Section 1: Chemical Product and Company Identification
Cat#: 24738
Part Name: ERL 4221
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 irritation.
May cause allergic skin reaction.

GHS Classification
Eye Irritation Category 2B
Skin Sensitizer Category 1B

Signal word: Danger

Hazard and Precautionary Statements
H317 May cause an allergic skin reaction.
H319 Causes serious eye 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.
P301D IF SWALLOWED, induce vomiting as directed by medical personnel.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305B IF IN EYES, Separate eyelids with finger tips.
P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P351 Rinse cautiously with water for several minutes.
P361 Remove/Take off immediately all contaminated clothing.

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.

Item# Name EINECS CAS# % in product
1 7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 7-oxabicyclo[4.1.0]hept-3-ylmethyl ester 219-207-4 0002386870 81 - 90
Section 4: First Aid Measures
Flush eyes with flowing water for at least 15 minutes.
If breathing is difficult, contact emergency personnel.
If swallowed, induce vomiting as directed by medical personnel.
If swallowed, wash out mouth with water if person is conscious.
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.: 245
Method: PMCC
UEL: no data  LEL: no data
Autoignition temperature, deg. F.: no data
Flammability Classification: no data  Flame Propagation Rate: no data
Hazardous Combustion Products: oxides of carbon

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.
Prevent contact with combustible materials.
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#</th>
<th>IDLH</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>0002386870</td>
<td>NE</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

<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>mixture</td>
</tr>
<tr>
<td>boiling point:</td>
<td>170°C</td>
</tr>
<tr>
<td>melting point:</td>
<td>-26°C</td>
</tr>
<tr>
<td>solubility:</td>
<td>&lt;0.02%</td>
</tr>
<tr>
<td>vapor pressure:</td>
<td>&lt;0.01 mm Hg</td>
</tr>
<tr>
<td>vapor density:</td>
<td>~8.7</td>
</tr>
<tr>
<td>Specific gravity:</td>
<td>1.16</td>
</tr>
<tr>
<td>ph:</td>
<td>no data</td>
</tr>
<tr>
<td>appearance:</td>
<td>transparent off-white liquid</td>
</tr>
</tbody>
</table>

Section 10: Stability and Reactivity
**Section 10: Stability and Reactivity**

Chemical Stability: stable

Conditions to Avoid: temperatures above 170°C

Incompatibility with other materials: amines, acids, bases

Hazardous Decomposition Products: oxides of carbon

Hazardous Polymerization: may occur with elevated temperatures

**Section 11: Toxicological Information**

Acute Data: LD 50, oral, rat: 4.49 ml/kg

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>0002386870</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>0002386870</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></th>
</tr>
</thead>
<tbody>
<tr>
<td>0002386870</td>
<td></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>0002386870</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>0002386870</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>0002386870</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>