Material Safety Data Sheet

Section 1: Chemical Product and Company Identification

<table>
<thead>
<tr>
<th>Catalog Number:</th>
<th>2660</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Identity:</td>
<td>DRABKIN'S REAGENT</td>
</tr>
<tr>
<td>Manufacturer's Name:</td>
<td>RICCA CHEMICAL COMPANY LLC</td>
</tr>
<tr>
<td>Emergency Contact(24 hr) -- CHEMTREC®</td>
<td>Domestic: 800-424-9300 International: 703-527-3887</td>
</tr>
<tr>
<td>CAGE Code:</td>
<td>4TCW6, 0V553, 4XZQ2</td>
</tr>
<tr>
<td>Address:</td>
<td>448 West Fork Dr Arlington, TX 76012</td>
</tr>
<tr>
<td>Date Prepared:</td>
<td>10/27/00</td>
</tr>
<tr>
<td>Revision:</td>
<td>1</td>
</tr>
<tr>
<td>Last Revised:</td>
<td>09/25/2001</td>
</tr>
<tr>
<td>Date Printed:</td>
<td>09/28/2012 1:10:02 pm</td>
</tr>
</tbody>
</table>

Section 2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Registry #</th>
<th>Concentration</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Ferricyanide</td>
<td>13746-66-2</td>
<td>&lt; 0.1</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>Sodium Bicarbonate</td>
<td>144-55-8</td>
<td>0.09 - 0.11</td>
<td>Not Available</td>
<td>Not Available</td>
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<tr>
<td>Potassium Cyanide</td>
<td>151-50-8</td>
<td>&lt; 0.01</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>Water, Deionized</td>
<td>7732-18-5</td>
<td>balance</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

Section 3: Hazard Identification

Emergency Overview: CAUTION! Contains Cyanide. Do not mix with acid. Avoid ingestion. If ingested, dilute with water or milk and induce vomiting. Call a physician. Wash areas of contact with plenty of water. For eyes, get medical attention.

Target Organs: eyes, skin, central nervous system, liver, kidneys, cardiovascular system.

Eye Contact: May cause irritation, redness, pain, and tearing.

Inhalation: May cause irritation.

Skin Contact: Will pass through unbroken skin and enter the bloodstream. Large exposures can be fatal.

Ingestion: May cause nausea, vomiting, diarrhea and cramps.

Chronic Effects/Carcinogenicity: None
Section 4: First Aid Measures - In all cases, seek qualified evaluation.

Eye Contact: Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops.

Inhalation: Remove to fresh air. Give artificial respiration if necessary (Not by mouth). Keep fresh 0.3 mL Amyl Nitrite ampules, with instructions, on hand. Break Amyl Nitrite ampule in cloth and hold tightly under nose for 15 seconds, repeat 2 to 6 times at 15 second intervals.

Skin Contact: Wash areas of contact with soap and water for at least 15 minutes. Call a physician if irritation develops.

Ingestion: Dilute immediately with water or milk. Break Amyl Nitrite ampule in cloth and hold tightly under nose for 15 seconds, repeat 2 to 6 times at 15 second intervals. Induce vomiting. Call a physician.

Section 5: Fire Fighting Measures

Flash Point: Not Available.

Method Used: Not Available.

LFL: Not Available.

Extinguishing Media: Use any means suitable for extinguishing surrounding fire.

Fire & Explosion Hazards: Not considered to be a fire or explosion hazard.

Fire Fighting Instructions: Use normal procedures/instructions.

Fire Fighting Equipment: Use protective clothing and breathing equipment appropriate for the surrounding fire.

Section 6: Accidental Release Measures

Absorb with suitable material and dispose of in accordance with local regulations.

Section 7: Handling and Storage

As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. Store at room temperature. Contact with acid liberates Cyanide fumes.

Safety Storage Code: General

Section 8: Exposure Control/Personal Protection

Engineering Controls: No specific controls are needed. Normal room ventilation is adequate.

Respiratory Protection: Normal room ventilation is adequate.

Skin Protection: Chemical resistant gloves.

Eye Protection: Safety glasses or goggles.

