Section 1: Chemical Product and Company Identification

Cat#: 07710
Part Name: GLUTARALDEHYDE 8% EM GRADE
Supplier: Polysciences, Inc.
400 Valley Road
Warrington, PA 18976 USA
MSDS Telephone #215-343-6484 Emergency only #215-378-4526

Identified uses: Laboratory use, manufacture of substances

Section 2: Hazards Identification

Hazard Overview
Causes skin and eye burns.
Harmful if inhaled or swallowed.
May cause allergic respiratory reaction.
May cause allergic skin reaction.
May cause skin damage.
Harmful if ingested.

Acute Toxicity Oral Cat 4, Acute Toxicity Inhalation Cat 4
Respiratory Sensitizer Category 1B
Serious Eye Damage Cat 1C, Skin Corrosion Cat 1C, Eye Irritation Cat 2B
Skin Sensitizer Category 1B

Signal word: Danger

Hazard and Precautionary Statements

H302 + H332 Harmful if swallowed or if inhaled
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H410 Very toxic to aquatic life with long lasting effects.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P280A Wear protective gloves
P285 In case of inadequate ventilation wear respiratory protection.
P301A IF SWALLOWED do not induce vomiting. Do not give anything to drink. Obtain medical attention without delay.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Section 3: Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Item#</th>
<th>Name</th>
<th>EINECS</th>
<th>CAS#</th>
<th>% in product</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Glutaraldehyde</td>
<td>203-856-5</td>
<td>0000111308</td>
<td>6 - 10</td>
</tr>
<tr>
<td>2</td>
<td>Water</td>
<td>231-791-2</td>
<td>0007732185</td>
<td>91 - 100</td>
</tr>
</tbody>
</table>

Section 4: First Aid Measures

Flush eyes with flowing water for at least 15 minutes.
If breathing is difficult, contact emergency personnel.
Remove contaminated clothing.
Remove to fresh air.
Wash skin with deluge of water for at least 15 minutes.

Section 5: Fire Fighting Measures

Flash point, deg F.: no data
Method: no data
UEL: no data
LEL: no data
Autoignition temperature, deg. F.: no data
Flammability Classification: no data
Flame Propagation Rate: no data
Hazardous Combustion Products: no data

Section 6: Accidental Release Measures

Any information listed below is to be considered in addition to internal guidelines for isolation of spill, containment of spill, removal of ignition sources from immediate area, and collection for disposal of spill by trained, properly protected clean up personnel.

Absorb liquids on absorbent material.
Contain spilled liquids.
Protect personnel from exposure.
Remove ignition sources.
Ventilate the area.

Section 7: Handling and Storage

Store at 4 deg. C.

Section 8: Exposure Controls/Personal Protection

OSHA (ACGIH) Exposure Limits

<table>
<thead>
<tr>
<th>CAS#: 0000111308</th>
<th>IDLH: --</th>
<th>OSHA</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>STEL</td>
<td>CEILING</td>
<td></td>
</tr>
<tr>
<td>ppm</td>
<td>mg/</td>
<td>ppm</td>
<td>mg/m3</td>
</tr>
<tr>
<td>Not classifi</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>0.05</td>
<td>0.2</td>
<td></td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>CAS#: 0007732185</th>
<th>IDLH: NE</th>
<th>OSHA</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>STEL</td>
<td>CEILING</td>
<td></td>
</tr>
<tr>
<td>ppm</td>
<td>mg/</td>
<td>ppm</td>
<td>mg/m3</td>
</tr>
<tr>
<td>NE</td>
<td>NE</td>
<td>NE</td>
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</tr>
<tr>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
</tr>
</tbody>
</table>

The use of eye protection in the form of safety glasses with side shields and the use of skin protection for hands in the form of gloves are considered minimum and non-discretionary in work places and laboratories. Any recommended personal protection equipment or environmental equipment is to be considered as additional to safety glasses and gloves.

