MATERIAL SAFETY DATA SHEET

SECTION 1: MATERIAL INFORMATION

Common Name: KOVAC'S INDOLE REAGENT
Synonyms: Kovac's Reagent
Catalog Number: R6520, R6521
CAS #: N/AV
WARNING: POISON, CORROSIVE, FLAMMABLE

SECTION 2: HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Component</th>
<th>CAS #</th>
<th>Family</th>
<th>Molecular Formula</th>
<th>Approximate Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amyl Alcohol</td>
<td>71-41-0</td>
<td>Alcohol</td>
<td>C₄H₉OH</td>
<td>75%</td>
</tr>
<tr>
<td>Dimethylaminobenzaldehyde</td>
<td>60-11-7</td>
<td>Aldehyde</td>
<td>C₆H₄NO</td>
<td>5gm</td>
</tr>
<tr>
<td>Hydrochloric Acid, 12N</td>
<td>7647-01-0</td>
<td>Inorganic Acid</td>
<td>HCl</td>
<td>25%</td>
</tr>
</tbody>
</table>

SECTION 3: PHYSICAL DATA

Appearance: Golden yellow to greenish yellow liquid
pH: N/AV
Solubility in Water: Appreciable
Vapor Density: N/AV
Flash Point: 31°C (88°F) cc
Evaporation Rate: N/AV
Odor: Sharp pungent odor

SECTION 4: FIRE AND EXPLOSION HAZARD

Flammable: Yes: Flammable liquid

Flammable Limits:
Upper: N/AV
Lower: N/Av

Extinguish Media:
Use alcohol foam for large fires. Use CO₂ or dry chemical for small fires.

Special Hazards:
Wear self-contained, positive-pressure breathing apparatus and full protective clothing.

Unusual Fire and Explosion Hazards:
May produce hydrogen, when in contact with metal, which may form explosive mixtures with air.

SECTION 5: REACTIVITY DATA

Stable: X Unstable:
Conditions to Avoid:
Heat, sparks, open flame

Materials to Avoid:
( ) Water -
(X) Acids -
(X) Bases -
( ) Corrosives -
(X) Oxidizers -
(X) Other: Alkalis, amines, contact with metal

Hazardous Decomposition Products:
May emit toxic fumes of carbon monoxide, carbon dioxide, nitrogen oxide.
SECTION 6: HEALTH HAZARD DATA

To the best of our knowledge, the chemical, physical, and toxicological properties of this mixture have not been thoroughly investigated. Presented below are specific data on each of the subcomponent ingredients:

<table>
<thead>
<tr>
<th>Hazardous Component</th>
<th>%</th>
<th>Limit Value</th>
<th>TXDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amyl Alcohol</td>
<td>75%</td>
<td>N/AV</td>
<td>ORL-RAT LD50: 2200 mg/kg</td>
</tr>
<tr>
<td>Dimethylaminobenzaldehyde</td>
<td>5gm</td>
<td>N/AV</td>
<td>ORL-RAT LD50: 500 mg/kg</td>
</tr>
<tr>
<td>Hydrochloric Acid, 12N</td>
<td>25%</td>
<td>5 ppm</td>
<td>IHL-HMN LDLO: 1000 ppm/1 M</td>
</tr>
</tbody>
</table>

Effects of Overexposure (Acute and Chronic):
Causes severe irritation of respiratory passages, dermatitis, severe and rapid eye damage, nausea, vomiting, narcosis, chest pain, choking cough.
May cause severe burns, pulmonary edema, circulatory collapse and death.

Carcinogenicity: These products do not contain any carcinogens at 0.1% or greater.

First Aid Procedure:
Skin Contact: Flush with copious amounts of water for 15 minutes.
Eye Contact: Flush with copious amounts of water for 15 minutes.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion: Do not induce vomiting, give milk or water if conscious.

In all cases of overexposure seek medical attention.
Wash contaminated clothing before reuse.

SECTION 7: SPILL OR LEAK PROCEDURES AND DISPOSAL

Steps to be taken if Material is Released or Spilled:
Ventilate area. Pick up solution by absorbing with sodium bicarbonate.
Wash spill area with soap and water.

Waste Disposal Method:
Observe all local, provincial, state, and federal regulations.

SECTION 8: SPECIAL PROTECTION INFORMATION

Provide adequate general mechanical and local exhaust ventilation.
Avoid prolonged or repeated inhalation of vapor.
Protect eyes, skin, and clothing with safety goggles and gloves.
Wash thoroughly after handling.

SECTION 9: SPECIAL HANDLING AND STORAGE PRECAUTIONS

Store in cool, well-ventilated area away from incompatible materials. Do not store in copper or its alloys. Keep away from heat, sparks, flame.
Protect from light.

SECTION 10: MSDS PREPARATION AND INFORMATION

Date Issued: 5/91
Current Revision: 01/2011
Revised By: Charissa H. Bolind

Authorized Signature: 

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:
The information in this document is believed to be correct as of the date issued or revised. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.

This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability of the product for his particular purpose and on the condition that he assume the risk of his use thereof.