



## SAFETY DATA SHEET

### 1. Identification

<b>Product identifier</b>	Autophagy Ab Sampler Set Positive control for anti-LC3 antibody
<b>Other means of identification</b>	
<b>Product code</b>	8485
<b>Recommended use</b>	Research use only.
<b>Recommended restrictions</b>	None known.
<b>Manufacturer / Importer / Supplier / Distributor information</b>	
<b>Manufacturer and Supplier (Asia)</b>	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan
<b>Telephone number</b>	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)
<b>Fax</b>	+81-52-238-1440
<b>E-mail</b>	sds-support@mbi.co.jp
<b>URL</b>	<a href="http://www.mbl.co.jp/e/index.html">http://www.mbl.co.jp/e/index.html</a>
<b>Contact person</b>	SDS Support
<b>Supplier</b>	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA
<b>Telephone number</b>	+1-800-200-5459, option 3
<b>Fax</b>	+1-781-939-6963
<b>E-mail</b>	tech@mblintl.com
<b>URL</b>	<a href="http://www.mblintl.com/">http://www.mblintl.com/</a>
<b>Contact person</b>	Technical Service

### 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.	
<b>Health hazards</b>	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1
<b>OSHA hazard(s)</b>	Not classified.	
<b>Environmental hazards</b>	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2
<b>Label elements</b>		
<b>Hazard symbol</b>		
<b>Signal word</b>	Danger	
<b>Hazard statement</b>	Causes serious eye damage. May cause an allergic skin reaction. Toxic to aquatic life with long lasting effects.	
<b>Precautionary statement</b>		
<b>Prevention</b>	Avoid breathing dust. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.	
<b>Response</b>	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	
<b>Storage</b>	Store away from incompatible materials.	
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.	
<b>Hazard(s) not otherwise classified (HNOC)</b>	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

<b>Inhalation</b>	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.
<b>Skin contact</b>	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.
<b>Eye contact</b>	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.
<b>Ingestion</b>	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.
<b>Most important symptoms/ effects, acute and delayed</b>	Extreme irritation of eyes and mucous membranes, including burning and tearing. Dermatitis.
<b>Indication of immediate medical attention and special treatment needed</b>	Treat symptomatically.
<b>General information</b>	First aid personnel must be aware of own risk during rescue.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Use fire-extinguishing media appropriate for surrounding materials.
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	Irritating and toxic gases or fumes may be released during a fire. Carbon oxides. Sulfur oxides.
<b>Special protective equipment and precautions for firefighters</b>	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.
<b>Fire-fighting equipment/ instructions</b>	Use standard fire-fighting procedures and consider the hazards of other involved materials.

### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Wear suitable protective clothing. Avoid contact with eyes, skin, and clothing. For personal protection, see Section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	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.
<b>Environmental precautions</b>	Do not allow to enter drains, sewers or watercourses.

### 7. Handling and storage

<b>Precautions for safe handling</b>	Use with adequate ventilation. Avoid contact with skin and eyes. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
<b>Conditions for safe storage, including any incompatibilities</b>	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/m <sup>3</sup>	Respirable fraction
		15 mg/m <sup>3</sup>	Total dust

**US. ACGIH Threshold Limit Values**

Components	Type	Value	Form
Glycerol (CAS 56-81-5)	TWA	10 mg/m <sup>3</sup>	Mist

**US. Workplace Environmental Exposure Level (WEEL) Guides**

Components	Type	Value	Form
2-Mercaptoethanol (CAS 60-24-2)	TWA	0.6 mg/m <sup>3</sup>	
		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.

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

## 10. Stability and reactivity

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

## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion</b>	May cause discomfort if swallowed.
<b>Inhalation</b>	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
<b>Skin contact</b>	May cause skin irritation. May cause eczema-like skin disorders (dermatitis).
<b>Eye contact</b>	Causes serious eye damage.
<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Extreme irritation of eyes and mucous membranes, including burning and tearing. Dermatitis.

### Information on toxicological effects

<b>Acute toxicity</b>	May cause discomfort if swallowed.
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Components		Species	Test Results
2-Mercaptoethanol (CAS 60-24-2)			
<b>Acute</b>			
<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)			
<b>Acute</b>			
<i>Oral</i>	LD50	Rat	1,288 mg/kg

<b>Skin corrosion/irritation</b>	May cause skin irritation.
<b>Serious eye damage/eye irritation</b>	Causes serious eye damage.
<b>Respiratory sensitization</b>	No data available.
<b>Skin sensitization</b>	May cause an allergic skin reaction.
<b>Germ cell mutagenicity</b>	No data available.
<b>Carcinogenicity</b>	No data available.
<b>Reproductive toxicity</b>	No data available.
<b>Specific target organ toxicity - single exposure</b>	No data available.
<b>Specific target organ toxicity - repeated exposure</b>	No data available.
<b>Aspiration hazard</b>	No data available.
<b>Chronic effects</b>	None known.

