**Section 1: Chemical Product and Company Identification**

Cat#: 19292  
Part Name: 5-CYANO-2,3-DI-4-TOLYL-TETRAZOLIUMCHLORIDE (D/S #486)  
Supplier: Polysciences, Inc.  
400 Valley Road  
Warrington, PA 18976 USA  
MSDS Telephone #215-343-6484 Emergency only #215-378-4526

**Section 2: Hazards Identification**

**Hazard Overview**
May cause skin, eye and respiratory tract irritation.  
Toxicological properties are not known.

**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  
**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.  
**P304A** IF INHALED: Begin rescue breathing if necessary and contact medical personnel.  
**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**

**Health** Flammability Reactivity  
2 1 0

**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>5-Cyano-2,3-(di-4-tolyl)-tetrazolium chloride</td>
<td>Unknown</td>
<td>0102568478</td>
<td>95-100</td>
</tr>
</tbody>
</table>

**Section 4: First Aid Measures**

Begin rescue breathing if necessary and contact medical personnel.  
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.: 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.

Prevent contact with combustible materials.
Protect personnel from exposure.
Sweep up solids.

Section 7: Handling and Storage
Keep away from light.

Section 8: Exposure Controls/ Personal Protection

OSHA (ACGIH) Exposure Limits

<table>
<thead>
<tr>
<th></th>
<th>TWA</th>
<th>STEL</th>
<th>CEILING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>mg/</td>
<td>ppm</td>
</tr>
<tr>
<td>CAS#: 0102568478</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>OSHA</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>ACGIH</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></th>
<th></th>
<th>vapor pressure:</th>
<th>no data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula:</td>
<td>C16H14ClN5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formula Weight:</td>
<td>311.8</td>
<td>vapor density:</td>
<td>no data</td>
</tr>
<tr>
<td>boiling point:</td>
<td>no data</td>
<td>Specific gravity:</td>
<td>0</td>
</tr>
<tr>
<td>melting point:</td>
<td>decomposes</td>
<td>ph:</td>
<td>no data</td>
</tr>
<tr>
<td>solubility:</td>
<td>soluble</td>
<td>appearance:</td>
<td>off-white powder</td>
</tr>
</tbody>
</table>

Section 10: Stability and Reactivity

Chemical Stability  stable
Conditions to Avoid:  high temperature
Incompatibility with other materials:  no data
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>0102568478</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

This product contains a component which does not appear on the TSCA public inventory. It is manufactured or imported only in small quantities and solely for research and development.

All usage of this product must comply with 40 CFR 720.36.

This chemical substance must be used by, or directly under the supervision of, a technically qualified individual.

You must notify all persons who are engaged in experimentation, research, or analysis on the chemical substance, including the manufacture, possessing, use, transport, storage, and disposal of the substance of any known risk to health.

This product contains a component which does not appear on the TSCA public inventory. It is manufactured or imported only in small quantities and solely for research and development.

All usage of this product must comply with 40 CFR 720.36.

This chemical substance must be used by, or directly under the supervision of, a technically qualified individual.

You must notify all persons who are engaged in experimentation, research, or analysis on the chemical substance, including the manufacture, possessing, use, transport, storage, and disposal of the substance of any known risk to health.

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>0102568478</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>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>0102568478</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>0102568478</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>0102568478</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>0102568478</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>
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END OF MSDS