MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Cobalt octoate 12%
PRODUCT NUMBER: 1345
CHEMICAL NAME: Cobalt 2-ethylhexanoate mixture
DATE PREPARED: 07-Jan-08

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>Cobalt 2-ethylhexanoate</td>
<td>136-52-7</td>
<td>75 (max.)</td>
<td>12 Co</td>
</tr>
<tr>
<td>Mineral Spirits (Stoddard)</td>
<td>8052-41-3</td>
<td>35 (max.)</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 3 - HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE: Blue liquid
ODOR: Mineral Spirits odor

CAUTION! COMBUSTIBLE LIQUID AND VAPOR. CONTAINS PETROLEUM DISTILLATES. KEEP AWAY FROM HEAT AND FLAME. DO NOT CUT OR WELD NEAR CONTAINERS, EVEN WHEN EMPTY. EXPLOSIONS CAN RESULT. AVOID CONTACT WITH EYES, SKIN AND CLOTHING. AVOID BREATHING VAPORS. WASH THOROUGHLY AFTER HANDLING. IN CASE OF FIRE, USE FOAM, CARBON DIOXIDE, DRY CHEMICAL OR WATER SPRAY.

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

SOLVENT: Excessive inhalation may cause dizziness, drowsiness, headache, nausea and irritation of the nose, throat and respiratory tract. Repeated contact may cause dermatitis. Aspiration into lungs may cause chemical pneumonitis.

COBALT COMPOUNDS: Overexposure to cobalt compounds may cause respiratory sensitization and an allergic skin rash. They are mildly irritating to the eyes and if swallowed, may cause vomiting and diarrhea and a sensation of hotness.

CARCINOGENICITY: IARC states that cobalt compounds are possibly carcinogenic to humans.

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, do not induce vomiting. Keep person warm. Call a physician immediately. Never give anything by mouth to an unconscious person. In case of contact, immediately flush skin and eyes with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician.
SECTION 5 - FIRE FIGHTING MEASURES

FLASHPOINT/METHOD: 105º F (PMcc)
FLAMMABLE LIMITS: LEL: 1.0 UEL: 6.0
EXTINGUISHING MEDIA: CO2, Foam, Dry Chemical or Water Spray.
SPECIAL FIREFIGHTING PROCEDURES: Use Self-Contained Breathing-Apparatus.
FIRE AND EXPLOSION HAZARD:
Moderate when exposed to extreme heat or flame.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Remove ignition sources. Ventilate area of spill. Do not allow to enter confined spaces such as sewers. Absorb in vermiculite, dry sand, earth or similar material.

SECTION 7 - HANDLING AND STORAGE

Avoid contact with eyes, skin and clothing. Avoid breathing vapors. 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>Cobalt 2-ethylhexanoate</td>
<td>0.1 Co</td>
<td>0.02 Co</td>
</tr>
<tr>
<td>Mineral Spirits (Stoddard)</td>
<td>2900</td>
<td>525</td>
</tr>
</tbody>
</table>

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Blue liquid
ODOR: Mineral Spirits odor
BOILING POINT: >300º F (Min. Sp.)
VAPOR PRESSURE (mm HG): 2.0 (Min. Sp.)
VAPOR DENSITY (Air = 1): 4.9 (Min. Sp.)
SOLUBILITY IN WATER: Negligible
SPECIFIC GRAVITY / DENSITY: 1.02
FREEZING POINT: Not available
pH: N/A
EVAPORATION RATE: <1 (Min. Sp.)

SECTION 10 - STABILITY AND REACTIVITY

STABILITY: This product is stable. Hazardous polymerization will not occur.
INCOMPATIBILITY: Strong oxidizing agents.
HAZARDOUS DECOMPOSITION BY PRODUCTS:
Thermal decomposition may produce carbon monoxide.

SECTION 11- TOXICOLOGICAL INFORMATION

oral rat LD50: 1300 mg/kg
SECTION 12- ECOLOGICAL INFORMATION

Not Available

SECTION 13 - DISPOSAL CONSIDERATION

Liquid incineration or dispose of contaminated absorbent/stabilizing agent in an approved landfill. Observe local, state and federal regulations.

SECTION 14 - TRANSPORT INFORMATION

BY LAND (If > 119 gal./pkg.): NA1993, Combustible liquid, n.o.s. (contains Petroleum distillates), III
BY AIR/OCEAN: UN1993, Flammable liquid, n.o.s. (contains Petroleum distillates), 3, III

SECTION 15 - REGULATORY INFORMATION

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

CERCLA/SUPERFUND:
N/A

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

Section 313- This product contains the following substances subject to 313 reporting:
Cobalt cmpds. 75% max.

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

INTERNATIONAL REGULATIONS:
Registered in Australia (AICS), Canada (DSL), Europe (EINECS), and Korea (KECI)

SECTION 16 - OTHER INFORMATION

REFERENCES:
Occupational Health Guidelines for Chemical Hazards, JAN. 1981, NIOSH/OSHA
Occupational Diseases - A Guide to Their Recognition, JUNE 1977, NIOSH
Criteria for Controlling Occupational Exposure to Cobalt, OCT. 1981, NIOSH

HMIS RATING:
Health - 2*
Flammability - 2
Reactivity - 0
Personal Protection - B

DISCLAIMER:
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