Material Safety Data Sheet

Section 1: Chemical Product and Company Identification
Cat#: 10835
Part Name: Polyvinyl Formal Resin Powder (aka Formvar 15/95E and Vinylec E)
Supplier: Ladd Research
83 Holly Court
Williston, VT 05495 USA
Emergency Telephone: 1-800-424-9300 (Chemetrec 24/7/365); International: +1-703-741-5970 (Chemetrec 24/7/365)

Identified uses: Laboratory use, manufacture of substances

Section 2: Hazards Identification
Hazard Overview
May cause skin, eye and respiratory tract irritation.
GHS Classification
Skin Irritant Cat 2, Acute Inhalation Cat 4, Eye Irritation Cat 2B

Signal word: Warning

Hazard and Precautionary Statements
H315 Causes skin irritation.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P280A Wear protective gloves
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.
P351 Rinse cautiously with water for several minutes.

NFPA Rating
Hazard Ratings:
These ratings are Polysciences' Inc. own 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.
Health Flammability Reactivity
1 1 0

Section 3: Composition/ Information on Ingredients
Note: Items listed with a CASRN... number have no CAS# available.

<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>Poly(vinyl formal)</td>
<td>Unknown</td>
<td>0009003332</td>
<td>95-100</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.
If swallowed, wash out mouth with water if person is conscious.
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
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.

Protect personnel from exposure.
Sweep up solids.
Use appropriate personal protective equipment.

Section 7: Handling and Storage

Store at room temp

Section 8: Exposure Controls/ Personal Protection

OSHA (ACGIH) Exposure Limits

<table>
<thead>
<tr>
<th>CAS#</th>
<th>TWA ppm</th>
<th>TWA mg/</th>
<th>STEL ppm</th>
<th>STEL mg/m3</th>
<th>CEILING ppm</th>
<th>CEILING mg/m3</th>
</tr>
</thead>
<tbody>
<tr>
<td>0009003332</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>OSHA</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>ACGIH</td>
<td>NE</td>
<td>NE</td>
<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.

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

Formula: (C5H8O2)x
Formula Weight: nav
Boiling point: no data
Melting point: no data
Solubility: no data
Appearance: white to light yellow powder

Vapor pressure: no data
Vapor density: no data
Specific gravity: 1.23
Ph: no data

Section 10: Stability and Reactivity

Chemical Stability: stable
Conditions to Avoid: no data
Incompatibility with other materials: strong oxidizers, strong acids
Hazardous Decomposition Products: oxides of carbon
Hazardous Polymerization: will not occur

Section 11: Toxicological Information

Acute Data: no data
Subchronic data: no data

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>
</tr>
</thead>
<tbody>
<tr>
<td>0009003332</td>
<td>not listed</td>
<td>not listed</td>
</tr>
</tbody>
</table>

Section 14: Transportation Data
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 identifies 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>0009003332</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.

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Regulated name</th>
<th>de minimis conc. %</th>
<th>Rep. Thres.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0009003332</td>
<td>not listed</td>
<td>not listed</td>
<td>not listed</td>
</tr>
</tbody>
</table>

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>0009003332</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>0009003332</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>0009003332</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Section 16: Other Information

The information presented is believed to be correct and is the most accurate information available to us at this time. However, Ladd Research makes no warranty, express or implied, and assumes no liability for this information and the product described herein.