SAFETY DATA SHEET

1. Identification

Product identifier: Autophagy watch

Other means of identification

Product code: 8486

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: Not classified.
OSHA hazard(s): Not classified.

Label elements

Hazard symbol: None.
Signal word: None.
Hazard statement: None.

Precautionary statement

Prevention: Observe good industrial hygiene practices.
Response: Wash thoroughly after handling.
Storage: Store away from incompatible materials.
Disposal: Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC): None.

3. Composition/Information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol (Glycerin)</td>
<td>56-81-5</td>
<td>50-60</td>
</tr>
<tr>
<td>reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one</td>
<td>55965-84-9</td>
<td>&lt; 0.1</td>
</tr>
</tbody>
</table>

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 to fresh air. Get medical attention if discomfort develops or persists.

Skin contact
Remove contaminated clothing. Wash with soap and water. Get medical attention if irritation develops or persists. Wash contaminated clothing before reuse.

Eye contact
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.

Ingestion
Drink plenty of water. Seek medical advice.

Most important symptoms/effects, acute and delayed
Irritation of eyes and mucous membranes. Mild skin irritation.

Indication of immediate medical attention and special treatment needed
Treat symptomatically.

General information
Get medical attention if any discomfort develops.

5. Fire fighting measures

Suitable extinguishing media

Unsuitable extinguishing media
None known.

Specific hazards arising from the chemical
Fire or high temperatures create: Carbon oxides.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions
Move containers from fire area if you can do that without risk. Use water spray to cool unopened containers. Prevent entry to sewers and pubic waters.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation. Avoid inhalation of mist and contact with skin and eyes. For personal protection, see Section 8 of the SDS.

Methods and materials for containment and cleaning up
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.

Environmental precautions
Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling
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.

Conditions for safe storage, including any incompatibilities
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)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol (CAS 56-81-5)</td>
<td>PEL</td>
<td>5 mg/m³</td>
<td>Respirable fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
<td>Total dust</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol (CAS 56-81-5)</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>Mist</td>
</tr>
</tbody>
</table>

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

Exposure guidelines
No exposure standards allocated.
### Appropriate engineering controls

Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.

### Individual protection measures, such as personal protective equipment

<table>
<thead>
<tr>
<th>Eye/face protection</th>
<th>Skin protection</th>
<th>Hand protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>Wear appropriate thermal protective clothing, when necessary.</td>
</tr>
<tr>
<td>Respiratory protection</td>
<td></td>
<td>Handle in accordance with good industrial hygiene and safety practice. Wash hands after handling. Routinely wash work clothing and protective equipment to remove contaminants.</td>
</tr>
</tbody>
</table>

### 9. Physical and chemical properties

#### Appearance

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Form</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid.</td>
<td>Liquid.</td>
<td>Colored, dependent on the conjugates. (Alexa Fluor® 488; yellowish green, Alexa Fluor® 594; purple, Alexa Fluor® 647; pale blue, APC; light blue, Azami-Green; pale green, FITC; yellowish green, PE; pink)</td>
</tr>
</tbody>
</table>

#### 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

<table>
<thead>
<tr>
<th>Flammability limit</th>
<th>- lower (%)</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability limit</td>
<td>- upper (%)</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

#### Flammability (solid, gas)

Not available.

#### Vapor pressure

Not available.

#### Vapor density

Not available.

#### Relative density

Not available.

#### Solubility(ies)

Soluble in water.

#### Partition coefficient

Not available.

#### Auto-ignition temperature

Not available.

#### Decomposition temperature

Not available.

#### Viscosity

Not available.

### 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.

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.
- Skin contact: May cause skin irritation. Causes skin irritation.
- Eye contact: May cause eye irritation on direct contact. Causes eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics
- Irritation of eyes and mucous membranes. Mild skin irritation.

Information on toxicological effects
- Acute toxicity: Ingestion may cause irritation and malaise.
- Skin corrosion/irritation: May cause skin irritation.
- Serious eye damage/eye irritation: May cause eye irritation on direct contact.
- Respiratory sensitization: Not classified.
- Skin sensitization: Not a skin sensitizer.
- Germ cell mutagenicity: Not classified.
- Carcinogenicity: IARC not listed.
- Reproductive toxicity: Not classified.
- Specific target organ toxicity - single exposure: Knowledge about health hazard is incomplete.
- Specific target organ toxicity - repeated exposure: Knowledge about health hazard is incomplete.
- Aspiration hazard: Not classified.

12. Ecological information
Ecotoxicity
- 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.
- The product is biodegradable.
- The product is not bioaccumulating.

Partition coefficient n-octanol / water (log Kow)
- Glycerol (CAS 56-81-5): -1.76

Mobility in soil
- Expected to be highly mobile in soil.

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
- Not regulated as a dangerous good.

IATA
- Not regulated as a dangerous good.

