

Kit Components

Version: 1.1

Creation Date: 2017/09/11

Revision Date: 2019/01/31

Product Name	Western Blot Tool Box
Product Catalogue Number	BOX12 / BOX12-03* / BOX12-05**
Components	RP05-10 / BC03-100 / RB500 / WTB500 / BF20-50 / TBST200 / LH03-10* / LH05-10** / LF08-100

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Version: 1.2

Creation Date: 2017/09/11

Revision Date: 2019/01/04

1. Identification

Product identifier

Product name	RIPA Cell Lysis Buffer (5X)
Product number	RP05-10 / RP05-100
Recommended use	Biochemical reagent for research use only

Details of the supplier of the safety data sheet

Manufacture / Supplier	Energenesis Biomedical Co., Ltd.
Address	6F-3, No.21, Ln. 583, Ruiguang Rd., Neihu Dist. Taipei City 114, Taiwan
Phone	+886-2-2627-0835
Fax	+886-2-2627-0836

Emergency telephone number +886-2-2627-0835

2. Hazard(s) identification

Classification of the substance or mixture Classification according to Regulation (EC) No 1272/2008 [CLP]

Acute Tox. 4	H302, H312
Skin Irrit. 2	H315
Eye Irrit. 2	H319
Aquatic Chronic 2	H411

Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictogram



Signal word

Warning

Hazard statements

H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H411	Toxic to aquatic life with long lasting effects

Precautionary statements

P264	Wash hand thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing.
P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor/...if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. Composition/information on ingredients

Substance/mixture		Mixture	
CAS No. EC No. Index No.	Component Name Synonyms	1272/2008 (CLP)	Percent
7647-14-5 231-598-3 —	Sodium chloride		0.88
77-86-1 201-064-4 —	Trometamol		0.3
9016-45-9 500-024-6 —	Nonylphenol, ethoxylated	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Chronic 2, H411	1
151-21-3 205-788-1 —	Sodium dodecyl sulphate	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319	0.1

Additional information For the full text of the H-Statements mentioned in this Section, see Section 16.

4. First aid measures

Description of first aid measures

Eye Contact	Flush eyes with water as a precaution
Inhalation	If breathed in, move person into fresh air. If not breathing, give artificial respiration.
Skin Contact	Wash off with soap and plenty of water.
Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth with water

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.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Indication of any immediate medical attention and special treatment needed	No data available
---	-------------------

5. Firefighting measures

Extinguishing media	
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special hazards arising from the substance or mixture	No data available
Advice for fire-fighters	Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods and material for containment and cleaning up	Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.
Reference to other sections	For disposal see section 13.

7. Handling and storage

Precautions for safe handling	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.
Conditions for safe storage, including any incompatibilities	Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Recommended storage temperature: 2-8 °C
Specific end use(s)	Apart from the uses mentioned in section 1 no other specific uses are stipulated.

8. Exposure controls/personal protection

Control parameters	Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
---------------------------	--

Component Name CAS No.	PEL-TWA	PEL-STEL	PEL-Ceiling	BEIs
Trometamol 77-86-1	5 mg/m ³	—	5 mg/m ³	—

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Exposure controls

Appropriate engineering controls	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment	
Eye protection	Wear chemical safety goggles. An eye wash station must be available where this product is used.
Skin and 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	A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
Hand protection	Wear chemically resistant gloves, Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Have a safety shower available.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Form: liquid Color: clear
Odour	No data available
Odour Threshold	No data available
pH	7.3-7.9
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Lower and upper explosive (flammable) limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	No data available
Solubility	No data available
Solubility in water	No data available
Partition coefficient: n-octanol/ water (log Kow)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available

10. Stability and reactivity

Reactivity	No data available
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No data available

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Incompatible materials

No data available

Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Information on toxicological effects

No data available

Acute toxicity

Component Name CAS No.	Result	Species	Dose	Exposure
Trometamol 77-86-1	LD50 Dermal	Rat	>5,000 mg/kg	—
	LD50 Oral	Rat	>5,000 mg/kg	—
Nonylphenol, ethoxylated 9016-45-9	LD50 Dermal	Rabbitt	2,000-2,990 mg/kg	—
	LD50 Oral	Rat	960-3,980 mg/kg	—
Sodium dodecyl sulphate 151-21-3	LD50 Dermal	Rabbit	580 mg/kg	—
	LD50 Oral	Rat	1,288 mg/kg	—

Skin corrosion/irritation

Component Name CAS No.	Result	Species	Exposure
Sodium dodecyl sulphate 151-21-3	Eyes - Moderate irritant	Rabbit	10 mg (standard Draize)
	Skin - Mild irritant	Rabbit	25 mg (standard Draize)

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

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

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

No data available

12. Ecological information

Toxicity

Component Name CAS No.	Freshwater Algae Data	Water Flea Data	Freshwater Fish Species Data	Microtox Data	log Pow
Nonylphenol, ethoxylated 9016-45-9	Scenedesmus quadricauda 17 mg/L Lemna minor 15 mg/L	Daphnia magna EC50 9.3 - 21.4 mg/L Gammarus pulex	Pimephales promelas LC50 3.8-7.7 mg/L Poecilia reticulata LC50 16.4 mg/L (48 h)	various bacteria EC50 1000 mg/L	—

