COULTER DIAGNOSTICS DIVISION
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ENVIRONMENTAL EMERGENCY (National Response Center) #(800) 424-8802

MSDS Part Number : 7585258-B
Effective : 1/27/92
Issued : 1/27/92

SECTION I - PRODUCT IDENTIFICATION

Product Name : ZAP-OGLOBIN® II Lytic Reagent
CAS Number : None
NIOSH/RTECS Number: None
Common Synonyms : Lytic Reagent

Coulter Safety Information

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[0]</td>
<td>Flammability</td>
<td>0 = none</td>
</tr>
<tr>
<td>[2]</td>
<td>Reactivity</td>
<td>1 = slight</td>
</tr>
<tr>
<td>[2]</td>
<td>Contact</td>
<td>2 = caution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 = severe</td>
</tr>
</tbody>
</table>

Laboratory Protective Equipment for Normal Use : Standard laboratory practice; e.g., lab coats and safety glasses.

Precautionary Label Statements : Poisonous if ingested. Eye irritant. Avoid contact with skin and eyes. Do not refrigerate; precipitate may form at refrigerated temperatures.
SECTION II - HAZARDOUS COMPONENTS / CHEMICAL NAME

<table>
<thead>
<tr>
<th>Component</th>
<th>%</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Cyanide</td>
<td>0.33</td>
<td>151-50-8</td>
</tr>
<tr>
<td>Bretol (Erythrocide)</td>
<td>5.52</td>
<td>124-03-8</td>
</tr>
</tbody>
</table>

SECTION III - PHYSICAL DATA

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>100°C</td>
</tr>
<tr>
<td>Melting Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>2.0</td>
</tr>
<tr>
<td>(H₂O = 1)</td>
<td></td>
</tr>
<tr>
<td>Solubility (H₂O)</td>
<td>100%</td>
</tr>
<tr>
<td>Flashpoint</td>
<td>N/A</td>
</tr>
<tr>
<td>Appearance and Color</td>
<td>Yellow Liquid</td>
</tr>
<tr>
<td>Vapor Pressure (mm Hg)</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Density (Air = 1)</td>
<td>N/A</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>N/A</td>
</tr>
<tr>
<td>(Butyl Acetate = 1)</td>
<td></td>
</tr>
<tr>
<td>% Volatiles by Volume</td>
<td>N/A</td>
</tr>
</tbody>
</table>

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Fire Extinguishing Media : Any

Special Fire Fighting Procedures : None

Unusual Fire and Explosion Hazards : None

Toxic Gases Produced : Reagent contact with acids and acid salts liberates toxic hydrogen cyanide gas.

SECTION V - HEALTH HAZARD DATA

Effect of Overexposure : Irritations to eye and skin. If ingested, weakness, dizziness, headache, nausea and vomiting.
**Emergency and First Aid Procedures:**

In case of SKIN CONTACT, immediately wash affected area(s) thoroughly with soap and water. **EYE CONTACT:** Flush with large amounts of water. If INGESTED, give emetic (warm salt water) until vomit is clear. If patient is unconscious, give inhalations of amyl nitrate (or ammonia) 15-30 seconds, every 15 minutes for 1 hour. Give artificial respiration if necessary. Seek medical attention immediately.

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**SECTION VI - REACTIVITY DATA**

**Stability:**

Stable

**Conditions to Avoid:**

Contact with acids, acid salts and oxidizers.

**Incompatibility:**

Acids, acid salts and oxidizers.

**Hazardous Polymerization:**

None

**Decomposition Products:**

None

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**SECTION VII - SPILL AND DISPOSAL PROCEDURES**

**Steps to be taken in case of a spill or discharge:**

Ventilate area immediate to the spill. Neutralize the spill by treatment with strong alkaline solutions of calcium or sodium hypochlorite. After neutralization, absorb spill using towels or absorbent material from commercial, chemical spill kit. Contain absorbent waste in BioHazard bags. Areas affected by the spill may be slippery due to surfactants in the reagent. Flush spill area thoroughly with water to approved outside drainage.

**Disposal Procedure:**

Method of waste disposal must comply with Federal, State and Local discharge requirements.

**EPA Hazardous Waste Number:**

P030
SECTION VIII - PROTECTIVE EQUIPMENT

Ventilation: Ensure adequate ventilation.

Respiratory Protection: None required.

Eye/Skin Protection: Safety glasses and laboratory coat. For spills, splash goggles and rubber gloves. Clothing contaminated with this reagent should be removed immediately and not reworn until the reagent is removed from the clothing.

SECTION IX - STORAGE AND HANDLING PRECAUTIONS

Storage Coding: None

Special Precautions: Avoid excessive light. Store at room temperature. Wash hands thoroughly with soap and water after handling product.
ABBREVIATIONS

Section 01 - IDENTIFICATION

CAS Registry Number and Name - Chemical abstract service registry number and name as it appears in the EPA Toxic Substance Control Act Chemical Substance Inventory.

Section 02 - PHYSICAL AND HEALTH HAZARD INGREDIENTS

PEL - Permissible exposure limit for a chemical in the air as established by The Occupational Safety & Health Administration (OSHA).

TLV - Threshold limit value for a chemical in the air as established by The American Conference of Government Industrial Hygienists.

(PEL)TLV:TWA - The time-weighted average exposure for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers may be repeatedly exposed without adverse effect.

TLV:STEL - The short term exposure limit is a 15-minute time weighted average exposure which should not be exceeded at any time during a workday, even if the 8-hour TWA is within the TLV.

TLV:C - The ceiling concentration that should not be exceeded even momentarily.

PEL: ACCEPTABLE CEILING CONCENTRATION - The concentration not to be exceeded during an 8-hour shift, except for a given time period, and not exceeding the concentration given as the acceptable maximum peak.

CARCINOGENIC REFERENCES - Will indicate whether the ingredient has been found to be a (potential) carcinogen by 1) IARC (International Agency for Research on Cancer), 2) NTP (National Toxicology Program) or 3) OSHA (Occupational Safety & Health Administration).

Section 03 - PHYSICAL HAZARD DATA

FLASH POINT - Designated by method. CC - Closed Cup. OC - Open Cup

Section 04 - FIRE AND EXPLOSION DATA

NFPA HAZARD CODES - The National Fire Protection Association's Hazard Identification System intended to indicate inherent hazards of a chemical under emergency conditions such as fire. The degree of each of three hazards (Health/Flammability/ Reactivity) is rated by a numerical designation ranging from low to high of 0 to 4.

HMIS HAZARD CODES - The National Paint & Coatings Association's Hazard Materials Identification System intended to estimate the inherent hazards of a chemical under normal workplace situations. The degree of each of three hazards (Health/Flammability/ Reactivity) is rated by a numerical designation ranging from low to high of 0 to 4.

Section 05 - HEALTH HAZARD DATA

ACUTE LD50/LC50 - The Lethal Dose/Concentration required to kill 50% of a population of test animals by the route of administration indicated.

Section 07 - HEALTH HAZARD DATA


ENVIRONMENTAL EMERGENCY (National Response Center) - Provides twenty-four (24) hour advice on hazardous chemical spills and can provide your local Poison Control Center telephone number.

The information published in the Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is the users responsibility to determine the usability and suitability of this information for its use and the adoption of necessary safety precautions. We reserve the right to revise Material Safety Data Sheets periodically as new information becomes available.