IMDG
- Not regulated as a dangerous good.
### 15. Regulatory information

#### US federal regulations

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>CERCLA Hazardous Substance List (40 CFR 302.4)</td>
<td>Not listed.</td>
</tr>
</tbody>
</table>

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

<table>
<thead>
<tr>
<th>Hazard categories</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA 302 Extremely hazardous substance</td>
<td>No</td>
</tr>
<tr>
<td>SARA 311/312 Hazardous chemical</td>
<td>Yes</td>
</tr>
</tbody>
</table>

#### Other federal regulations

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>Safe Drinking Water Act (SDWA)</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number</td>
<td>Not listed.</td>
</tr>
<tr>
<td>Drug Enforcement Administration (DEA). List 1 &amp; 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>DEA Exempt Chemical Mixtures Code Number</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>Food and Drug Administration (FDA)</td>
<td>Not regulated.</td>
</tr>
</tbody>
</table>

#### US state regulations

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Massachusetts RTK - Substance List</th>
<th>Glycerol (CAS 56-81-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Jersey Worker and Community Right-to-Know Act</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>Pennsylvania RTK - Hazardous Substances</td>
<td>Glycerol (CAS 56-81-5)</td>
</tr>
<tr>
<td>Rhode Island RTK</td>
<td>Glycerol (CAS 56-81-5)</td>
</tr>
<tr>
<td>California Proposition 65 - Carcinogens &amp; Reproductive Toxicity (CRT)</td>
<td>Not listed.</td>
</tr>
</tbody>
</table>

#### International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>EC Inventory</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

*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: 09/25/2019
Version: 10.2
Further information: Not available.
References:
- IUCLID
- HSDB® - Hazardous Substances Data Bank
- Registry of Toxic Effects of Chemical Substances (RTECS)
- C&L Inventory database

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

**Product identifier**  
Autophagy watch  
Anti-LC3 mAb (4E12)

**Other means of identification**

- **Product code**  
  8486
- **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**  
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  - **E-mail**  
    sds-support@mbl.co.jp
  - **URL**  
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  - **Contact person**  
    SDS Support
- **Supplier**  
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  - **Telephone number**  
    +1-800-200-5459, option 3
  - **Fax**  
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  - **E-mail**  
    tech@mblintl.com
  - **URL**  
    http://www.mblintl.com/
  - **Contact person**  
    Technical Service

## 2. Hazard(s) identification

- **Physical hazards**  
  Not classified.
- **Health hazards**  
  Not classified.
- **OSHA hazard(s)**  
  Not classified.

**Label elements**

- **Hazard symbol**  
  None.
- **Signal word**  
  None.
- **Hazard statement**  
  None.

**Precautionary statement**

- **Prevention**  
  Observe good industrial hygiene practices.
- **Response**  
  Wash thoroughly after handling.
- **Storage**  
  Store away from incompatible materials.
- **Disposal**  
  Dispose of waste and residues in accordance with local authority requirements.

**Hazard(s) not otherwise classified (HNOC)**  
None.

## 3. Composition/Information on ingredients

**Mixtures**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol (Glycerin)</td>
<td>56-81-5</td>
<td>50 - 60</td>
</tr>
</tbody>
</table>

**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 to fresh air. Get medical attention if discomfort develops or persists.
Skin contact

Remove contaminated clothing. Wash with soap and water. Get medical attention if irritation develops or persists. Wash contaminated clothing before reuse.

Eye contact

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.

Ingestion

Drink plenty of water. Seek medical advice.

Most important symptoms/effects, acute and delayed

Irritation of eyes and mucous membranes. Mild skin irritation.

Indication of immediate medical attention and special treatment needed

Treat symptomatically.

General information

Get medical attention if any discomfort develops.

5. Fire fighting measures

Suitable extinguishing media


Unsuitable extinguishing media

None known.

Special hazards arising from the chemical

Fire or high temperatures create: Carbon oxides.

Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.

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

Precautions for safe handling

Provide adequate ventilation. Avoid inhalation of mist and contact with skin and eyes. For personal protection, see Section 8 of the SDS.

Methods and materials for containment and cleaning up

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.

Environmental precautions

Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling

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.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol (CAS 56-81-5)</td>
<td>PEL</td>
<td>5 mg/m3</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m3</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
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<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol (CAS 56-81-5)</td>
<td>TWA</td>
<td>10 mg/m3</td>
<td>Mist.</td>
</tr>
</tbody>
</table>

Biological limit values

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

Exposure guidelines

No exposure standards allocated.

Appropriate engineering controls

Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.
Individual protection measures, such as personal protective equipment

Eye/face protection
Wear safety glasses.

Skin protection
Hand protection
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.

Other
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.

Respiratory protection
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.

Thermal hazards
General hygiene considerations
Wear appropriate thermal protective clothing, when necessary.

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: Viscous liquid.
- Color: 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: Not available.
- 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 (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 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.

11. Toxicological information
Information on likely routes of exposure

<table>
<thead>
<tr>
<th>Route</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
<td>Ingestion may cause irritation and malaise.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Under normal conditions of intended use, this material is not expected to be an inhalation hazard.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>May cause skin irritation. Causes skin irritation.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>May cause eye irritation on direct contact. Causes eye irritation.</td>
</tr>
</tbody>
</table>

Symptoms related to the physical, chemical and toxicological characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irritation</td>
<td>Irritation of eyes and mucous membranes. Mild skin irritation.</td>
</tr>
</tbody>
</table>

Information on toxicological effects

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Ingestion may cause irritation and malaise.</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>May cause skin irritation.</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>May cause eye irritation on direct contact.</td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>Not a skin sensitizer.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>IARC not listed.</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified.</td>
</tr>
<tr>
<td>Specific target organ toxicity - single exposure</td>
<td>Knowledge about health hazard is incomplete.</td>
</tr>
<tr>
<td>Specific target organ toxicity - repeated exposure</td>
<td>Knowledge about health hazard is incomplete.</td>
</tr>
</tbody>
</table>

Aspiration hazard

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not classified.</td>
</tr>
</tbody>
</table>