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

		EC50 20.9 mg/L			
Sodium dodecyl sulphate 151-21-3	Desmodesmus subspicatus EC50 53 mg/L (72 h) Desmodesmus subspicatus EC50 30 - 100 mg/L (96 h) Pseudokirchneriella subcapitata EC50 3.59 – 15.6 mg/L (96 h) Pseudokirchneriella subcapitata EC50 117 mg/L (96 h)	Daphnia magna EC50 1.8 mg/L (48 h)	Pimephales promelas LC50 10.2 - 22.5 mg/L (96 h semi-static 1) Poecilia reticulata LC50 10.8 - 16.6 mg/L (96 h static 1) Poecilia reticulata LC50 13.5 - 18.3 mg/L (96 h semi-static 1) Pimephales promelas LC50 15 - 18.9 mg/L (96 h static 1) Pimephales promelas LC50 22.1 - 22.8 mg/L (96 h static 1) Lepomis macrochirus LC50 4.06 - 5.75 mg/L (96 h static 1) Lepomis macrochirus LC50 4.2 - 4.8 mg/L (96 h flow-through 1) Oncorhynchus mykiss LC50 4.3 - 8.5 mg/L (96 h static 1) Pimephales promelas LC50 5.8 - 7.5 mg/L (96 h static 1) Pimephales promelas LC50 6.2 - 9.6 mg/L (96 h 1) Pimephales promelas LC50 8 - 12.5 mg/L (96 h static 1) Brachydanio rerio LC50 9.9 - 20.1 mg/L (96 h semi-static 1) Cyprinus carpio LC50 1.31 mg/L (96 h semi-static 1) Oncorhynchus mykiss LC50 4.2 mg/L (96 h 1) Lepomis macrochirus LC50 4.5 mg/L (96 h 1) Oncorhynchus mykiss LC50 4.62 mg/L (96 h flow-through 1) Brachydanio rerio LC50 7.97 mg/L (96 h flow-through 1)	—	1.6

Persistence and degradability No data available

Bioaccumulative potential No data available

Mobility in soil No data available

Results of PBT and vPvB assessment This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Other adverse effects No data available

13. Disposal considerations

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Waste treatment methods	
Product	Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	Dispose of as unused product.

14. Transport information	
IATA / ADR / RID / IMDG	Classified as dangerous in the meaning of transport regulations.
UN number	—
UN proper shipping name	Not dangerous goods
Transport hazard class(es)	—
Packaging group	—
Environmental hazards	no
Special precautions for user	No data available
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	No data available

15. Regulatory information	
Safety, health and environmental regulations/legislation specific for the substance or mixture	This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
Chemical safety assessment	No data available

16. Other information	
Abbreviations	
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
Acute Tox.	Acute toxicity
Aquatic Chronic	Hazardous to the aquatic environment, long-term hazard
BEIs	Biological exposure indices
Eye Irrit.	Serious eye damage/eye irritation
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association-Dangerous Goods Regulations
CAS	Chemical Abstracts Service (division of the American Chemical Society)
OSHA	Occupational Health and Safety Administration
PEL	Permissible Exposure Limit
RID	Regulations Concerning the International Carriage of Dangerous Goods by Rail
Skin Irrit.	Skin corrosion/irritation

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

STEL
TWA

Short Term Exposure Limit
Time Weighted Average

Further information

Copyright 2019 Energenisis Biomedical Co., Ltd.. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Energenisis Biomedical Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Version: 1.5

Creation Date: 2017/07/20

Revision Date: 2019/01/08

1. Identification

Product identifier

Product name	Dual Range™ BCA Protein Assay Kit
Product number	BC03-100 / BC03-250 / BC03-500
Recommended use	Biochemical reagent for research use only

Details of the supplier of the safety data sheet

Manufacture / Supplier	Energenisis Biomedical Co., Ltd.
Address	6F-3, No.21, Ln. 583, Ruiguang Rd., Neihu Dist. Taipei City 114, Taiwan
Phone	+886-2-2627-0835
Fax	+886-2-2627-0836

Emergency telephone number +886-2-2627-0835

2. Hazard(s) identification

Classification of the substance or mixture Classification according to Regulation (EC) No 1272/2008 [CLP]

Acute Tox. 4	H302
Skin Irrit. 2	H315
Eye Irrit. 2	H319
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictogram



Signal word

Warning

Hazard statements

H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Precautionary statements

P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves.
P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor.
P302 + P352	IF ON SKIN: Wash with plenty water.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321	Specific treatment (see supplemental first aid instructions on this label).
P330	Rinse mouth.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. Composition/information on ingredients

Substance/mixture	Mixture	
Component	Description	Content
Reagent A	contains Bicinchoninic acid	BC03-100: 100 mL BC03-250: 250 mL BC03-500: 500 mL
Reagent B	contains Copper sulfate	BC03-100: 2 mL BC03-250: 12 mL BC03-500: 12 mL
Bovine Serum Albumin Standard		BC03-100: 1 mL x 1 BC03-250: 1 mL x 4 BC03-500: 1 mL x 10

CAS No. EC No. Index No.	Component Name Synonyms	1272/2008 (CLP)	Percent
979-88-4 629-761-2 —	Bicinchoninic acid	Skin Irrit. 2; H315 Eye Irrit. 2; H319	1-3
7758-99-8 231-847-6 029-004-00-0	Copper sulfate	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	1-5

Additional information

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. First aid measures

Description of first aid measures

Eye Contact

Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Inhalation	to the uncontaminated eye. Remove contact lenses, clean before re-use. Get immediate medical attention. Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Skin Contact	Wash with soap and water. Remove contaminated clothing and launder immediately, and discard contaminated leather goods, and wash before re-use. Get medical attention immediately if irritation develops or persists.
Ingestion	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water or milk to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention immediately.
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

5. Firefighting measures

Extinguishing media

Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture No data available

Advice for fire-fighters Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

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

Methods and material for containment and cleaning up Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Reference to other sections For disposal see section 13.

7. Handling and storage

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Precautions for safe handling	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.
Conditions for safe storage, including any incompatibilities	Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Recommended storage temperature: 2-8 °C
Specific end use(s)	Apart from the uses mentioned in section 1 no other specific uses are stipulated.

