



SAFETY DATA SHEET

1. Identification

Product identifier	Positive control for anti-LC3 antibody	
Other means of identification		
Product code	PM036-PN	
Recommended use	Research use only.	
Recommended restrictions	None known.	
Manufacturer / Importer / Supplier / Distributor information		
Manufacturer and Supplier (Asia)	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan	
Telephone number	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)	
Fax	+81-52-238-1440	
E-mail	sds-support@mbl.co.jp	
URL	http://www.mbl.co.jp/e/index.html	
Contact person	SDS Support	
Supplier	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA	
Telephone number	+1-800-200-5459, option 3	
Fax	+1-781-939-6963	
E-mail	tech@mblintl.com	
URL	http://www.mblintl.com/	
Contact person	Technical Service	

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1
OSHA hazard(s)	Not classified.	
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2
Label elements		
Hazard symbol		
Signal word	Danger	
Hazard statement	Causes serious eye damage. May cause an allergic skin reaction. Toxic to aquatic life with long lasting effects.	
Precautionary statement		
Prevention	Avoid breathing dust. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.	
Response	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Call a poison center/doctor if you feel unwell. Wash contaminated clothing	
Storage	Store away from incompatible materials.	
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.	
Hazard(s) not otherwise classified (HNOC)	None.	

3. Composition/Information on ingredients

Mixtures

Chemical name	CAS number	%
Glycerol (Glycerin)	56-81-5	10
2-Mercaptoethanol	60-24-2	5
Sodium dodecyl sulphate	151-21-3	2

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	Move injured person into fresh air and keep person calm under observation. If breathing is difficult, trained personnel should give oxygen. Get medical attention if any discomfort continues.
Skin contact	Take off immediately all contaminated clothing. Flush skin thoroughly with water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove any contact lenses and open eyelids wide apart. Continue rinsing. Get medical attention immediately.
Ingestion	Rinse mouth thoroughly. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Only induce vomiting at the instruction of medical personnel. Get medical attention if any discomfort continues.
Most important symptoms/ effects, acute and delayed	Extreme irritation of eyes and mucous membranes, including burning and tearing. Dermatitis.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	First aid personnel must be aware of own risk during rescue.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Irritating and toxic gases or fumes may be released during a fire. Carbon oxides. Sulfur oxides.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for fire-fighting: follow the general fire precautions indicated in the workplace.
Fire-fighting equipment/ instructions	Use standard fire-fighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Wear suitable protective clothing. Avoid contact with eyes, skin, and clothing. For personal protection, see Section 8 of the SDS.
Methods and materials for containment and cleaning up	Absorb spill with vermiculite or other inert material, then place in a container for chemical waste for proper disposal. After removal, flush contaminated area thoroughly with water.
Environmental precautions	Do not allow to enter drains, sewers or watercourses.

7. Handling and storage

Precautions for safe handling	Use with adequate ventilation. Avoid contact with skin and eyes. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in tightly closed original container in a dry, cool and well-ventilated place. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Glycerol (CAS 56-81-5)	PEL	5 mg/m3	Respirable fraction
		15 mg/m3	Total dust

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Glycerol (CAS 56-81-5)	TWA	10 mg/m3	Mist

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value	Form
2-Mercaptoethanol (CAS 60-24-2)	TWA	0.6 mg/m3	
		0.2 ppm	

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines

US WEEL Guides: Skin designation

2-Mercaptoethanol (CAS 60-24-2) Can be absorbed through the skin.

Appropriate engineering controls

Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear approved safety glasses or goggles.

Skin protection

Hand protection

Wear protective gloves. Nitrile or neoprene gloves are recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

Other

Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection

If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection. In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice. Wash hands after handling. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Liquid.

Color Blue.

Odor Rotten-egg like. Unpleasant odor.

Odor threshold Not available.

pH Neutral.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit Not available.

- lower (%)

Flammability limit Not available.

- upper (%)

Vapor pressure Not available.

Vapor density Not available.

Relative density Not available.

Solubility(ies) Soluble in water.

Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non reactive under normal conditions of use, storage and
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	None known.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides. Sulfur oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion	May cause discomfort if swallowed.
Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin contact	May cause skin irritation. May cause eczema-like skin disorders (dermatitis).
Eye contact	Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics Extreme irritation of eyes and mucous membranes, including burning and tearing. Dermatitis.