12. Ecological information

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecotoxicity</td>
<td>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.</td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>The product is biodegradable.</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>The product is not bioaccumulating.</td>
</tr>
<tr>
<td>Partition coefficient n-octanol / water (log Kow)</td>
<td>Glycerol (CAS 56-81-5) -1.76</td>
</tr>
<tr>
<td>Mobility in soil</td>
<td>Expected to be highly mobile in soil.</td>
</tr>
<tr>
<td>Mobility in general</td>
<td>The product is water soluble and may spread in water systems.</td>
</tr>
<tr>
<td>Other adverse effects</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

13. Disposal considerations

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

14. Transport information

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT</td>
<td>Not regulated as a dangerous good.</td>
</tr>
<tr>
<td>IATA</td>
<td>Not regulated as a dangerous good.</td>
</tr>
<tr>
<td>IMDG</td>
<td>Not regulated as a dangerous good.</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

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.
- CERCLA Hazardous Substance List (40 CFR 302.4) Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
- SARA 302 Extremely hazardous substance Yes
- SARA 311/312 Hazardous chemical No

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 & 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 & Reproductive Toxicity (CRT) Not listed.

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>EC Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Rico</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*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       09/25/2019
Version             10.2
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.
SAFETY DATA SHEET

1. Identification

Product identifier	Autophagy watch

Other means of identification

Product code	8486

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 Sakaе, 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	Not classified.

OSHA hazard(s)	Not classified.

Label elements

Hazard symbol	None.

Signal word	None.

Hazard statement	None.

Precautionary statement

Prevention	Observe good industrial hygiene practices.

Response	Wash hands after handling.

Storage	None.

Disposal	None.

Hazard(s) not otherwise classified (HNOC)	None.

3. Composition/Information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one</td>
<td>55965-84-9</td>
<td>&lt; 0.1</td>
</tr>
</tbody>
</table>

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

**Skin contact**
Remove contaminated clothing. Dry skin with paper towel or similar. Get medical attention if irritation develops or persists.

**Eye contact**
Rinse immediately with plenty of water, also under the eyelids. Get medical attention if irritation develops or persists.

**Ingestion**
Drink plenty of water. Get medical attention if any discomfort occurs.

**Most important symptoms/effects, acute and delayed**
Dry skin.

**Indication of immediate medical attention and special treatment needed**
Treat symptomatically.

**General information**
Get medical attention if any discomfort develops.

### 5. Fire-fighting measures

**Suitable extinguishing media**
Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media**
None known.

**Special hazards arising from the chemical**
None known.

**Special protective equipment and precautions for firefighters**
Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.

**Fire-fighting equipment/instructions**
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

**Personal precautions, protective equipment and emergency procedures**
Avoid contact with eyes and prolonged skin contact. For personal protection, see Section 8 of the SDS.

**Methods and materials for containment and cleaning up**
Absorb spillage with suitable absorbent material. Flush contaminated area thoroughly with water, following removal of the spillage. For waste disposal, see Section 13 of the SDS. Prevent further leakage or spillage if safe to do so.

### 7. Handling and storage

**Precautions for safe handling**
Avoid contact with eyes and prolonged skin contact. Wash hands after handling. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**
Keep container tightly closed.

### 8. Exposure controls/personal protection

**Occupational exposure limits**
No exposure limits noted for ingredient(s).

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

**Appropriate engineering controls**
Ensure adequate ventilation is available, especially in confined areas.

**Individual protection measures, such as personal protective equipment**

- **Eye/face protection**
  Risk of splashes: Wear safety glasses with side shields.

- **Skin protection**
  Risk of contact: Wear protective gloves. Suitable gloves can be recommended by the glove supplier.

- **Hand protection**
  Wear appropriate clothing to prevent repeated or prolonged skin contact.

- **Respiratory protection**
  Where excessive vapor, mist or dust may result, use NIOSH approved respiratory protection 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**: 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.

#### Flammability (solid, gas)
- **Not applicable.**

#### Chemical stability
- **Stable at normal conditions.**

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

#### Possibility of hazardous reactions
- **Hazardous polymerization does not occur.**
- **Hazardous reactions do not occur.**

#### Conditions to avoid
- **None known.**

#### Incompatible materials
- **None known.**

#### Hazardous decomposition products
- **None known.**

### 10. Stability and reactivity

#### Ingestion
- **Large quantities**: May cause discomfort if swallowed.

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

#### Skin contact
- **Prolonged contact may cause dryness of the skin.**

#### Eye contact
- **Direct contact with eyes may cause temporary irritation.**
- **Dry skin.**

### 11. Toxicological information

#### Information on likely routes of exposure

#### Ingestion
- **Large quantities**: May cause discomfort if swallowed.

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

#### Skin contact
- **Prolonged contact may cause dryness of the skin.**

#### Eye contact
- **Direct contact with eyes may cause temporary irritation.**
- **Dry skin.**

#### Information on toxicological effects

#### Acute toxicity
- **Large quantities**: May cause discomfort if swallowed.

#### Skin corrosion/irritation
- **May cause mild skin irritation.**

#### Serious eye damage/eye
- **May cause eye irritation.**
Respiratory sensitization  No data available.
Skin sensitization  No data available.
Germ cell mutagenicity  No data available.
Carcinogenicity  No data available.
Reproductive toxicity  No data available.
Specific target organ toxicity  No data available.
- single exposure
Specific target organ toxicity  No data available.
- repeated exposure
Aspiration hazard  No data available.