## 12. Ecological information

<b>Ecotoxicity</b>	Toxic to aquatic life with long lasting effects.
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Components	Species	Test Results
Sodium dodecyl sulphate (CAS 151-21-3)		

<b>Aquatic</b>			
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)			
<b>Aquatic</b>			
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 *K*<sub>ow</sub>)**

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

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

### 14. Transport information

**DOT**

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

**IATA**

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

**IMDG**

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

## 15. Regulatory information

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

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## 16. Other information

**Issue date** 01/30/2016

**Revision date** 09/30/2016

**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.



## SAFETY DATA SHEET

### 1. Identification

<b>Product identifier</b>	Autophagy Ab Sampler Set Anti-LC3 pAb, Anti-LC3 mAb (8E10), Anti-LC3 mAb (4E12), Anti-Becn1 pAb, Anti-Atg16L pAb, Anti-p62 (SQSTM1) pAb, Anti-Atg5 pAb
<b>Other means of identification</b>	
<b>Product code</b>	8485
<b>Recommended use</b>	Research use only.
<b>Recommended restrictions</b>	None known.
<b>Manufacturer / Importer / Supplier / Distributor information</b>	
<b>Manufacturer and Supplier (Asia)</b>	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan
<b>Telephone number</b>	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)
<b>Fax</b>	+81-52-238-1440
<b>E-mail</b>	sds-support@mbi.co.jp
<b>URL</b>	<a href="http://www.mbl.co.jp/e/index.html">http://www.mbl.co.jp/e/index.html</a>
<b>Contact person</b>	SDS Support
<b>Supplier</b>	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA
<b>Telephone number</b>	+1-800-200-5459, option 3
<b>Fax</b>	+1-781-939-6963
<b>E-mail</b>	tech@mblintl.com
<b>URL</b>	<a href="http://www.mblintl.com/">http://www.mblintl.com/</a>
<b>Contact person</b>	Technical Service

### 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.
<b>Health hazards</b>	Not classified.
<b>OSHA hazard(s)</b>	Not classified.
<b>Label elements</b>	
<b>Hazard symbol</b>	None.
<b>Signal word</b>	None.
<b>Hazard statement</b>	None.
<b>Precautionary statement</b>	
<b>Prevention</b>	Observe good industrial hygiene practices.
<b>Response</b>	Wash thoroughly after handling.
<b>Storage</b>	Store away from incompatible materials.
<b>Disposal</b>	Dispose of waste and residues in accordance with local authority requirements.
<b>Hazard(s) not otherwise classified (HNOC)</b>	None.

### 3. Composition/Information on ingredients

<b>Mixtures</b>		
<b>Chemical name</b>	<b>CAS number</b>	<b>%</b>
Glycerol (Glycerin)	56-81-5	50 - 60

<b>Composition comments</b>	All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
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### 4. First aid measures

<b>Inhalation</b>	Move to fresh air. Get medical attention if discomfort develops or persists.
<b>Skin contact</b>	Remove contaminated clothing. Wash with soap and water. Get medical attention if irritation develops or persists. Wash contaminated clothing before reuse.



<b>Eye contact</b>	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation develops or persists.
<b>Ingestion</b>	Drink plenty of water. Seek medical advice.
<b>Most important symptoms/ effects, acute and delayed</b>	Irritation of eyes and mucous membranes. Mild skin irritation.
<b>Indication of immediate medical attention and special treatment needed</b>	Treat symptomatically.
<b>General information</b>	Get medical attention if any discomfort develops.

## 5. Fire fighting measures

<b>Suitable extinguishing media</b>	Water. Foam. Dry powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	Fire or high temperatures create: Carbon oxides.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.
<b>Fire-fighting equipment/instructions</b>	Move containers from fire area if you can do that without risk. Use water spray to cool unopened containers. Prevent entry to sewers and public waters.

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Ensure adequate ventilation. Avoid inhalation of mist and contact with skin and eyes. For personal protection, see Section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	Dike far ahead of liquid spill for later disposal. Small Spills: Absorb spillage with suitable absorbent material. Clean contaminated surface thoroughly. After removal, flush contaminated area thoroughly with water. Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.
<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so.

## 7. Handling and storage

<b>Precautions for safe handling</b>	Provide adequate ventilation. Use work methods which minimize production of vapors and mists. Avoid inhalation of mist and contact with skin and eyes. Wash hands after handling. Observe good industrial hygiene practices.
<b>Conditions for safe storage, including any incompatibilities</b>	Keep container tightly closed. 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/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Glycerol (CAS 56-81-5)	TWA	10 mg/m <sup>3</sup>	Mist.

