daphnia magna* (Water flea) - 24,600mg/l - 48h (OECD Test Guideline 202)

Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 17,000mg/l - 72h(OECD Test Guideline 201)

Toxicity to bacteria EC50 - activated sludge - 10 - 100mg/l - 30min

Persistence and degradability

Biodegradability : Aerobic- exposure time 28d

Result: 31%- not readily biodegradable (OECD Test Guideline 301D)

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

No data available

Other adverse effects

Stability in water - 0.12 - 1.2h at 30°C pH 7

Remarks: Hydrolyzes readily

SECTION 13. ----- DISPOSAL CONSIDERATIONS -----

Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

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Contaminated packaging

Dispose of as unused product.

SECTION 14. ----- TRANSPORT INFORMATION -----

IMDG

Not dangerous goods

IATA

Not dangerous goods

SECTION 15. ----- REGULATORY INFORMATION -----

WHMIS Classification

B3 Combustible Liquid

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

SECTION 16. ----- OTHER INFORMATION -----

Further information: no limited for paper copy, just for internal uses.

For research use only. Not intended for human or animal diagnostic or therapeutic uses.

Disclaimer

The information provided on this SDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

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End of SDS