12. Ecological information

Ecotoxicity  The product components are 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.
Persistence and degradability  No data available.
Bioaccumulative potential  No data available.
Mobility in soil  Expected to be highly mobile in soil.
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, watercourses 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  Not regulated as dangerous goods.
IATA  Not regulated as dangerous goods.
IMDG  Not regulated as dangerous goods.
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 not hazardous according to OSHA 29CFR 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.
CERCLA Hazardous Substance List (40 CFR 302.4)  Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)  Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No

Hazard categories
SARA 302 Extremely hazardous substance  No
SARA 311/312 Hazardous chemical  No
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)  
Food and Drug Administration (FDA)  

**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  
New Jersey Worker and Community Right-to-Know Act  
Pennsylvania RTK - Hazardous Substances  
Rhode Island RTK  
California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT)

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
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<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>EC Inventory</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

*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**

<table>
<thead>
<tr>
<th>Issue date</th>
<th>01/30/2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision date</td>
<td>09/25/2019</td>
</tr>
<tr>
<td>Version</td>
<td>10.2</td>
</tr>
<tr>
<td>Further information</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
| References        | HSDB® - Hazardous Substances Data Bank  
Registry of Toxic Effects of Chemical Substances (RTECS)  
C&L Inventory database |
| 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

Product identifier Autophagy watch

Other means of identification

Product code 8486

Recommended use Research use only.

Manufacturer / Importer / Supplier / Distributor information

Manufacturer and Supplier (Asia) Medical & Biological Laboratories (MBL) Co., Ltd.

Phone 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

Phone number +1-800-200-5459, option 3

Fax +1-781-939-6863

E-mail tech@mblintl.com

URL http://www.mblintl.com/

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 before reuse.

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

<table>
<thead>
<tr>
<th>Mixtures</th>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Glycerol (Glycerin)</td>
<td>56-81-5</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>2-Mercaptoethanol</td>
<td>60-24-2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Sodium dodecyl sulphate</td>
<td>151-21-3</td>
<td>2</td>
</tr>
</tbody>
</table>

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. Do not allow to enter drains, sewers or watercourses.

Environmental precautions

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.
8. Exposure controls/personal protection

Occupational exposure limits

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol (CAS 56-81-5)</td>
<td>PEL</td>
<td>5 mg/m³</td>
<td>Respirable fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
<td>Total dust</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol (CAS 56-81-5)</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>Mist</td>
</tr>
</tbody>
</table>

US. Workplace Environmental Exposure Level (WEEL) Guides

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Mercaptoethanol (CAS 60-24-2)</td>
<td>TWA</td>
<td>0.6 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.2 ppm</td>
<td></td>
</tr>
</tbody>
</table>

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

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.

Respiratory protection

General hygiene considerations

Wear appropriate thermal protective clothing, when necessary.

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

Vapor pressure
- Not available.

Vapor density
- Not available.

Relative density
- Not available.

Solubility(ies)
- Soluble in water.

Partition coefficient
- 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 transport.

**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.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Mercaptoethanol (CAS 60-24-2)</td>
<td>Oral</td>
<td>LD50</td>
</tr>
<tr>
<td></td>
<td>Dermal</td>
<td>LD50</td>
</tr>
<tr>
<td></td>
<td>Inhalation</td>
<td>LC50</td>
</tr>
</tbody>
</table>

| Sodium dodecyl sulphate (CAS 151-21-3) | Oral | 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.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium dodecyl sulphate (CAS 151-21-3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td>Crustacea</td>
<td>EC50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LC50</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Carp, hawk fish (Cirrhinus mrigala)</td>
</tr>
<tr>
<td>2-Mercaptoethanol (CAS 60-24-2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td>Crustacea</td>
<td>EC50</td>
</tr>
</tbody>
</table>

Persistence and degradability
No data available.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

<table>
<thead>
<tr>
<th>Component</th>
<th>log Kow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol (CAS 56-81-5)</td>
<td>-1.76</td>
</tr>
<tr>
<td>2-Mercaptoethanol (CAS 60-24-2)</td>
<td>-0.326</td>
</tr>
<tr>
<td>Sodium dodecyl sulphate (CAS 151-21-3)</td>
<td>1.6</td>
</tr>
</tbody>
</table>

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) | -
<table>
<thead>
<tr>
<th><strong>Packaging group</strong></th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental hazards</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Labels required</strong></td>
<td>9</td>
</tr>
<tr>
<td><strong>ERG Code</strong></td>
<td>9L</td>
</tr>
<tr>
<td><strong>Special precautions for user</strong></td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
</tbody>
</table>

**IMDG**

<table>
<thead>
<tr>
<th><strong>UN number</strong></th>
<th>UN3082</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UN proper shipping name</strong></td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Mercaptoethanol)</td>
</tr>
<tr>
<td><strong>Transport hazard class(es)</strong></td>
<td>9</td>
</tr>
<tr>
<td><strong>Subsidiary class(es)</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Packaging group</strong></td>
<td>III</td>
</tr>
<tr>
<td><strong>Environmental hazards</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Marine pollutant</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Labels required</strong></td>
<td>9</td>
</tr>
<tr>
<td><strong>EmS</strong></td>
<td>F-A, S-F</td>
</tr>
<tr>
<td><strong>Special precautions for user</strong></td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th><strong>TSCA Section 12(b) Export Notification</strong></th>
<th>(40 CFR 707, Subpt. D)</th>
<th>Not regulated.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CERCLA Hazardous Substance List</strong></td>
<td>(40 CFR 302.4)</td>
<td>Not listed.</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th><strong>Massachusetts RTK - Substance List</strong></th>
<th>2-Mercaptoethanol (CAS 60-24-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Glycerol (CAS 56-81-5)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>New Jersey Worker and Community Right-to-Know Act</strong></th>
<th>Not regulated.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pennsylvania RTK - Hazardous Substances</strong></td>
<td>2-Mercaptoethanol (CAS 60-24-2)</td>
</tr>
<tr>
<td></td>
<td>Glycerol (CAS 56-81-5)</td>
</tr>
<tr>
<td><strong>Rhode Island RTK</strong></td>
<td>Not regulated.</td>
</tr>
</tbody>
</table>

**California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT)**

Not listed.