8. Exposure controls/personal protection

Control parameters Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Component Name CAS No.	PEL-TWA	PEL-STEL	PEL-Ceiling	BEIs
Bicinchoninic acid 979-88-4	5 mg/m ³	—	—	—
Copper sulfate 7758-99-8	1 mg/m ³	2 mg/m ³	—	—

Exposure controls

Appropriate engineering controls	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment	
Eye protection	Wear chemical safety goggles. An eye wash station must be available where this product is used.
Skin and 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	A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
Hand protection	Wear chemically resistant gloves, Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Have a safety shower available.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance

	Form	Color
Reagent A	liquid	clear
Reagent B	liquid	blue
Bovine Serum Albumin Standard	liquid	clear

Odour

No data available

Odour Threshold

No data available

pH

No data available

Melting point/freezing point

No data available

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Lower and upper explosive (flammable) limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	No data available
Solubility	No data available
Solubility in water	No data available
Partition coefficient: n-octanol/ water (log Kow)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available

10. Stability and reactivity

Reactivity	No data available
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No data available
Incompatible materials	Strong bases, Powdered metals
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Information on toxicological effects No data available

Acute toxicity

Component Name CAS No.	Result	Species	Dose	Exposure
Copper sulfate 7758-99-8	LD50 Oral LD50 Dermal	Rat Rat	300 mg/kg >2,000 mg/kg	— —

Skin corrosion/irritation	No data available
Serious eye damage/eye irritation	No data available
Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	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	No data available

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available
Additional Information	No data available

12. Ecological information

Toxicity

Component Name CAS No.	Freshwater Algae Data	Water Flea Data	Freshwater Fish Species Data	Microtox Data	log Pow
Copper sulfate 7758-99-8	—	Daphnia magna EC500.0058 - 0.0073 mg/L (48 h) Daphnia magna EC500.147 - 0.227 mg/L (48 h)	—	—	—

Persistence and degradability No data available

Bioaccumulative potential No data available

Mobility in soil No data available

Results of PBT and vPvB assessment This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Other adverse effects No data available

13. Disposal considerations

Waste treatment methods

Product	Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	Dispose of as unused product.

14. Transport information

IATA / ADR / RID / IMDG	Classified as dangerous in the meaning of transport regulations.
UN number	—
UN proper shipping name	Not dangerous goods
Transport hazard class(es)	—
Packaging group	—
Environmental hazards	no
Special precautions for user	No data available

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	No data available
--	-------------------

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture	This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
Chemical safety assessment	No data available

16. Other information

Abbreviations	
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
BEIs	Biological exposure indices
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association-Dangerous Goods Regulations
CAS	Chemical Abstracts Service (division of the American Chemical Society)
LD50	Lethal dose, 50 percent
OSHA	Occupational Health and Safety Administration
PEL	Permissible Exposure Limit
RID	Regulations Concerning the International Carriage of Dangerous Goods by Rail
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
Further information	Copyright 2019 Energenisis Biomedical Co., Ltd.. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Energenisis Biomedical Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Version: 1.2

Creation Date: 2017/09/04

Revision Date: 2019/01/07

1. Identification

Product identifier

Product name	SDS-PAGE Running Buffer (pH 8.3)
Product number	RB10-1L / RB500 / RB500P
Recommended use	Biochemical reagent for research use only

Details of the supplier of the safety data sheet

Manufacture / Supplier	Energenesis Biomedical Co., Ltd.
Address	6F-3, No.21, Ln. 583, Ruiguang Rd., Neihu Dist. Taipei City 114, Taiwan
Phone	+886-2-2627-0835
Fax	+886-2-2627-0836

Emergency telephone number +886-2-2627-0835

2. Hazard(s) identification

Classification of the substance or mixture Classification according to Regulation (EC) No 1272/2008 [CLP]

Acute Tox. 4	H302, H312
Skin Irrit. 2	H315
Eye Irrit. 2	H319

Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictogram



Signal word

Warning

Hazard statements

H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation

Precautionary statements

P264	Wash hand thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing.
P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor/...if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	If skin irritation occurs: Get medical advice/attention.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

P337 + P313 P362 + P364 P501	If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. Composition/information on ingredients

Substance/mixture		Mixture	
CAS No. EC No. Index No.	Component Name Synonyms	1272/2008 (CLP)	Percent
56-40-6 200-272-2 —	Glycine		14.4 (RB10-1L) 78.1 (RB500 / RB500P)
77-86-1 201-064-4 —	Trometamol		3 (RB10-1L) 16.5 (RB500 / RB500P)
151-21-3 205-788-1 —	Sodium dodecyl sulphate	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319	1 (RB10-1L) 5.4 (RB500 / RB500P)
Additional information		For the full text of the H-Statements mentioned in this Section, see Section 16.	

4. First aid measures

Description of first aid measures	
Eye Contact	Flush eyes with water as a precaution
Inhalation	If breathed in, move person into fresh air. If not breathing, give artificial respiration.
Skin Contact	Wash off with soap and plenty of water.
Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth with water
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

5. Firefighting measures

Extinguishing media	
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Special hazards arising from the substance or mixture No data available

Advice for fire-fighters Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

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

Methods and material for containment and cleaning up Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Reference to other sections For disposal see section 13.

7. Handling and storage

Precautions for safe handling Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.

Conditions for safe storage, including any incompatibilities Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Recommended storage temperature: Room temperature

Specific end use(s) Apart from the uses mentioned in section 1 no other specific uses are stipulated.

