Section 1: Chemical Product and Company Identification

Cat#: 22872B
Part Name: 16% FORMALDEHYDE
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 eye burns. 
Causes skin, eye and respiratory tract irritation. 
Harmful if inhaled, absorbed through skin or swallowed. 
Suspect cancer hazard.

GHS Classification
Carcinogen Category 2
Serious Eye Damage Category 1C
Skin Irritant Cat 2, Acute Inhalation Cat 4, Eye Irritation Cat 2B
Skin Irritant Cat 2, Acute Oral Toxicity Cat 4, Acute Inhalation Cat 4,

Danger

Hazard and Precautionary Statements

H302 + H312 Harmful if swallowed or, in contact with skin or if inhaled
H318 Causes serious eye damage.
H351 Suspected of causing cancer <state route of exposure if it is conclusively proven that no other routs of exposure cause the hazard>.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P280A Wear protective gloves
P285 In case of inadequate ventilation wear respiratory protection.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 IF IN EYES:
P305B IF IN EYES, Separate eyelids with finger tips.
P315 Get immediate medical advice/attention.
P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P361 Remove/Take off immediately all contaminated clothing.
NFPA Rating

Hazard Ratings:
These ratings are private assessments of the properties of the material using the ANSI/NFPA 704 Standard. Additional information can be found by consulting in the NFPA published ratings lists (List 325 and List 49).

If no data is listed the information is not available.

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>Formaldehyde</td>
<td>200-001-8</td>
<td>0000050000</td>
<td>11 - 20</td>
</tr>
<tr>
<td>2</td>
<td>Water</td>
<td>231-791-2</td>
<td>0007732185</td>
<td>81 - 90</td>
</tr>
</tbody>
</table>

Section 4: First Aid Measures

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

Section 5: Fire Fighting Measures

Flash point, deg F.: 144
Method: cCC
UEL: 7
LEL: 73
Autoignition temperature, deg. F.: 572F
Flammability Classification: IIIA
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 room temp

Section 8: Exposure Controls/Personal Protection

OSHA (ACGIH) Exposure Limits

<table>
<thead>
<tr>
<th>CAS#: 0000050000</th>
<th>IDLH: 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSHA</td>
<td>Not classifi</td>
</tr>
<tr>
<td>ACGIH</td>
<td>--</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS#: 0007732185</th>
<th>IDLH: NE</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSHA</td>
<td>NE</td>
</tr>
<tr>
<td>ACGIH</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 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>Formula</th>
<th>CH3HCO</th>
<th>vapor pressure:</th>
<th>1.3 @ 20c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula Weight</td>
<td>nav</td>
<td>vapor density:</td>
<td>1.04</td>
</tr>
<tr>
<td>boiling point</td>
<td>&gt;200 F</td>
<td>Specific gravity:</td>
<td>1.02</td>
</tr>
<tr>
<td>melting point</td>
<td>5 F</td>
<td>ph:</td>
<td>2.8 for a 31% SOLUTION</td>
</tr>
<tr>
<td>solubility</td>
<td>completely</td>
<td>appearance: clear colorless liquid formaldehyde</td>
<td></td>
</tr>
</tbody>
</table>

Section 10: Stability and Reactivity

Chemical Stability: stable

Conditions to Avoid: heat, flames, ignition sources

Incompatibility with other materials: oxidizing agents and alkalis, nitrogen dioxide, perchloric acid, nitromethane, hydrochloric acid.

Hazardous Decomposition Products: no data

Hazardous Polymerization: will not occur

Section 11: Toxicological Information

Acute Data: Formaldehyde:
- LD 50 Oral Rat: 100 mg/kg
- LD 50 skin rabbit: 270 uL/kg
- LC 50 inhalation rat: 203 mg/m3

Irritation data: eye rabbit, 750 ug: severe

Investigated as a tumorigen, mutagen and reproductive effector

Subchronic data: no data

Section 12: Ecological Information

Formaldehyde:
- LC 50/96-hour for fish are between 10 and 100 mg/l.

Formaldehyde is expected to leach into groundwater, readily biodegrade in water, not expected to evaporate, not expected to significantly bioaccumulate, will readily degrade by reaction w

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>
</tr>
</thead>
<tbody>
<tr>
<td>0000050000</td>
<td>U122</td>
<td>Formaldehyde</td>
</tr>
<tr>
<td>0007732185</td>
<td>not listed</td>
<td>not listed</td>
</tr>
</tbody>
</table>

Section 14: Transportation Data

Proper Shipping Name: NOT REGULATED

Chemical Name

UN

Class

PG

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>0000050000</td>
<td>Yes</td>
<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.

CAS#
0000050000 not listed
0007732185 not listed

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.

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Regulated name</th>
<th>de minimis conc. %</th>
<th>Rep. Thres.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000050000</td>
<td>Formaldehyde</td>
<td>0.1</td>
<td>not listed</td>
</tr>
<tr>
<td>0007732185</td>
<td>not listed</td>
<td>not listed</td>
<td>not listed</td>
</tr>
</tbody>
</table>

SARA Extremely Hazardous Substances and TPQs
This list includes hazardous chemicals as defined in 29 CFR 1910.1200(c); and extremely hazardous substances regulated under Section 302 of SARA Title III with their TPQs (in pounds), as listed in 40 CFR 355, Appendices A and B.

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Regulated name</th>
<th>TPQ (pounds)</th>
<th>EHS-RQ (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000050000</td>
<td>Formaldehyde</td>
<td>500</td>
<td>100</td>
</tr>
<tr>
<td>0007732185</td>
<td>not listed</td>
<td>not listed</td>
<td>not listed</td>
</tr>
</tbody>
</table>

CERCLA
The hazardous substances, and their reportable quantities (RQs) are listed in the federal regulations at 40 CFR Part 302, Table 302.4. Release of a CERCLA hazardous substance in an amount equal to or greater than its RQ, in any 24-hour period, must be reported to the National Response Center at (800) 424-8802.

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Regulated name</th>
<th>RQ (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000050000</td>
<td>Formaldehyde</td>
<td>100</td>
</tr>
<tr>
<td>0007732185</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Section 16: Other Information
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END OF MSDS