### International Inventories

<table>
<thead>
<tr>
<th><strong>Country(s) or region</strong></th>
<th><strong>Inventory name</strong></th>
<th><strong>On inventory (yes/no)</strong>*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Australia</strong></td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
</tbody>
</table>
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  01/30/2016
Revision date  09/25/2019
Version  10.2
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

Product identifier
Autophagy watch
Chloroquine solution (x1000)

Other means of identification

Product code 8486
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 Not classified.
OSHA hazard(s) Not classified.

Label elements

Hazard symbol None.
Signal word None.
Hazard statement The mixture does not meet the criteria for classification.
Precautionary statement

Prevention Observe good industrial hygiene practices.
Response Wash hands after handling.
Storage Store away from incompatible materials.
Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None.
Supplemental information None.

3. Composition/Information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloroquine diphosphate</td>
<td>50-63-5</td>
<td>2.6</td>
</tr>
</tbody>
</table>

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 to fresh air. Call a physician if symptoms develop or persist.
Skin contact | Wash off with soap and water. Get medical attention if irritation develops and persists.
---|---
Eye contact | Rinse with water. Get medical attention if irritation develops and persists.
Ingestion | Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed Direct contact with eyes may cause temporary irritation.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Symptoms may be delayed.

General information Get medical attention if any discomfort develops.

5. Fire-fighting measures

| Suitable extinguishing media | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). |
| Unsuitable extinguishing media | None known. |

| Specific hazards arising from the chemical | During fire, gases hazardous to health may be formed. |
| Special protective equipment and precautions for firefighters | Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire. |
| Fire-fighting equipment/instructions | Move containers from fire area if you can do it without risk. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |

| General fire hazards | Will burn if involved in a fire. |

6. Accidental release measures

| Personal precautions, protective equipment and emergency procedures | Avoid inhalation of mist and contact with skin and eyes. For personal protection, see Section 8 of the SDS. |
| Methods and materials for containment and cleaning up | Absorb spillage with suitable absorbent material. After removal, flush contaminated area thoroughly with water. For waste disposal, see Section 13 of the SDS. |
| Environmental precautions | Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. |

7. Handling and storage

| Precautions for safe handling | Avoid contact with eyes and prolonged skin contact. Wash hands after handling. Observe good industrial hygiene practices. |
| Conditions for safe storage, including any incompatibilities | Store in original container. |

8. Exposure controls/personal protection

| Occupational exposure limits | No exposure limits noted for ingredient(s). |
| Biological limit values | No biological exposure limits noted for the ingredient(s). |
| Appropriate engineering controls | Provide adequate ventilation and minimize the risk of inhalation of vapors. |

| Individual protection measures, such as personal protective equipment | Risk of splashes: Chemical respirator with organic vapor cartridge and full facepiece. |
| Eye/face protection | Risk of contact: Wear protective gloves. Suitable gloves can be recommended by the glove supplier. |
| Skin protection | Use of an impervious apron is recommended. Wear appropriate clothing to prevent repeated or prolonged skin contact. |
| Hand protection | In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment. |
| Other | |
9. Physical and chemical properties

Appearance
- Physical state: Liquid.
- Form: Liquid.
- Color: Colorless.
- Odor: Odorless.
- Odor threshold: Not available.
- pH: 7.2 - 7.4
- 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 (n-octanol/water): Not available.
- Auto-ignition temperature: Not available.
- Decomposition temperature: Not available.
- Viscosity: Not available.
- Explosive properties: Not explosive.
- Oxidizing properties: Not oxidizing.

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 polymerization does not occur. Hazardous reactions do not occur.
Conditions to avoid: Contact with incompatible materials.
Incompatible materials: Strong oxidizing agents.

11. Toxicological information

Information on likely routes of exposure
- Ingestion: Swallowing large doses causes severe gastrointestinal irritation.
- Inhalation: Prolonged inhalation may be harmful.
- Skin contact: Prolonged skin contact may cause irritation.
- Eye contact: Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics:
- Direct contact with eyes may cause temporary irritation.

Information on toxicological effects
- Acute toxicity: May cause discomfort if swallowed.
Skin corrosion/irritation: Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation: Direct contact with eyes may cause temporary irritation.
Respiratory sensitization: Not a respiratory sensitizer.
Skin sensitization: This product is not expected to cause skin sensitization.
Germ cell mutagenicity: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity:

Reproductive toxicity: This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure: Not classified.
Specific target organ toxicity - repeated exposure: Not classified.
Aspiration hazard: Not an aspiration hazard.