8. Exposure controls/personal protection

Control parameters Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Component Name CAS No.	PEL-TWA	PEL-STEL	PEL-Ceiling	BEIs
Glycine 56-40-6	15 mg/m ³	—	—	—
Trometamol 77-86-1	5 mg/m ³	—	5 mg/m ³	—

Exposure controls

Appropriate engineering controls Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment
Eye protection Wear chemical safety goggles. An eye wash station must be available where this product is used.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Skin and 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	A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
Hand protection	Wear chemically resistant gloves, Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Have a safety shower available.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Form: liquid Color: clear
Odour	No data available
Odour Threshold	No data available
pH	8.2-8.4
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Lower and upper explosive (flammable) limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	No data available
Solubility	No data available
Solubility in water	No data available
Partition coefficient: n-octanol/ water (log Kow)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available

10. Stability and reactivity

Reactivity	No data available
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No data available
Incompatible materials	No data available
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

11. Toxicological information

Information on toxicological effects No data available

Acute toxicity

Component Name CAS No.	Result	Species	Dose	Exposure
Glycine 56-40-6	LD50 Oral	Rat	7,930 mg/kg	—
Trometamol 77-86-1	LD50 Dermal LD50 Oral	Rat Rat	>5,000 mg/kg >5,000 mg/kg	— —
Sodium dodecyl sulphate 151-21-3	LD50 Dermal LD50 Oral	Rabbit Rat	580 mg/kg 1,288 mg/kg	— —

Skin corrosion/irritation

Component Name CAS No.	Result	Species	Exposure
Sodium dodecyl sulphate 151-21-3	Eyes - Moderate irritant Skin - Mild irritant	Rabbit Rabbit	10 mg (standard Draize) 25 mg (standard Draize)

Serious eye damage/eye irritation	No data available
Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	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	No data available
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available
Additional Information	No data available

12. Ecological information

Toxicity

Component Name CAS No.	Freshwater Algae Data	Water Flea Data	Freshwater Fish Species Data	Microtox Data	log Pow
Sodium dodecyl sulphate 151-21-3	Desmodesmus subspicatus EC50 53 mg/L (72 h) Desmodesmus subspicatus EC50 30 - 100 mg/L (96 h) Pseudokirchneriella subcapitata EC50 3.59 - 15.6 mg/L (96 h) Pseudokirchneriella subcapitata EC50 117 mg/L (96 h)	Daphnia magna EC50 1.8 mg/L (48 h)	Pimephales promelas LC50 10.2 - 22.5 mg/L (96 h semi-static 1) Poecilia reticulata LC50 10.8 - 16.6 mg/L (96 h static 1) Poecilia reticulata LC50 13.5 - 18.3 mg/L (96 h semi- static 1) Pimephales promelas LC50 15 -	—	1.6

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

			<p>18.9 mg/L (96 h static 1) Pimephales promelas LC50 22.1 - 22.8 mg/L (96 h static 1) Lepomis macrochirus LC50 4.06 - 5.75 mg/L (96 h static 1) Lepomis macrochirus LC50 4.2 - 4.8 mg/L (96 h flow-through 1) Oncorhynchus mykiss LC50 4.3 - 8.5 mg/L (96 h static 1) Pimephales promelas LC50 5.8 - 7.5 mg/L (96 h static 1) Pimephales promelas LC50 6.2 - 9.6 mg/L (96 h 1) Pimephales promelas LC50 8 - 12.5 mg/L (96 h static 1) Brachydanio rerio LC50 9.9 - 20.1 mg/L (96 h semi-static 1) Cyprinus carpio LC50 1.31 mg/L (96 h semi-static 1) Oncorhynchus mykiss LC50 4.2 mg/L (96 h 1) Lepomis macrochirus LC50 4.5 mg/L (96 h 1) Oncorhynchus mykiss LC50 4.62 mg/L (96 h flow-through 1) Brachydanio rerio LC50 7.97 mg/L (96 h flow-through 1)</p>		
--	--	--	--	--	--

Persistence and degradability No data available

Bioaccumulative potential No data available

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Mobility in soil	No data available
Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Other adverse effects	No data available

13. Disposal considerations

Waste treatment methods

Product	Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	Dispose of as unused product.

14. Transport information

IATA / ADR / RID / IMDG	Classified as dangerous in the meaning of transport regulations.
UN number	—
UN proper shipping name	Not dangerous goods
Transport hazard class(es)	—
Packaging group	—
Environmental hazards	no
Special precautions for user	No data available
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	No data available

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture	This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
Chemical safety assessment	No data available

16. Other information

Abbreviations

ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
Acute Tox.	Acute toxicity
BEIs	Biological exposure indices

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Eye Irrit.	Serious eye damage/eye irritation
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association-Dangerous Goods Regulations
CAS	Chemical Abstracts Service (division of the American Chemical Society)
OSHA	Occupational Health and Safety Administration
PEL	Permissible Exposure Limit
RID	Regulations Concerning the International Carriage of Dangerous Goods by Rail
Skin Irrit.	Skin corrosion/irritation
STEL	Short Term Exposure Limit
TWA	Time Weighted Average

Further information

Copyright 2019 Energenesis Biomedical Co., Ltd.. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Energenesis Biomedical Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Version: 1.2

Creation Date: 2017/09/04

Revision Date: 2019/01/07

1. Identification	
Product identifier	
Product name	Western Blot Transfer Buffer (pH 8.3)
Product number	WTB10-1L / WTB500 / WTB500P
Recommended use	Biochemical reagent for research use only
Details of the supplier of the safety data sheet	
Manufacture / Supplier	Energenesis Biomedical Co., Ltd.
Address	6F-3, No.21, Ln. 583, Ruiguang Rd., Neihu Dist. Taipei City 114, Taiwan
Phone	+886-2-2627-0835
Fax	+886-2-2627-0836
Emergency telephone number	+886-2-2627-0835

2. Hazard(s) identification	
Classification of the substance or mixture	Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.
Label elements	Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.
Other hazards	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. Composition/information on ingredients			
Substance/mixture		Mixture	
CAS No. EC No. Index No.	Component Name Synonyms	1272/2008 (CLP)	Percent
56-40-6 200-272-2 —	Glycine		14.4 (WTB10-1L) 82.6 (WTB500 / WTB500P)
77-86-1 201-064-4 —	Trometamol		3 (WTB10-1L) 17.4 (WTB500 / WTB500P)
Additional information		For the full text of the H-Statements mentioned in this Section, see Section 16.	

4. First aid measures	
Description of first aid measures	

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Eye Contact	Flush eyes with water as a precaution
Inhalation	If breathed in, move person into fresh air. If not breathing, give artificial respiration.
Skin Contact	Wash off with soap and plenty of water.
Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth with water
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

5. Firefighting measures

Extinguishing media

Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture

No data available

Advice for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

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

Methods and material for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

7. Handling and storage

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.

Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Recommended storage temperature: Room temperature

Specific end use(s)

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

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

8. Exposure controls/personal protection

Control parameters Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Component Name CAS No.	PEL-TWA	PEL-STEL	PEL-Ceiling	BEIs
Glycine 56-40-6	15 mg/m ³	—	—	—
Trometamol 77-86-1	5 mg/m ³	—	5 mg/m ³	—

Exposure controls

Appropriate engineering controls Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye protection Wear chemical safety goggles. An eye wash station must be available where this product is used.

Skin and 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 A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Hand protection Wear chemically resistant gloves, Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Have a safety shower available.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Form	Color	
	WTB10-1L	liquid	clear
	WTB500 / WTB500P	powder	white
Odour	No data available		
Odour Threshold	No data available		
pH	8.2-8.4		
Melting point/freezing point	No data available		
Initial boiling point and boiling range	No data available		
Flash point	No data available		
Evaporation rate	No data available		
Flammability (solid, gas)	No data available		
Lower and upper explosive (flammable) limits	No data available		
Vapor pressure	No data available		
Vapor density	No data available		
Relative density	No data available		
Solubility	No data available		
Solubility in water	No data available		
Partition coefficient: n-octanol/ water (log Kow)	No data available		
Auto-ignition temperature	No data available		

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Decomposition temperature	No data available
Viscosity	No data available

10. Stability and reactivity

Reactivity	No data available
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No data available
Incompatible materials	No data available
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Information on toxicological effects	No data available
Acute toxicity	No data available
Skin corrosion/irritation	No data available
Serious eye damage/eye irritation	No data available
Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	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	No data available
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available
Additional Information	No data available

12. Ecological information

Toxicity	No data available
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

	persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Other adverse effects	No data available

13. Disposal considerations

Waste treatment methods

Product	Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	Dispose of as unused product.

14. Transport information

IATA / ADR / RID / IMDG	Classified as dangerous in the meaning of transport regulations.
UN number	—
UN proper shipping name	Not dangerous goods
Transport hazard class(es)	—
Packaging group	—
Environmental hazards	no
Special precautions for user	No data available
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	No data available

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture	This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
Chemical safety assessment	No data available

16. Other information

Abbreviations

ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
BEIs	Biological exposure indices
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association-Dangerous Goods Regulations
CAS	Chemical Abstracts Service (division of the American Chemical Society)
OSHA	Occupational Health and Safety Administration

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

PEL	Permissible Exposure Limit
RID	Regulations Concerning the International Carriage of Dangerous Goods by Rail
STEL	Short Term Exposure Limit
TWA	Time Weighted Average

Further information

Copyright 2019 Energenisis Biomedical Co., Ltd.. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Energenisis Biomedical Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Version: 1.8

Creation Date: 2014/08/27

Revision Date: 2019/01/17

1. Identification

Product identifier

Product name BlockPRO™ Protein-Free Blocking Buffer
 Product number BF01-1L / BF10-100 / BF20-50 / BF20-50P
 Recommended use Biochemical reagent for research use only

Details of the supplier of the safety data sheet

Manufacture / Supplier Energenesis Biomedical Co., Ltd.
 Address 6F-3, No.21, Ln. 583, Ruiguang Rd., Neihu Dist. Taipei City 114, Taiwan
 Phone +886-2-2627-0835
 Fax +886-2-2627-0836

Emergency telephone number +886-2-2627-0835

2. Hazard(s) identification

Classification of the substance or mixture Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Label elements Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Other hazards This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. Composition/information on ingredients

Substance/mixture Mixture

CAS No. EC No. Index No.	Component Name Synonyms	1272/2008 (CLP)	Percent
7647-14-5 231-598-3 —	Sodium chloride		<1 (BF01-1L) <10 (BF10-100) <20 (BF20-50 / BF20-50P)
77-86-1 201-064-4 —	Trometamol		<1 (BF01-1L) <10 (BF10-100) <20 (BF20-50 / BF20-50P)

Additional information For the full text of the H-Statements mentioned in this Section, see Section 16.

4. First aid measures

Description of first aid measures

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Eye Contact	Flush eyes with water as a precaution
Inhalation	If breathed in, move person into fresh air. If not breathing, give artificial respiration.
Skin Contact	Wash off with soap and plenty of water.
Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth with water
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

5. Firefighting measures

Extinguishing media

Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture

No data available

Advice for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

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

Methods and material for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

7. Handling and storage

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.

Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Recommended storage temperature: 2-8 °C (BF01-1L / BF10-100) or Room temperature (BF20-50 / BF20-50P)

Specific end use(s)

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

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

8. Exposure controls/personal protection

Control parameters Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Component Name CAS No.	PEL-TWA	PEL-STEL	PEL-Ceiling	BEIs
Trometamol 77-86-1	5 mg/m ³	—	5 mg/m ³	—

Exposure controls

Appropriate engineering controls Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye protection Wear chemical safety goggles. An eye wash station must be available where this product is used.

Skin and 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 A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Hand protection Wear chemically resistant gloves, Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Have a safety shower available.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance		Form	Color
	BF01-1L	liquid	clear
	BF10-100 / BF20-50 / BF20-50P	liquid	yellow
Odour	No data available		
Odour Threshold	No data available		
pH	8.0-8.5		
Melting point/freezing point	No data available		
Initial boiling point and boiling range	No data available		
Flash point	No data available		
Evaporation rate	No data available		
Flammability (solid, gas)	No data available		
Lower and upper explosive (flammable) limits	No data available		
Vapor pressure	No data available		
Vapor density	No data available		
Relative density	No data available		
Solubility	No data available		
Solubility in water	No data available		
Partition coefficient: n-octanol/ water (log Kow)	No data available		
Auto-ignition temperature	No data available		

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Decomposition temperature	No data available
Viscosity	No data available

10. Stability and reactivity

Reactivity	No data available
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No data available
Incompatible materials	No data available
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Information on toxicological effects	No data available
Acute toxicity	No data available
Skin corrosion/irritation	No data available
Serious eye damage/eye irritation	No data available
Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	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	No data available
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available
Additional Information	No data available

12. Ecological information

Toxicity	No data available
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

	persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Other adverse effects	No data available

13. Disposal considerations

Waste treatment methods

Product	Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	Dispose of as unused product.