Section 9: Physical and Chemical Properties

Appearance: Clear, pale yellow-green liquid

pH: Alkaline

Odor: Odorless

Boiling Point(°C): Approximately 100

Solubility in Water: Infinite

Melting Point(°C): Approximately 0

Specific Gravity: Approximately 1

Vapor Pressure: Not Applicable.

Section 10: Stability and Reactivity

Chemical Stability: Stable under normal conditions of use and storage.

Incompatibility: Strong oxidizers, acids, acid salts, Peroxides. Contact with acids generates toxic Cyanide gas.
Hazardous Decomposition Products: Can emit deadly Hydrogen Cyanide and Nitric Oxide vapors when heated to decomposition.
Hazardous Polymerization: Will not occur.

Section 11. Toxicological Information
LD50, Oral, Rat: 5 mg/kg (Potassium Cyanide), 4220 mg/kg (Sodium Bicarbonate), details of toxic effects not reported other than lethal dose value. LD50, Oral, Mouse: (Potassium Ferricyanide) 2970 mg/kg, details of toxic effects not reported other than lethal dose value.

Section 12. Ecological Information
Ecotoxicological Information: Cyanides have high acute and chronic toxicity to aquatic life, birds and land animals.
Chemical Fate Information: Potassium Cyanide is non-persistent in water with a half-life of less than 2 days.

Section 13. Disposal Considerations
In the fume hood, add the Cyanide solution to a solution of 1% Sodium Hydroxide (about 50 mL/g of Cyanide). Household bleach (about 70 mL/g of Cyanide) is slowly added to the basic Cyanide solution with stirring. When the addition of the bleach is complete, the solution can be tested for the presence of Cyanide using the Prussian Blue test: to 1 mL of the solution to be tested add 2 drops of freshly prepared 5% aqueous Ferrous Sulfate solution. Boil this mixture for at least 60 seconds, cool to room temperature, and then add 2 drops of 1% Ferric Chloride solution. The resulting mixture is made acid to litmus with 6 Molar Hydrochloric Acid (prepared with equal amounts of concentrated Hydrochloric Acid and water). If Cyanide is present, a deep blue precipitate will form. (Concentrations of greater than 1 ppm Cyanide can be detected.) If the test is positive, more bleach is added to the Cyanide solution, and the test is repeated. Continue until no Prussian Blue precipitate is formed. Wash the solution down the drain with excess water. Always dispose of in accordance with local, state and federal regulations.

Section 14. Transport Information
Part Numbers:
This product is not regulated.

Section 15. Regulatory Information (Not meant to be all inclusive - selected regulation represented)
OSHA Status: The above items either do not contain any specifically hazardous material or the potentially hazardous material is present in such low concentration that the items do not present any immediate threat to health and safety. These items do not meet the OSHA Hazard Communication Standard (29 CFR 1910.1200) definition of a hazardous material.
TSCA Status: All components of this solution are listed on the TSCA Inventory or are mixtures (hydrates) of items listed on the TSCA Inventory.
Sara Title III:
Section 302 Extremely Hazardous Substances: Not Applicable.
Section 311/312 Hazardous Catagories: Acute, Chronic: Yes Fire, Pressure, Reactivity: No
Section 313 Toxic Chemicals: Not Applicable.
California: None Reported.
Pennsylvania: Potassium Cyanide is listed as an Environmental Hazard on the state's Hazardous Substances List. Potassium Cyanide is listed as an Environmental Hazard on the state's Hazardous Substances List.
RCRA Status: P098,P098
CERCLA Reportable Quantity: Potassium Cyanide - 10 pounds. Potassium Cyanide - 10 pounds.

WHMIS: Not Applicable.
DRABKIN'S REAGENT

NFPA Ratings:

Health: 1  Flammability: 0  Reactivity: 0  Special Notice Key: None

HMIS Ratings:

Health: 1  Flammability: 0  Reactivity: 0  Protective Equipment:B (Protective Eyewear, Gloves)

Rev 1, 10-09-2001: Reformatted to electronic data format.

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and RICCA CHEMICAL COMPANY assumes no legal responsibility or liability whatsoever resulting from its use.