12. Ecological information

Ecotoxicity: The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistency and degradability: No data available.
Bioaccumulative potential: No data available.
Mobility in soil: The product is water soluble and may spread in water systems.
Mobility in general: The product is soluble in water.
Other adverse effects: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

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: The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
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: Not regulated as dangerous goods.
IATA: Not regulated as dangerous goods.
IMDG: Not regulated as dangerous goods.
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 not known to be a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 (SARA):
Hazard categories

<table>
<thead>
<tr>
<th>Hazard category</th>
<th>Immediate Hazard</th>
<th>Delayed Hazard</th>
<th>Fire Hazard</th>
<th>Pressure Hazard</th>
<th>Reactivity Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA 302 Extremely hazardous substance</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>SARA 311/312 Hazardous chemical</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>SARA 313 (TRI reporting)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

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.

US state regulations

- Massachusetts RTK - Substance List: Not listed.
- New Jersey Worker and Community Right-to-Know Act: Not listed.
- Pennsylvania RTK - Hazardous Substances: Not listed.
- Rhode Island RTK: Not listed.
- California Proposition 65: Not listed.

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>EC Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>No</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

* 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 09/25/2019
Version 10.2
Further information Not available.
References
- HSDB® - Hazardous Substances Data Bank
- ECHA C&L Inventory database

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.
## 1. Identification

**Product identifier**
Autophagy watch  
Bafilomycin A1 solution (x1000)

**Other means of identification**

<table>
<thead>
<tr>
<th>Product code</th>
<th>8486</th>
</tr>
</thead>
</table>

**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**
Flammable liquids  
Category 4

**Health hazards**
Not classified.

**OSHA hazard(s)**
Not classified.

**Label elements**

| Hazard symbol | None. |
| Signal word | Warning |
| Hazard statement | Combustible liquid. |

**Precautionary statement**

| Prevention | Keep away from flames and hot surfaces. - No smoking. Wear protective gloves/eye protection/face protection. |
| Response | In case of fire: Use foam, carbon dioxide, dry powder or water fog for extinction. |
| Storage | Store in a well-ventilated place. Keep cool. |
| 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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide (DMSO)</td>
<td>67-68-5</td>
<td>90 - 100</td>
</tr>
</tbody>
</table>

**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 to fresh air. Get medical attention if any discomfort continues.
Skin contact
Remove contaminated clothing. Wash with soap and water. Get medical attention if irritation develops or persists. Wash contaminated clothing before reuse. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.
Eye contact
Immediately flush eye(s) with plenty of water. Remove any contact lenses and open eyelids wide apart. Get medical attention if irritation develops or persists.
Ingestion
Rinse mouth thoroughly. Get medical attention if any discomfort continues.
Inhalation
Move to fresh air. Get medical attention if any discomfort continues.

5. Fire-fighting measures

Suitable extinguishing media
Unsuitable extinguishing media
None known.
Specific hazards arising from the chemical
Vapors may form explosive mixtures with air. By heating and fire, harmful vapors/gases may be formed.
Special protective equipment and precautions for firefighters
Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions
Move containers from fire area if you can do that without risk. Use water spray to cool unopened containers. Prevent entry to sewers and pubic waters.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Avoid inhalation of mist and contact with skin and eyes. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up
Dike far ahead of liquid spill for later disposal. Small Spills: Absorb spillage with non-combustible, 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. Prevent further leakage or spillage if safe to do so.
Environmental precautions

7. Handling and storage

Precautions for safe handling
Provide adequate ventilation. Use work methods which minimize production of vapors and mists. Avoid inhalation of mist and contact with skin and eyes. Do not smoke, use open fire or other sources of ignition. Wash hands after handling. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities
Keep away from sources of ignition - No smoking. Keep container tightly closed. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide (DMSO) (CAS 67-68-5)</td>
<td>TWA</td>
<td>250 ppm</td>
</tr>
</tbody>
</table>

Biological limit values
No biological exposure limits noted for the ingredient(s).
Exposure guidelines
No exposure standards allocated.
Appropriate engineering controls
Provide adequate ventilation and minimize the risk of inhalation of vapors and mists. Use explosion-proof equipment.
Individual protection measures, such as personal protective equipment
Eye/face protection
If risk of splashing, wear safety goggles or face shield.

Skin protection
Wear protective gloves. Butyl rubber 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.

Hand protection
Wear apron or protective clothing in case of splashes.

Other
Wear appropriate thermal protective clothing, when necessary.

Respiratory protection
If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection. Seek advice from local supervisor.

Thermal hazards

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: Colorless.

Odor: Garlic-like odor.
Odor threshold: Not available.

pH: Not available.

Melting point/freezing point: Not available.

Initial boiling point and boiling range:
372.2 °F (189 °C) DMSO

Flash point: 188.6 °F (87.0 °C) DMSO

Flammability (solid, gas): Not applicable.

Upper/lower flammability or explosive limits
Flammability limit - lower (%): Not available.
- upper (%): Not available.

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.
Explosive properties: Not explosive.
Oxidizing properties: Not oxidizing.

10. Stability and reactivity

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

Chemical stability: Stable under normal temperature conditions.

Possibility of hazardous reactions: None known.

Conditions to avoid: Heat, flames and sparks. Moisture.

Incompatible materials: Strong oxidizing agents.

Hazardous decomposition products: Sulfur oxides. Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion: Large quantities: May be absorbed in the body and cause dizziness, nausea and vomiting.
**Inhalation**

Components of the product may be absorbed into the body by inhalation.