14. Transport information

IATA / ADR / RID / IMDG	Classified as dangerous in the meaning of transport regulations.
UN number	—
UN proper shipping name	Not dangerous goods
Transport hazard class(es)	—
Packaging group	—
Environmental hazards	no
Special precautions for user	No data available
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	No data available

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture	This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
Chemical safety assessment	No data available

16. Other information

Abbreviations

ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
BEIs	Biological exposure indices
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association-Dangerous Goods Regulations
CAS	Chemical Abstracts Service (division of the American Chemical Society)
OSHA	Occupational Health and Safety Administration

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

PEL	Permissible Exposure Limit
RID	Regulations Concerning the International Carriage of Dangerous Goods by Rail
STEL	Short Term Exposure Limit
TWA	Time Weighted Average

Further information

Copyright 2019 Energenisis Biomedical Co., Ltd.. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Energenisis Biomedical Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Version: 1.2

Creation Date: 2017/08/21

Revision Date: 2019/01/07

1. Identification

Product identifier

Product name TBS Tween-20 Buffer (pH 7.4)
Product number TBST10-1L / TBST200 / TBST200P
Recommended use Biochemical reagent for research use only

Details of the supplier of the safety data sheet

Manufacture / Supplier Energenisis Biomedical Co., Ltd.
Address 6F-3, No.21, Ln. 583, Ruiguang Rd., Neihu Dist.
Taipei City 114, Taiwan
Phone +886-2-2627-0835
Fax +886-2-2627-0836

Emergency telephone number +886-2-2627-0835

2. Hazard(s) identification

Classification of the substance or mixture Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Label elements Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Other hazards This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. Composition/information on ingredients

Substance/mixture Mixture

CAS No. EC No. Index No.	Component Name Synonyms	1272/2008 (CLP)	Percent
7647-14-5 231-598-3 —	Sodium chloride		8.7 (TBST10-1L) 21.9 (TBST200 / TBST200P)
77-86-1 201-064-4 —	Trometamol		3 (TBST10-1L) 7.6 (TBST200 / TBST200P)
9005-64-5 500-018-3 —	Sorbitan monolaurate, ethoxylated		0.5 (TBST10-1L) 1.3 (TBST200 / TBST200P)

Additional information For the full text of the H-Statements mentioned in this Section, see Section 16.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

4. First aid measures

Description of first aid measures

Eye Contact	Flush eyes with water as a precaution
Inhalation	If breathed in, move person into fresh air. If not breathing, give artificial respiration.
Skin Contact	Wash off with soap and plenty of water.
Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth with water

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

5. Firefighting measures

Extinguishing media

Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
------------------------------	--

Special hazards arising from the substance or mixture

No data available

Advice for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

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

Methods and material for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

7. Handling and storage

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.

Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Recommended storage temperature: Room temperature

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Specific end use(s)	Apart from the uses mentioned in section 1 no other specific uses are stipulated.
----------------------------	---

8. Exposure controls/personal protection

Control parameters Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Component Name CAS No.	PEL-TWA	PEL-STEL	PEL-Ceiling	BEIs
Trometamol 77-86-1	5 mg/m ³	—	5 mg/m ³	—

Exposure controls

Appropriate engineering controls	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment	
Eye protection	Wear chemical safety goggles. An eye wash station must be available where this product is used.
Skin and 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	A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
Hand protection	Wear chemically resistant gloves, Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Have a safety shower available.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Form: liquid Color: clear
Odour	No data available
Odour Threshold	No data available
pH	7.3-7.5
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Lower and upper explosive (flammable) limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	No data available
Solubility	No data available
Solubility in water	No data available
Partition coefficient: n-octanol/ water (log Kow)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Viscosity	No data available
-----------	-------------------

10. Stability and reactivity

Reactivity	No data available
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No data available
Incompatible materials	No data available
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Information on toxicological effects	No data available
Acute toxicity	No data available
Skin corrosion/irritation	No data available
Serious eye damage/eye irritation	No data available
Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	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	No data available
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available
Additional Information	No data available

12. Ecological information

Toxicity	No data available
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Other adverse effects	No data available
------------------------------	-------------------

13. Disposal considerations

Waste treatment methods

Product	Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	Dispose of as unused product.

14. Transport information

IATA / ADR / RID / IMDG	Classified as dangerous in the meaning of transport regulations.
UN number	—
UN proper shipping name	Not dangerous goods
Transport hazard class(es)	—
Packaging group	—
Environmental hazards	no
Special precautions for user	No data available
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	No data available

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture	This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
---	--

Chemical safety assessment	No data available
-----------------------------------	-------------------

16. Other information

Abbreviations

ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
BEIs	Biological exposure indices
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association-Dangerous Goods Regulations
CAS	Chemical Abstracts Service (division of the American Chemical Society)
OSHA	Occupational Health and Safety Administration
PEL	Permissible Exposure Limit

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

RID	Regulations Concerning the International Carriage of Dangerous Goods by Rail
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
Further information	Copyright 2019 Energenesis Biomedical Co., Ltd.. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Energenesis Biomedical Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Version: 2.2

Creation Date: 2008/01/01

Revision Date: 2019/01/16

1. Identification

Product identifier

Product name LuminolPen™, HRP System
Product number LH03-10 / LH03-50 / LH603
Recommended use Biochemical reagent for research use only

Details of the supplier of the safety data sheet

Manufacture / Supplier Energenisis Biomedical Co., Ltd.
Address 6F-3, No.21, Ln. 583, Ruiguang Rd., Neihu Dist. Taipei City 114, Taiwan
Phone +886-2-2627-0835
Fax +886-2-2627-0836