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Exposure guidelines</b>	No exposure standards allocated.
<b>Appropriate engineering controls</b>	Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Wear safety glasses.
<b>Skin protection</b>	

<b>Hand protection</b>	Wear protective gloves. Nitrile gloves are recommended, but be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
<b>Other</b>	Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear protective gloves. Nitrile gloves are recommended, but be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
<b>Respiratory protection</b>	In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment with combination filter (gas filter/dust filter). Seek advice from local supervisor.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Handle in accordance with good industrial hygiene and safety practice. Wash hands after handling. Routinely wash work clothing and protective equipment to remove contaminants.

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## 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	Liquid.
<b>Form</b>	Viscous liquid.
<b>Color</b>	Colorless.

**Odor** Odorless.

**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 - lower (%)** Not available.

**Flammability limit - upper (%)** Not available.

**Vapor pressure** Not available.

**Vapor density** Not available.

**Relative density** Not available.

**Solubility(ies)** Soluble in water.

**Partition coefficient** Not available.

**(*n*-octanol/water)**

**Auto-ignition temperature** Not available.

**Decomposition temperature** Not available.

**Viscosity** Not available.

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## 10. Stability and reactivity

**Reactivity** The product is non-reactive under normal conditions of use, storage and transport.

**Chemical stability** Stable at normal conditions.

**Possibility of hazardous reactions** Hazardous reactions do not occur.

**Conditions to avoid** Strong heating. Contact with incompatible materials.

**Incompatible materials** Strong oxidizing agents.

**Hazardous decomposition products** None known.

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## 11. Toxicological information

### Information on likely routes of exposure

**Ingestion** Ingestion may cause irritation and malaise.

**Inhalation** Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

<b>Skin contact</b>	May cause skin irritation. Causes skin irritation.
<b>Eye contact</b>	May cause eye irritation on direct contact. Causes eye irritation.
<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Irritation of eyes and mucous membranes. Mild skin irritation.
<b>Information on toxicological effects</b>	
<b>Acute toxicity</b>	Ingestion may cause irritation and malaise.
<b>Skin corrosion/irritation</b>	May cause skin irritation.
<b>Serious eye damage/eye irritation</b>	May cause eye irritation on direct contact.
<b>Respiratory sensitization</b>	Not classified.
<b>Skin sensitization</b>	Not a skin sensitizer.
<b>Germ cell mutagenicity</b>	Not classified.
<b>Carcinogenicity</b>	IARC not listed.
<b>Reproductive toxicity</b>	Not classified.
<b>Specific target organ toxicity - single exposure</b>	Knowledge about health hazard is incomplete.
<b>Specific target organ toxicity - repeated exposure</b>	Knowledge about health hazard is incomplete.
<b>Aspiration hazard</b>	Not classified.

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## 12. Ecological information

<b>Ecotoxicity</b>	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills have a harmful or damaging effect on the environment.
<b>Persistence and degradability</b>	The product is biodegradable.
<b>Bioaccumulative potential</b>	The product is not bioaccumulating.
<b>Partition coefficient <i>n</i>-octanol / water (log <i>K</i><sub>ow</sub>)</b>	
	Glycerol (CAS 56-81-5) -1.76
<b>Mobility in soil</b>	Expected to be highly mobile in soil.
<b>Mobility in general</b>	The product is water soluble and may spread in water systems.
<b>Other adverse effects</b>	No data available.

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## 13. Disposal considerations

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

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## 14. Transport information

<b>DOT</b>	Not regulated as a dangerous good.
<b>IATA</b>	Not regulated as a dangerous good.
<b>IMDG</b>	Not regulated as a dangerous good.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.

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## 15. Regulatory information

<b>US federal regulations</b>	This product is hazardous according to OSHA 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.	
<b>TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)</b>		Not regulated.
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>		Not regulated.
<b>CERCLA Hazardous Substance List (40 CFR 302.4)</b>		Not listed.
<b>Superfund Amendments and Reauthorization Act of 1986 (SARA)</b>		

**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

**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.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Not listed.

Drug Enforcement Administration (DEA). List 1 &amp; 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Not regulated.

DEA Exempt Chemical Mixtures Code Number

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

Glycerol (CAS 56-81-5)

New Jersey Worker and Community Right-to-Know Act

Not regulated.

Pennsylvania RTK - Hazardous Substances

Glycerol (CAS 56-81-5)

Rhode Island RTK

Glycerol (CAS 56-81-5)

California Proposition 65 - Carcinogens &amp; 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 &amp; 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 01/30/2016

Revision date 09/30/2016

Version 10

Further information Not available.

References IUCLID

**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.