**Skin contact**

May be absorbed through the skin. DMSO (dimethyl sulfoxide) easily penetrates the skin and may enhance the rate of skin absorption of skin-permeable substances.

**Eye contact**

Direct contact with eyes may cause temporary irritation.

**Symptoms related to the physical, chemical and toxicological characteristics**

Mild eye irritation. May cause mild skin irritation.

**Information on toxicological effects**

**Acute toxicity**

Large quantities: May cause discomfort if swallowed. May be absorbed in the body and cause dizziness, nausea and vomiting.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide (DMSO) (CAS 67-68-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>Mouse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7,920 mg/kg</td>
</tr>
<tr>
<td></td>
<td>LD50</td>
<td>Rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17.9 ml/kg</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**

May cause mild skin irritation. DMSO (dimethyl sulfoxide) easily penetrates the skin and may enhance the rate of skin absorption of skin-permeable substances.

**Serious eye damage/eye irritation**

Direct contact with eyes may cause temporary irritation.

**Respiratory sensitization**

No data available.

**Skin sensitization**

No data available.

**Germ cell mutagenicity**

No data available.

**Carcinogenicity**

<table>
<thead>
<tr>
<th>IARC Monographs. Overall Evaluation of Carcinogenicity</th>
<th>Not listed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTP Report on Carcinogens</td>
<td>Not listed.</td>
</tr>
</tbody>
</table>

**Reproductive toxicity**

No data available.

**Specific target organ toxicity**

- single exposure: No data available.
- repeated exposure: No data available.

**Aspiration hazard**

No data available.

---

**12. Ecological information**

**Ecotoxicity**

The product components are 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.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethyl sulfoxide (DMSO) (CAS 67-68-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Rainbow trout, donaldson trout</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Oncorhynchus mykiss)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>33,000 - 37,000 mg/L, 96 hours</td>
</tr>
</tbody>
</table>

**Persistence and degradability**

No data available.

**Bioaccumulative potential**

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

Dimethyl sulfoxide (DMSO) (CAS 67-68-5) -2.03

**Mobility in soil**

This product is water soluble and may disperse in soil.

**Mobility in general**

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

**Other adverse effects**

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

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**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.
### 14. Transport information

**DOT**
- **UN number**: NA1993
- **UN proper shipping name**: Combustible liquids, n.o.s. (Dimethyl sulfoxide (DMSO))
- **Transport hazard class(es)**
  - **Class**: Combustible Liquid.
  - **Subsidiary risk**: –
  - **Label(s)**: None
- **Packing group**: III
- **Special precautions for user**: Read safety instructions, SDS and emergency procedures before handling. This material is not regulated under 49 CFR if in a container of 119 gallon capacity or less.
- **Special provisions**: IB3, T1, T4, TP1
- **Packaging exceptions**: 150
- **Packaging non bulk**: 203
- **Packaging bulk**: 241
- **IATA**: Not regulated as dangerous goods.
- **IMDG**: Not regulated as dangerous goods.
- **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 a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.**
- **TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**: Not regulated.
- **CERCLA Hazardous Substance List (40 CFR 302.4)**: Not listed.
- **Superfund Amendments and Reauthorization Act of 1986 (SARA) Hazard categories**
  - Immediate Hazard - No
  - Delayed Hazard - No
  - Fire Hazard - Yes
  - Pressure Hazard - No
  - Reactivity Hazard - No
  - SARA 302 Extremely hazardous substance: Not listed.
  - 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.
- **US state regulations**
  - **Massachusetts RTK - Substance List**: Not regulated.
  - **New Jersey Worker and Community Right-to-Know Act**: Dimethyl sulfoxide (DMSO) (CAS 67-68-5)
  - **Pennsylvania Worker and Community Right-to-Know Law**: Not regulated.
  - **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 01/30/2016
Revision date 09/25/2019
Version 10.2

List of abbreviations
LC50: Lethal Concentration, 50%.
LD50: Lethal Dose, 50%.

Further information
Not available.

References
International Chemical Safety Cards (ICSC)
GESTIS Substance Database
ECHA CHEM

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

Product identifier: Autophagy watch
Cell lysis buffer (x5)

Other means of identification

Product code: 8486
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: Not classified.
OSHA hazard(s): Not classified.
Environmental hazards: Hazardous to the aquatic environment, acute hazard Category 3

Label elements

Hazard symbol: None.
Signal word: None.
Hazard statement: Harmful to aquatic life.
Precautionary statement
Prevention: Avoid release to the environment. Observe good industrial hygiene practices.
Response: Wash hands after handling.
Storage: None.
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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonidet P-40</td>
<td>9016-45-9</td>
<td>0.25 - &lt; 1</td>
</tr>
</tbody>
</table>

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

Skin contact
Remove contaminated clothing. Dry skin with paper towel or similar. Get medical attention if irritation develops or persists.

Eye contact
Rinse immediately with plenty of water, also under the eyelids. Get medical attention if irritation develops or persists.

Ingestion
Drink plenty of water. Get medical attention if any discomfort occurs.

Most important symptoms/effects, acute and delayed
Dry skin.

Indication of immediate medical attention and special treatment needed
Treat symptomatically.

General information
Get medical attention if any discomfort develops.

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
None known.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions
Move containers from fire area if you can do that without risk. Use water spray to cool unopened containers. Prevent entry to sewers and pubic waters.

6. Accidental release measures
Personal precautions, protective equipment and emergency procedures
Avoid contact with eyes and prolonged skin contact. For personal protection, see Section 8 of the SDS.

