MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: BiCAT® 8842
PRODUCT NUMBER: LB3241
CHEMICAL NAME: Bismuth compound
DATE PREPARED: 18-Dec-12

MANUFACTURER:
The Shepherd Chemical Company
4900 Beech Street
Cincinnati, Ohio 45212
(513)-731-1110 (voice), (513)-731-1532 (fax)

EMERGENCY TELEPHONE NO. 1-800-424-9300 CHEMTREC

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CHEMICAL INGREDIENT</th>
<th>C.A.S. NUMBER</th>
<th>% BY WEIGHT</th>
<th>% METAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary compound</td>
<td>Proprietary</td>
<td>100</td>
<td>9 Bi</td>
</tr>
</tbody>
</table>

* This product is not on the TSCA inventory. It is being manufactured for Research and Development purposes only.

SECTION 3 - HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE: Yellow viscous liquid

ODOR: No odor

CAUTION! AVOID CONTACT WITH EYES, SKIN AND CLOTHING. AVOID BREATHING VAPORS OR MIST. WASH THOROUGHLY AFTER HANDLING.

POTENTIAL HEALTH EFFECTS, TARGET ORGAN EFFECTS (ACUTE AND CHRONIC)

The toxicological properties of this material have not been fully investigated. Health hazard information is based on compounds of similar composition.

This product may cause irritation to the eyes, skin, and upper respiratory tract.

CARCINOGENICITY: Not applicable

SECTION 4 - FIRST AID MEASURES

If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician. If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Call a physician. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. Wash skin with soap and water.

SECTION 5 - FIRE FIGHTING MEASURES

FLASHPOINT/METHOD: > 210°F
FLAMMABLE LIMITS: LEL: N/A UEL: N/A
EXTINGUISHING MEDIA: Water
SPECIAL FIREFIGHTING PROCEDURES: Use Self-Contained Breathing-Apparatus.
FIRE AND EXPLOSION HAZARD:
N/A

SECTION 6 - ACCIDENTAL RELEASE MEASURES
Neutralize with an alkaline material and flush with water to a wastewater treatment system.

SECTION 7- HANDLING AND STORAGE
Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Wash thoroughly after handling. Store in closed containers away from extreme heat, flame or strong oxidizing agents.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION
RESPIRATORY PROTECTION: Use NIOSH/MSHA approved respirators if OSHA PEL is exceeded.
SKIN PROTECTION: Use impervious glove and body-covering clothing.
EYE PROTECTION: Use side-shielded safety glasses or goggles.
ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation.
EXPOSURE GUIDELINES:

<table>
<thead>
<tr>
<th>CHEMICAL INGREDIENT</th>
<th>OSHA PEL (mg/M3)</th>
<th>ACGIH TLV (mg/M3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary compound</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES
APPEARANCE: Yellow viscous liquid
ODOR: No odor
BOILING POINT: Not available
VAPOR PRESSURE (mm HG): Not available
VAPOR DENSITY (Air = 1): Not available
SOLUBILITY IN WATER: Not available
SPECIFIC GRAVITY / DENSITY: Not available
FREEZING POINT: Not available
pH: N/A
EVAPORATION RATE: Not available

SECTION 10 - STABILITY AND REACTIVITY
STABILITY: This product is stable. Hazardous polymerization will not occur.
INCOMPATIBILITY: N/A
HAZARDOUS DECOMPOSITION BY PRODUCTS:
N/A

SECTION 11- TOXICOLOGICAL INFORMATION
Not available

SECTION 12- ECOLOGICAL INFORMATION
Not available

SECTION 13 - DISPOSAL CONSIDERATION
Flush with water to a wastewater treatment system or neutralize with an alkaline material and dispose of insoluble hydrate solid at an approved landfill. Observe local, state and federal regulations.

SECTION 14 - TRANSPORT INFORMATION
This product is not regulated for transportation.
SECTION 15 - REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD:
Hazardous due to target organ effects (See Section 3)

CERCLA/SUPERFUND:
Not applicable

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):
Section 311/312 Hazard Categories: Acute Health Hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA):
All components of this product are on the TSCA Inventory unless otherwise noted in Section 2.

INTERNATIONAL REGULATIONS:
Available upon request

SECTION 16 - OTHER INFORMATION

REFERENCES:
Material Safety Data Sheets, Raw Material Vendors

HMIS RATING:
Health - 1
Flammability - 1
Reactivity - 0
Personal Protection - B

DISCLAIMER:
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