Emergency telephone number +886-2-2627-0835

2. Hazard(s) identification

Classification of the substance or mixture Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008 [CLP]

Label elements Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008 [CLP]

Other hazards This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. Composition/information on ingredients

Substance/mixture Mixture

CAS No. EC No. Index No.	Component Name Synonyms	1272/2008 (CLP)	Percent
56-81-5 200-289-5 —	Glycerol		1-10
6104-59-2 228-060-5 —	hydrogen [4-[4-(p-ethoxyanilino)-4'-[ethyl(m-sulphonatobenzyl)amino]benzhydrylene]cyclohexa-2,5-dien-1-ylidene](ethyl)(m-sulphonatobenzyl)ammonium, monosodium salt		0.1-1

Additional information For the full text of the H-Statements mentioned in this Section, see Section 16.

4. First aid measures

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Description of first aid measures	
Eye Contact	Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Remove contact lenses, clean before re-use. Get immediate medical attention.
Inhalation	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Skin Contact	Wash with soap and water. Remove contaminated clothing and launder immediately, and discard contaminated leather goods, and wash before re-use. Get medical attention immediately if irritation develops or persists.
Ingestion	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water or milk to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention immediately.
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

5. Firefighting measures

Extinguishing media

Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture

No data available

Advice for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

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

Methods and material for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

7. Handling and storage

Precautions for safe handling	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.
Conditions for safe storage, including any incompatibilities	Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Recommended storage temperature: 2-8 °C
Specific end use(s)	Apart from the uses mentioned in section 1 no other specific uses are stipulated.

8. Exposure controls/personal protection

Control parameters	Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
Exposure controls	
Appropriate engineering controls	Handle in accordance with good industrial hygiene and safety practice.
Personal protective equipment	
Eye protection	Wear chemical safety goggles. An eye wash station must be available where this product is used.
Skin and 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	A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
Hand protection	Wear chemically resistant gloves, Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Have a safety shower available.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Form: liquid Color: blue
Odour	Odorless
Odour Threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Lower and upper explosive (flammable) limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	No data available
Solubility	No data available

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Solubility in water	No data available
Partition coefficient: n-octanol/ water (log Kow)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available

10. Stability and reactivity

Reactivity	No data available
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No data available
Incompatible materials	Strong bases, Powdered metals
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Information on toxicological effects	No data available
Acute toxicity	No data available
Skin corrosion/irritation	No data available
Serious eye damage/eye irritation	No data available
Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	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	No data available
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available
Additional Information	No data available

12. Ecological information

Toxicity	No data available
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Other adverse effects	No data available

13. Disposal considerations

Waste treatment methods	
Product	Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	Dispose of as unused product.

14. Transport information

IATA / ADR / RID / IMDG	Classified as dangerous in the meaning of transport regulations.
UN number	—
UN proper shipping name	Not dangerous goods
Transport hazard class(es)	—
Packaging group	—
Environmental hazards	no
Special precautions for user	No data available
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	No data available

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture	This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
Chemical safety assessment	No data available

16. Other information

Abbreviations	
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
BEIs	Biological exposure indices
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association-Dangerous Goods Regulations
CAS	Chemical Abstracts Service (division of the American Chemical Society)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

LD50	Lethal dose, 50 percent
OSHA	Occupational Health and Safety Administration
PEL	Permissible Exposure Limit
RID	Regulations Concerning the International Carriage of Dangerous Goods by Rail
STEL	Short Term Exposure Limit
TWA	Time Weighted Average

Further information

Copyright 2019 Energenisis Biomedical Co., Ltd.. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Energenisis Biomedical Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Version: 1.0

Creation Date: 2018/10/22

Revision Date: 2018/10/22

1. Identification

Product identifier

Product name	LuminolPen™ EZ, HRP System
Product number	LH05-10 / LH05-50
Recommended use	Biochemical reagent for research use only

Details of the supplier of the safety data sheet

Manufacture / Supplier	Energenisis Biomedical Co., Ltd.
Address	6F-3, No.21, Ln. 583, Ruiguang Rd., Neihu Dist. Taipei City 114, Taiwan
Phone	+886-2-2627-0835
Fax	+886-2-2627-0836

Emergency telephone number +886-2-2627-0835

2. Hazard(s) identification

Classification of the substance or mixture Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008 [CLP]

Label elements Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008 [CLP]

Other hazards This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. Composition/information on ingredients

No components need to be disclosed according to the applicable regulations

4. First aid measures

Description of first aid measures

Eye Contact	Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Remove contact lenses, clean before re-use. Get immediate medical attention.
Inhalation	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Skin Contact	Wash with soap and water. Remove contaminated clothing and launder immediately, and discard contaminated leather goods, and wash before re-use. Get medical attention immediately if irritation develops or persists.
Ingestion	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

	been swallowed and the exposed person is conscious, give small quantities of water or milk to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention immediately.
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

5. Firefighting measures

Extinguishing media

Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture No data available

Advice for fire-fighters Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

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

Methods and material for containment and cleaning up Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Reference to other sections For disposal see section 13.

7. Handling and storage

Precautions for safe handling Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.

Conditions for safe storage, including any incompatibilities Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Recommended storage temperature: -20 °C

Specific end use(s) Apart from the uses mentioned in section 1 no other specific uses are stipulated.