Information on toxicological effects

Acute toxicity May cause discomfort if swallowed.

Components	Species	Test Results
2-Mercaptoethanol (CAS 60-24-2)		
Acute		
<i>Oral</i>	LD50 Rat	244 mg/kg
<i>Dermal</i>	LD50 Rabbit	150 mg/kg
<i>Inhalation</i>	LC50 Rat	2 mg/L, 4 hours
Sodium dodecyl sulphate (CAS 151-21-3)		
Acute		
<i>Oral</i>	LD50 Rat	1,288 mg/kg

Skin corrosion/irritation	May cause skin irritation.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory sensitization	No data available.
Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	No data available.
Carcinogenicity	No data available.
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.
Chronic effects	None known.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components	Species	Test Results
Sodium dodecyl sulphate (CAS 151-21-3)		

Aquatic			
Crustacea	EC50	Water flea (<i>Daphnia obtusa</i>)	9.2 - 10.4 mg/L, 48 hours
	LC50	Water flea (<i>Daphnia magna</i>)	8.4 - 11 mg/L, 48 hours
Fish	LC50	Carp, hawk fish (<i>Cirrhinus mrigala</i>)	1.36 mg/L, 96 hours
2-Mercaptoethanol (CAS 60-24-2)			
Aquatic			
Crustacea	EC50	Water flea (<i>Daphnia magna</i>)	0.4 mg/L, 48 hours

Persistence and degradability No data available.

Bioaccumulative potential

Partition coefficient *n*-octanol / water (log *Kow*)

Glycerol (CAS 56-81-5)	-1.76
2-Mercaptoethanol (CAS 60-24-2)	-0.326
Sodium dodecyl sulphate (CAS 151-21-3)	1.6

Mobility in soil No data available.

Mobility in general The product is water soluble and may spread in water systems.

Other adverse effects No data available.

13. Disposal considerations

Disposal instructions	Dispose of in accordance with all applicable regulations. Do not discharge into drains, water courses or onto the ground.
Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of in same manner as unused product.

14. Transport information

DOT

UN number	UN3082
UN proper shipping name	Environmentally hazardous substances, liquid, n.o.s. (2-Mercaptoethanol)
Transport hazard class(es)	9
Subsidiary class(es)	-
Packing group	III
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	8, 146, 335, IB3, T4, TP1, TP29
Packaging exceptions	155
Packaging non bulk	203
Packaging bulk	241

IATA

UN number	UN3082
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (2-Mercaptoethanol)
Transport hazard class(es)	9
Subsidiary class(es)	-
Packaging group	III
Environmental hazards	Yes
Labels required	9
ERG Code	9L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN3082
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UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Mercaptoethanol)
Transport hazard class(es)	9
Subsidiary class(es)	-
Packaging group	III
Environmental hazards	
Marine pollutant	Yes
Labels required	9
EmS	F-A, S-F
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	This product is hazardous according to OSHA 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.	
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)		Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)		Not listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)		
Hazard categories		Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance		No
SARA 311/312 Hazardous chemical		Yes
SARA 313 (TRI reporting)		Not regulated.
Other federal regulations		
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List		Not regulated.
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)		Not regulated.
Safe Drinking Water Act (SDWA)		Not regulated.
Food and Drug Administration (FDA)		Not regulated.
US state regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.	
Massachusetts RTK - Substance List	2-Mercaptoethanol (CAS 60-24-2) Glycerol (CAS 56-81-5)	
New Jersey Worker and Community Right-to-Know Act	Not regulated.	
Pennsylvania RTK - Hazardous Substances	2-Mercaptoethanol (CAS 60-24-2) Glycerol (CAS 56-81-5)	
Rhode Island RTK	Not regulated.	
California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT)		Not listed.
International Inventories		
Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	EC Inventory	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date	11/13/2018
Revision date	—
Version	10
List of abbreviations	EC50: Effective Concentration, 50%. LC50: Lethal Concentration, 50%. LD50: Lethal Dose, 50%.
Further information	Not available.
References	RTECS
Disclaimer	This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.