Use chemical splash goggles and face shield.
Use latex or equivalent gloves.
Use process enclosures, local exhaust ventilation, or other engineering controls.
Chemical-resistant gloves should be worn whenever this material is handled. The glove material has to be impermeable and resistant to the product. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water. All glove recommendations presume that the risk of exposure is through splash and not intentional immersion of the hands into the product. Since glove permeation data does not exist for this material, no recommendation for the glove material can be given for the product. Permeation data must be obtained from the glove manufacturer to determine if the glove is suitable for the task.

Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula:</td>
<td>mixture</td>
</tr>
<tr>
<td>Formula Weight:</td>
<td>nap</td>
</tr>
<tr>
<td>boiling point:</td>
<td>213 °F</td>
</tr>
<tr>
<td>melting point:</td>
<td>-6 °F</td>
</tr>
<tr>
<td>solubility:</td>
<td>100 %</td>
</tr>
<tr>
<td>appearance:</td>
<td>clear colorless liquid acrid odor</td>
</tr>
<tr>
<td>vapor pressure:</td>
<td>0.20 mm Hg at 20°C</td>
</tr>
<tr>
<td>vapor density:</td>
<td>1.1</td>
</tr>
<tr>
<td>Specific gravity:</td>
<td>1.06</td>
</tr>
<tr>
<td>ph:</td>
<td>no data</td>
</tr>
</tbody>
</table>

Section 10: Stability and Reactivity

Chemical Stability: stable
Conditions to Avoid: high heat and evaporation of water
Incompatibility with other materials: strong alkalais and acids
Hazardous Decomposition Products: no data
Hazardous Polymerization: will not occur

Section 11: Toxicological Information

Acute Data: LD 50 Oral (Rat): 2.30 ml/kg
LD 50 Percutaneous Rabbit: 2.54 ml/kg; 24 h occluded
Subchronic data: Intradermal injection of 0.1% glutaradehyde solution and topical administration of a 5% solution in guinea pig maximization test showed evidence of delayed contact sensitivity in 68% of test animals

Section 12: Ecological Information

no data

Section 13: Disposal Considerations

The following chart lists the status of the chemical and its components in reference to 40 CFR Part 261.33. If the product is listed by code number the substance may be subject to special federal and state disposal regulations. If no codes are listed the material must be disposed in compliance with all Federal, State and Local Regulations.

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Waste Code</th>
<th>Regulated Name</th>
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</thead>
<tbody>
<tr>
<td>0000111308</td>
<td>not listed</td>
<td>not listed</td>
</tr>
<tr>
<td>0007732185</td>
<td>not listed</td>
<td>not listed</td>
</tr>
</tbody>
</table>

Section 14: Transportation Data

Proper Shipping Name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Chemical Name: GLUTARALDEHYDE
UN: UN3265
Class: 8
PG: III

Section 15: Regulatory Information

All components of this product are on the TSCA public inventory.

All components of this product are on the TSCA public inventory.

Prop 65 - Column A identifies those items which are known to the State of California to cause cancer. Column B identified items which are known to the State of California to cause reproductive toxicity.

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000111308</td>
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<td>no</td>
</tr>
<tr>
<td>0007732185</td>
<td>no</td>
<td>no</td>
</tr>
</tbody>
</table>

State Regulatory Information: If a CAS# is listed below this material is subject to the listed state right-to-know requirements.

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SARA Toxic Release Chemicals(as defined in Section 313 of SARA Title III)
This list identifies the toxic chemicals, including their de minimis concentrations for which reporting is required under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA). The list is also referred to as the Toxics Release Inventory (TRI) List.
Section 16: Other Information

POLYSCIENCES, INC. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. POLYSCIENCES, INC. makes no representations or warranties, either expressed or implied of merchantability, fitness for particular purposes with respect to the information set forth herein or to which the information refers. Accordingly, POLYSCIENCES, INC. will not be responsible for damages resulting from the use of or reliance upon this information.

END OF MSDS