Methods and materials for containment and cleaning up
Absorb spillage with suitable absorbent material. After removal, flush contaminated area thoroughly with water. For waste disposal, see Section 13 of the SDS.

Environmental precautions
Prevent further leakage or spillage if safe to do so.

7. Handling and storage
Precautions for safe handling
Avoid contact with eyes and prolonged skin contact. Wash hands after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Keep container tightly closed.

8. Exposure controls/personal protection
Occasional exposure limits
No exposure limits noted for ingredient(s).

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

Appropriate engineering controls
Ventilation is not normally required.

Individual protection measures, such as personal protective equipment

<table>
<thead>
<tr>
<th>Protection Type</th>
<th>General Protection Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye/face protection</td>
<td>Risk of splashes: Wear safety glasses with side shields.</td>
</tr>
<tr>
<td>Skin protection</td>
<td>Risk of contact: Wear protective gloves. Suitable gloves can be recommended by the glove supplier.</td>
</tr>
<tr>
<td>Hand protection</td>
<td>Wear appropriate clothing to prevent repeated or prolonged skin contact.</td>
</tr>
<tr>
<td>Other</td>
<td>No special precautions. Seek advice from local supervisor.</td>
</tr>
<tr>
<td>Respiratory protection</td>
<td>Wear appropriate thermal protective clothing, when necessary.</td>
</tr>
<tr>
<td>Thermal hazards</td>
<td>Handle in accordance with good industrial hygiene and safety practice. Wash hands after handling. Routinely wash work clothing and protective equipment to remove contaminants.</td>
</tr>
<tr>
<td>General hygiene considerations</td>
<td></td>
</tr>
</tbody>
</table>
9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Appearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
</tr>
<tr>
<td>Form</td>
</tr>
<tr>
<td>Color</td>
</tr>
<tr>
<td>Odor</td>
</tr>
<tr>
<td>Odor threshold</td>
</tr>
<tr>
<td>pH</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
</tr>
<tr>
<td>Flash point</td>
</tr>
<tr>
<td>Evaporation rate</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
</tr>
<tr>
<td>Flammability limit - lower (%)</td>
</tr>
<tr>
<td>Flammability limit - upper (%)</td>
</tr>
<tr>
<td>Vapor pressure</td>
</tr>
<tr>
<td>Vapor density</td>
</tr>
<tr>
<td>Relative density</td>
</tr>
<tr>
<td>Solubility(ies)</td>
</tr>
<tr>
<td>Partition coefficient</td>
</tr>
<tr>
<td>(n-octanol/water)</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
</tr>
<tr>
<td>Decomposition temperature</td>
</tr>
<tr>
<td>Viscosity</td>
</tr>
</tbody>
</table>

10. Stability and reactivity

<table>
<thead>
<tr>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>The product is non-reactive under normal conditions of use, storage and transport.</td>
</tr>
<tr>
<td>Chemical stability</td>
</tr>
<tr>
<td>Stable at normal conditions.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
</tr>
<tr>
<td>Hazardous reactions do not occur.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
</tr>
<tr>
<td>None known.</td>
</tr>
<tr>
<td>Incompatible materials</td>
</tr>
<tr>
<td>None known.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
</tr>
<tr>
<td>None known.</td>
</tr>
</tbody>
</table>

11. Toxicological information

<table>
<thead>
<tr>
<th>Information on likely routes of exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
</tr>
<tr>
<td>Inhalation</td>
</tr>
<tr>
<td>Skin contact</td>
</tr>
<tr>
<td>Eye contact</td>
</tr>
<tr>
<td>Symptoms related to the physical, chemical and toxicological characteristics</td>
</tr>
<tr>
<td>Dry skin.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information on toxicological effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
</tr>
<tr>
<td>Respiratory sensitization</td>
</tr>
</tbody>
</table>
12. Ecological information

<table>
<thead>
<tr>
<th>Ecotoxicity</th>
<th>Toxic to aquatic life.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Components</strong></td>
<td><strong>Species</strong></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
</tr>
<tr>
<td>Nonidet P-40 (CAS 9016-45-9)</td>
<td>Japanese killifish</td>
</tr>
<tr>
<td></td>
<td>Goldfish</td>
</tr>
<tr>
<td></td>
<td>Bluegill</td>
</tr>
<tr>
<td></td>
<td>Rainbow trout</td>
</tr>
</tbody>
</table>

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                                      | Not regulated as dangerous goods. |
| IATA                                     | Not regulated as dangerous goods. |
| IMDG                                     | Not regulated as dangerous goods. |
| 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 not hazardous according to OSHA 29CFR 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. |
| CERCLA Hazardous Substance List (40 CFR 302.4) | Not listed. |
| Superfund Amendments and Reauthorization Act of 1986 (SARA) Hazard categories | Immediate Hazard - No |
|                                          | Delayed Hazard - No |
|                                          | Fire Hazard - No |
|                                          | Pressure Hazard - No |
|                                          | Reactivity Hazard - No |
|                                          | SARA 302 Extremely hazardous substance | No |
SARA 311/312 Hazardous chemical No
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 Not regulated.
New Jersey Worker and Community Right-to-Know Act Not regulated.
Pennsylvania RTK - Hazardous Substances Not regulated.
Rhode Island RTK Not regulated.
California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT) Not listed.

International Inventories
<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>EC Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*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 09/25/2019
Version 10.2
List of abbreviations LC50: Lethal Concentration, 50%.
Further information Not available.
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.