Material Safety Data Sheet

Section 1 - Product and Company Information

Product Name: TRI® Reagent
Product Number: T9424
Brand: Sigma Chemical
Company: Sigma-Aldrich
Street Address: 3003 Spruce Street
City, State, Zip, Country: SAINT LOUIS, MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5652
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 313</th>
<th>EC No</th>
<th>Annex I Index Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRI REAGENT</td>
<td></td>
<td>None</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

Emergency Overview
Toxic.
Causes burns. Contact with acids liberates toxic gas.
Vesicant. Residually absorbed through skin. Combustible. Target organ(s): Central nervous system, Kidneys.

HMSI Rating
Health: 3*
Flammability: 2
Reactivity: 1
NFPA Rating
Health: 3
Flammability: 2
Reactivity: 1
*additional chronic hazards present.
For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure
If swallowed, wash out mouth with water provided person is conscious. Call a physician. Do not induce vomiting.

Inhalation Exposure
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Section 5 - Fire Fighting Measures

Flash Point: 174 °F
Autoignition Temp: 715 °C
Extinguishing Media
Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.
Extinguishing Media
Incombustible with water雾.

Firefighting
Protective Equipment
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s)
Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed In Case of Leak or Spill
Evacuate area.

Procedure(s) of Personal Precaution(s)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up
Cover with dry sand or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling
User Exposure
Do not breathe vapor. Do not get in eyes, on skin, or clothing. Avoid prolonged or repeated exposure.

Storage
Suitable
Keep tightly closed. Keep away from heat, sparks, and open flame. Store in a cool dry place. Store at 2-8°C

Section 8 - Exposure Controls / PPE

Engineering Controls
Safely shower and eye bath. Use only in a chemical fume hood.

Personal Protective Equipment
Respiratory
Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate, use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand
Compatible chemical-resistant gloves.

Eye
Chemical safety goggles.

Other
Face shield (8-inch minimum).

Sigma Chemical - T9424
Page 2
### Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>N/A</td>
</tr>
<tr>
<td>pH</td>
<td>N/A</td>
</tr>
<tr>
<td>BP/IP Range</td>
<td>N/A</td>
</tr>
<tr>
<td>MP/IP Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>9.36 mmHg</td>
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<tr>
<td>Vapor Density</td>
<td>N/A</td>
</tr>
<tr>
<td>Saturated Vapor Conc.</td>
<td>N/A</td>
</tr>
<tr>
<td>SG/Density</td>
<td>N/A</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>N/A</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>N/A</td>
</tr>
<tr>
<td>Volatiles%</td>
<td>N/A</td>
</tr>
<tr>
<td>VOC Content</td>
<td>N/A</td>
</tr>
<tr>
<td>Water Content</td>
<td>N/A</td>
</tr>
<tr>
<td>Solvent Content</td>
<td>N/A</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>N/A</td>
</tr>
<tr>
<td>Viscosity</td>
<td>N/A</td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>N/A</td>
</tr>
<tr>
<td>Decomposition Temp.</td>
<td>N/A</td>
</tr>
<tr>
<td>Flash Point °F</td>
<td>172 °C</td>
</tr>
<tr>
<td>Flash Point °C</td>
<td>79 °C</td>
</tr>
<tr>
<td>Explosion Limits</td>
<td>N/A</td>
</tr>
<tr>
<td>Flammability</td>
<td>N/A</td>
</tr>
<tr>
<td>Autoignition Temp</td>
<td>715 °C</td>
</tr>
<tr>
<td>Solubility</td>
<td>Method: closed cup</td>
</tr>
<tr>
<td>Solubility in Water:</td>
<td>Soluble</td>
</tr>
<tr>
<td>Other Solvents:</td>
<td>GLUCERIN, DIMETHYL SULFOXIDE.</td>
</tr>
</tbody>
</table>

N/A = not available

### Section 10 - Stability and Reactivity

- **Stability**: Stable
- **Conditions of Instability**: May discolor on exposure to light.
- **Conditions to Avoid**: Light
- **Materials to Avoid**: Strong oxidizing agents, Strong bases, Strong acids.

**Hazardous Decomposition Products**

- Carbon monoxide, Carbon dioxide, Hydrogen cyanide, Sulfur oxides.
Section 15 - Regulatory Information

EU Additional Classification
Symbol of Danger: T
Indication of Danger
Toxic.

Risk Statements
R: 23/24/25 48/20/21/22 32 34 48 50/53
Toxic. Inhalation, in contact with skin and if swallowed. Harmful. Danger of serious damage to health by prolonged exposure through inhalation in contact with skin, and if swallowed. Contact with acids liberates very toxic gas. Causes burns. Possible risk of irreversible effects. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Statements
S: 26 36/37/39 45 61
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/safety data sheets.

US Classification and Label Text
Indication of Danger
Toxic.

Risk Statements
Causes burns. Contact with acids liberates toxic gas.

Safety Statements
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Take off immediately all contaminated clothing. Wear suitable protective clothing, gloves, and eye/face protection.

US Statements

United States Regulatory Information
SARA Listed: Yes
Notes: This product is or contains a component that is subject to SARA313 reporting requirements.

Canada Regulatory Information
WHMIS Classification
This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No
NDSL: No

Section 16 - Other Information

Disclaimer
For R&D use only. Not for drug, household or other uses.

Warranty
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.