8. Exposure controls/personal protection

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Control parameters	Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
Exposure controls	
Appropriate engineering controls	Handle in accordance with good industrial hygiene and safety practice.
Personal protective equipment	
Eye protection	Wear chemical safety goggles. An eye wash station must be available where this product is used.
Skin and 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	A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
Hand protection	Wear chemically resistant gloves, Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Have a safety shower available.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Form: liquid Color: yellow
Odour	No data available
Odour Threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Lower and upper explosive (flammable) limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	No data available
Solubility	No data available
Solubility in water	No data available
Partition coefficient: n-octanol/ water (log Kow)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available

10. Stability and reactivity

Reactivity	No data available
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Conditions to avoid	No data available
Incompatible materials	Strong bases, Powdered metals
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Information on toxicological effects	No data available
Acute toxicity	No data available
Skin corrosion/irritation	No data available
Serious eye damage/eye irritation	No data available
Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	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	No data available
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available
Additional Information	No data available

12. Ecological information

Toxicity	No data available
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Other adverse effects	No data available

13. Disposal considerations

Waste treatment methods	
Product	Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	Dispose of as unused product.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

14. Transport information

IATA / ADR / RID / IMDG	Classified as dangerous in the meaning of transport regulations.
UN number	—
UN proper shipping name	Not dangerous goods
Transport hazard class(es)	—
Packaging group	—
Environmental hazards	no
Special precautions for user	No data available
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	No data available

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture	This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
Chemical safety assessment	No data available

16. Other information

Abbreviations

ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
BEIs	Biological exposure indices
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association-Dangerous Goods Regulations
CAS	Chemical Abstracts Service (division of the American Chemical Society)
LD50	Lethal dose, 50 percent
OSHA	Occupational Health and Safety Administration
PEL	Permissible Exposure Limit
RID	Regulations Concerning the International Carriage of Dangerous Goods by Rail
STEL	Short Term Exposure Limit
TWA	Time Weighted Average

Further information

Copyright 2019 Energenisis Biomedical Co., Ltd.. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Energenesis Biomedical Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Version: 1.7

Creation Date: 2012/12/20

Revision Date: 2019/01/18

1. Identification

Product identifier

Product name LumiFlash™ Ultima Chemiluminescent Substrate
 Product number LF08-10S / LF08-100 / LF08-500
 Recommended use Biochemical reagent for research use only

Details of the supplier of the safety data sheet

Manufacture / Supplier Energenesis Biomedical Co., Ltd.
 Address 6F-3, No.21, Ln. 583, Ruiguang Rd., Neihu Dist. Taipei City 114, Taiwan
 Phone +886-2-2627-0835
 Fax +886-2-2627-0836

Emergency telephone number +886-2-2627-0835

2. Hazard(s) identification

Classification of the substance or mixture Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008 [CLP]

Label elements Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008 [CLP]

Other hazards This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. Composition/information on ingredients

Substance/mixture Mixture

Component	Description	Content
Solution A	contains 5-amino-1,2,3,4-tetrahydrophthalazine-1,4-dione	LF08-10S: 1 mL LF08-100: 50 mL LF08-500: 250 mL
Solution B	contains Hydrogen peroxide	LF08-10S: 1 mL LF08-100: 50 mL LF08-500: 250 mL

CAS No. EC No. Index No.	Component Name Synonyms	1272/2008 (CLP)	Percent
521-31-3 208-309-4 —	5-amino-1,2,3,4-tetrahydrophthalazine-1,4-dione		<0.1
7722-84-1 231-765-0	Hydrogen peroxide		<0.1

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

008-003-00-9		
Additional information	For the full text of the H-Statements mentioned in this Section, see Section 16.	

4. First aid measures

Description of first aid measures

Eye Contact	Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Remove contact lenses, clean before re-use. Get immediate medical attention.
Inhalation	Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately.
Skin Contact	Wash with soap and water. Remove contaminated clothing and launder immediately, and discard contaminated leather goods, and wash before re-use. Get medical attention immediately if irritation develops or persists.
Ingestion	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water or milk to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention immediately.

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

5. Firefighting measures

Extinguishing media

Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
------------------------------	--

Special hazards arising from the substance or mixture

No data available

Advice for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

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

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Methods and material for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

7. Handling and storage

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.

Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Recommended storage temperature: 2-8 °C

Specific end use(s)

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

8. Exposure controls/personal protection

Control parameters

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice.

Personal protective equipment

Eye protection

Wear chemical safety goggles. An eye wash station must be available where this product is used.

Skin and 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

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Hand protection

Wear chemically resistant gloves, Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Have a safety shower available.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Form: liquid Color: clear

Odour

Odorless

Odour Threshold

No data available

pH

No data available

Melting point/freezing point

No data available

Initial boiling point and boiling range

No data available

Flash point

No data available

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Evaporation rate	No data available
Flammability (solid, gas)	No data available
Lower and upper explosive (flammable) limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	No data available
Solubility	No data available
Solubility in water	No data available
Partition coefficient: n-octanol/ water (log Kow)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available

10. Stability and reactivity

Reactivity	No data available
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No data available
Incompatible materials	Strong bases, Powdered metals
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Information on toxicological effects	No data available
Acute toxicity	No data available
Skin corrosion/irritation	No data available
Serious eye damage/eye irritation	No data available
Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	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	No data available
Specific target organ toxicity - repeated exposure	No data available
Aspiration hazard	No data available
Additional Information	No data available

12. Ecological information

Toxicity	No data available
-----------------	-------------------

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Other adverse effects	No data available

13. Disposal considerations

Waste treatment methods

Product	Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	Dispose of as unused product.

14. Transport information

IATA / ADR / RID / IMDG	Classified as dangerous in the meaning of transport regulations.
UN number	—
UN proper shipping name	Not dangerous goods
Transport hazard class(es)	—
Packaging group	—
Environmental hazards	no
Special precautions for user	No data available
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	No data available

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture	This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
Chemical safety assessment	No data available

16. Other information

Abbreviations

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
BEIs	Biological exposure indices
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association-Dangerous Goods Regulations
CAS	Chemical Abstracts Service (division of the American Chemical Society)
LD50	Lethal dose, 50 percent
OSHA	Occupational Health and Safety Administration
PEL	Permissible Exposure Limit
RID	Regulations Concerning the International Carriage of Dangerous Goods by Rail
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
Further information	<p>Copyright 2019 Energenisis Biomedical Co., Ltd.. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Energenisis Biomedical Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.</p>