SAFETY DATA SHEET

Polyethylene Glycol - low molecular weight (Mp 106)

Section 1. Identification

Product identifier : Polyethylene Glycol - low molecular weight (Mp 106)
Chemical name : 2,2'-oxybisethanol
Part no. : PL2070-1001, PL2070-1005, PL2070-1010
Material uses : Reagents and Standards for Analytical Chemistry Laboratory Use
                  Container type: Bottle
                  PL2070-1001 PEG nominal Mp 106, 1g
                  PL2070-1005 PEG nominal Mp 106, 5g
                  PL2070-1010 PEG nominal Mp 106, 10g
Supplier/Manufacturer : Agilent Technologies, Inc.
                       5301 Stevens Creek Blvd
                       Santa Clara, CA 95051, USA
                       800-227-9770
Emergency telephone number (with hours of operation) : CHEMTREC®: 1-800-424-9300

Section 2. Hazard identification

Classification of the substance or mixture

H302 ACUTE TOXICITY (oral) - Category 4
H320 EYE IRRITATION - Category 2B
H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (kidneys) (oral) - Category 2

GHS label elements

Hazard pictograms : ![Hazard pictograms]

Signal word : Warning

Hazard statements : H302 - Harmful if swallowed.
                     H320 - Causes eye irritation.
                     H373 - May cause damage to organs through prolonged or repeated exposure if swallowed. (kidneys)

Precautionary statements

Prevention : P260 - Do not breathe vapor.
              P270 - Do not eat, drink or smoke when using this product.
              P264 - Wash hands thoroughly after handling.
Response : P314 - Get medical attention if you feel unwell.
           P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.
           P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
           P337 + P313 - If eye irritation persists: Get medical attention.
Storage : Not applicable.
Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Date of issue/Date of revision : 08/31/2020
Date of previous issue : 02/11/2020
Version : 1.1 1/10
Polyethylene Glycol - low molecular weight (Mp 106)

Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Ingredient name</th>
<th>% (w/w)</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2', 2'-oxybisethanol</td>
<td>80 - 100</td>
<td>111-46-6</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-aid measures

**Description of necessary first aid measures**

- **Eye contact**: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell.

- **Inhalation**: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

- **Skin contact**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.

- **Ingestion**: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Most important symptoms/effects, acute and delayed**

- **Potential acute health effects**
  - **Eye contact**: Causes eye irritation.
  - **Inhalation**: No known significant effects or critical hazards.
  - **Skin contact**: No known significant effects or critical hazards.
  - **Ingestion**: Harmful if swallowed.

**Over-exposure signs/symptoms**

- **Eye contact**: Adverse symptoms may include the following: irritation, watering, redness
- **Inhalation**: No specific data.
- **Skin contact**: No specific data.
- **Ingestion**: No specific data.
Section 4. First-aid measures

<table>
<thead>
<tr>
<th>Indication of immediate medical attention and special treatment needed, if necessary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Notes to physician</strong></td>
</tr>
<tr>
<td><strong>Specific treatments</strong></td>
</tr>
<tr>
<td><strong>Protection of first-aiders</strong></td>
</tr>
</tbody>
</table>

See toxicological information (Section 11)

Section 5. Fire-fighting measures

<table>
<thead>
<tr>
<th>Extinguishing media</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Suitable extinguishing media</strong></td>
</tr>
<tr>
<td><strong>Unsuitable extinguishing media</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific hazards arising from the chemical</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hazardous thermal decomposition products</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special protective actions for fire-fighters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special protective equipment for fire-fighters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
</tr>
</tbody>
</table>

Section 6. Accidental release measures

<table>
<thead>
<tr>
<th>Personal precautions, protective equipment and emergency procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>For non-emergency personnel</strong></td>
</tr>
</tbody>
</table>

| **For emergency responders** | If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |

<table>
<thead>
<tr>
<th>Environmental precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Methods and materials for containment and cleaning up</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Methods for cleaning up</strong></td>
</tr>
</tbody>
</table>
Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
</table>
| 2,2'-oxybisethanol   | **AIHA WEEL (United States, 7/2018).**
|                      | TWA: 10 mg/m³ 8 hours.                               |

Appropriate engineering controls: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection
## Section 8. Exposure controls/personal protection

### Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

### Body protection
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

### Other skin protection
Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

### Respiratory protection
Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance
- **Physical state**: Liquid. [Viscous liquid.]
- **Color**: Colorless.
- **Odor**: Slight
- **Odor threshold**: Not available.
- **pH**: 5 to 8 [Conc. (% w/w): 50%]
- **Melting point**: -6.5°C (20.3°F)
- **Boiling point**: 245°C (473°F)
- **Flash point**: Closed cup: 143°C (289.4°F)
  Open cup: 138°C (280.4°F)
- **Evaporation rate**: <0.01 (butyl acetate = 1)
- **Flammability (solid, gas)**: Not applicable.
- **Lower and upper explosive (flammable) limits**: Lower: 2%  
  Upper: 12.3%
- **Vapor pressure**: 0.00600049260676528 mmHg @ 25 °C
- **Vapor density**: 3.7 [Air = 1]
- **Relative density**: 1.12
- **Density**: 1.118 g/cm³ [25°C (77°F)]
- **Solubility**: Easily soluble in the following materials: cold water and hot water.
- **Solubility in water**: 1000 g/l
- **Partition coefficient: n-octanol/water**: -1.98
- **Auto-ignition temperature**: 229°C (444.2°F)
- **Decomposition temperature**: Not available.
- **Viscosity**: Dynamic (room temperature): 30 mPa·s (30 cP)
- **Aerosol product**: Not available.
- **Heat of combustion**: -22369142 J/kg
Section 10. Stability and reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Chemical stability: The product is stable.

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid: No specific data.

Incompatible materials: May react or be incompatible with oxidizing materials.

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

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2' -oxybisethanol</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>11890 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>12000 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2' -oxybisethanol</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>50 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 mg</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitization

Not available.

Mutagenicity

Conclusion/Summary: Not available.

Carcinogenicity

Conclusion/Summary: Not available.

Reproductive toxicity

Conclusion/Summary: Not available.

Teratogenicity

Conclusion/Summary: Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2' -oxybisethanol</td>
<td>Category 2</td>
<td>Oral</td>
<td>kidneys</td>
</tr>
</tbody>
</table>

Aspiration hazard

Not available.
Section 11. Toxicological information

Information on the likely routes of exposure

Potentia acute health effects

Eye contact: Causes eye irritation.
Inhalation: No known significant effects or critical hazards.
Skin contact: No known significant effects or critical hazards.
Ingestion: Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: Adverse symptoms may include the following:
- irritation
- watering
- redness

Inhalation: No specific data.
Skin contact: No specific data.
Ingestion: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long term exposure

Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects

General: May cause damage to organs through prolonged or repeated exposure if swallowed.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Oral (mg/kg)</th>
<th>Dermal (mg/kg)</th>
<th>Inhalation (gases) (ppm)</th>
<th>Inhalation (vapors) (mg/l)</th>
<th>Inhalation (dusts and mists) (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2’-oxybisethanol</td>
<td>500</td>
<td>11890</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision: 08/31/2020  
Date of previous issue: 02/11/2020  
Version: 1.1
**Section 12. Ecological information**

**Toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2′-oxybisethanol</td>
<td>Acute LC50 75200000 µg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

**Persistence and degradability**

Not available.

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2′-oxybisethanol</td>
<td>-1.98</td>
<td>100</td>
<td>low</td>
</tr>
</tbody>
</table>

**Mobility in soil**

- Soil/water partition coefficient (K<sub>oc</sub>): Not available.

**Other adverse effects**: No known significant effects or critical hazards.

**Section 13. Disposal considerations**

**Disposal methods**: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Section 14. Transport information**

**TDG / IMDG / IATA**: Not regulated.

**Special precautions for user**: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to IMO instruments**: Not available.

**Section 15. Regulatory information**

**Canadian lists**
- **Canadian NPRI**: This material is not listed.
- **CEPA Toxic substances**: This material is not listed.

**International regulations**
- **Chemical Weapon Convention List Schedules I, II & III Chemicals**: Not listed.
Section 15. Regulatory information

**Montreal Protocol**
Not listed.

**Stockholm Convention on Persistent Organic Pollutants**
Not listed.

**Rotterdam Convention on Prior Informed Consent (PIC)**
Not listed.

**UNEEE Aarhus Protocol on POPs and Heavy Metals**
Not listed.

**Inventory list**
- **Australia**: This material is listed or exempted.
- **Canada**: This material is listed or exempted.
- **China**: This material is listed or exempted.
- **Europe**: This material is listed or exempted.
- **Japan**:
  - **Japan inventory (ENCS)**: This material is listed or exempted.
  - **Japan inventory (ISHL)**: This material is listed or exempted.
- **New Zealand**: This material is listed or exempted.
- **Philippines**: This material is listed or exempted.
- **Republic of Korea**: This material is listed or exempted.
- **Taiwan**: This material is listed or exempted.
- **Thailand**: Not determined.
- **Turkey**: This material is listed or exempted.
- **United States**: This material is listed or exempted.
- **Viet Nam**: This material is listed or exempted.

Section 16. Other information

**History**

| Date of issue/Date of revision | 08/31/2020 |
| Date of previous issue          | 02/11/2020 |
| Version                         | 1.1        |

**Key to abbreviations**

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- HPR = Hazardous Products Regulations
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- N/A = Not available
- UN = United Nations

**Procedure used to derive the classification**
Section 16. Other information

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACUTE TOXICITY (oral) - Category 4</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>EYE IRRITATION - Category 2B</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (kidneys) (oral) - Category 2</td>
<td>Expert judgment</td>
</tr>
</tbody>
</table>

References : Not available.

[1] Indicates information that has changed from previously issued version.

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