Section 1 - Product and Company Information

Product Name: Chlorophyllin sodium copper salt, Commercial Grade
Product Number: C6003
Brand: Sigma Chemical
Company: Sigma-Aldrich
Address: 3600 Spruce Street
City, State, Zip, Country: SAIN LOUIS, MO 63103 US
Technical Phone: 800-325-5832
Emergency Phone: 314-776-6555
Fax: 800-325-5922

Section 2 - Composition/Information on Ingredient

**CAS #**
- CHLOROPHYLLIN SODIUM-COPPER: 11026-34-1
- COMMERCIAL GRADE

**Formula**
- C34H51CuN4O6.3Na

**Synonyms**
- Chlorophyllin, potassium, sodium, and copper mala-complex, Chlorine o6, copper deriv...
- Frustrum salt, Chlorophyllin, copper sodium complex (8G), Chlorophyllin sodium copper salt, Potassium sodium copper chlorophyll, Sodium-copper chloro: o6

Section 3 - Hazards Identification

Emergency Overview
Caution: Avoid contact and inhalation.

HMIS Rating
- Health: 1
- Flammability: 0
- Reactivity: 1

NFPA Rating
- Health: 1
- Flammability: 0
- Reactivity: 1

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

**Oral Exposure**
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

**Inhalation Exposure**
If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

**Dermal Exposure**
In case of contact, immediately wash skin with soap and copious amounts of water.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A
Extinguishing Media
- Suitable: Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting
- Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
- Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure(s) of Personal Protection(s)
- Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.
- Methods for Cleaning up:
  - Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

**Handling**
- User Exposure: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

**Storage**
- Suitable: Keep tightly closed. Store at 2-8°C

**Special Requirements**
- Light sensitive.

Section 8 - Exposure Controls / PPE

**Engineering Controls**
- Safety shower and eye bath. Mechanical exhaust required.

**Personal Protective Equipment**
- Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU) Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks.
- Hand: Protective gloves.
- Eye: Chemical safety goggles.

Sigma Chemical - C6003
www.sigma-aldrich.com
**Section 9 - Physical/Chemical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td></td>
</tr>
<tr>
<td>Physical State</td>
<td>Color</td>
</tr>
<tr>
<td>Solid</td>
<td>Green-Black</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>724.1 AMU</td>
</tr>
<tr>
<td>pH</td>
<td>N/A</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>N/A</td>
</tr>
<tr>
<td>Saturated Vapor Conc.</td>
<td>N/A</td>
</tr>
<tr>
<td>Sg/Density</td>
<td>N/A</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>N/A</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>N/A</td>
</tr>
<tr>
<td>Volatility%</td>
<td>N/A</td>
</tr>
<tr>
<td>Viscosity</td>
<td>N/A</td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>N/A</td>
</tr>
<tr>
<td>Decomposition Temp.</td>
<td>N/A</td>
</tr>
<tr>
<td>Flash Point °F</td>
<td>N/A</td>
</tr>
<tr>
<td>Flash Point °C</td>
<td>N/A</td>
</tr>
<tr>
<td>Explosion Limits</td>
<td>N/A</td>
</tr>
<tr>
<td>Flashpoint</td>
<td>N/A</td>
</tr>
<tr>
<td>Flammability</td>
<td>N/A</td>
</tr>
<tr>
<td>Autoignition Temp.</td>
<td>N/A</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble</td>
</tr>
<tr>
<td>N/A</td>
<td>not available</td>
</tr>
</tbody>
</table>

**Section 10 - Stability and Reactivity**

**Stability**
- Stable
- Stable.
- Conditions of Instability
- Light sensitive.
- Materials to Avoid
- Strong oxidizing agents.
- Hazardous Decomposition Products
  - Carbon monoxide, Carbon dioxide, Nitrogen oxides, Copper oxides.

**Section 11 - Toxicological Information**

**Route of Exposure**
- Skin Contact: May cause skin irritation.
- Skin Absorption: May be harmful if absorbed through the skin.
- Eye Contact: May cause eye irritation.
- Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
- Ingestion: May be harmful if swallowed.

**Signs and Symptoms of Exposure**
- Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**RTECS Number:** GS2168856

**Toxicity Data**
- Oral: Mouse: 7000 mg/kg (LD50)
  - Remarks: Nutritional and Gross Metabolic Weight loss or decreased weight gain.
- Intraperitoneal - Mouse: 190 mL/KG (LD50)

**Chronic Exposure - MutaGen**
- Species: Mouse
- Route: Oral
- Dose: 1500 UG/KG
- Mutation test
- Other mutation test systems

**Section 12 - Ecological Information**

No data available.

**Section 13 - Disposal Considerations**

Appropriate Method of Disposal of Substance or Preparation
- Bury in a landfill site approved for the disposal of chemical and hazardous wastes.
- Observe all federal, state, and local environmental regulations.

**Section 14 - Transport Information**

**DOT**
- Proper Shipping Name: None
- Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

**IATA**
- Non-Hazardous for Air Transport: Non-hazardous for air transport.

**Section 15 - Regulatory Information**

**EU Additional Classification**
- Safety Statements:
  - S2: 24/25
  - Do not breathe dust. Avoid contact with skin and eyes.

Sigma Chemical - C6003
Page 3

Sigma-Aldrich Corporation
www.sigma-aldrich.com
US Classification and Label Text
US Statements
Caution: Avoid contact and inhalation.

United States Regulatory Information
SARA Listed: Yes
Denotified: 1.0%
Notes: This product is subject to SARA section 313 reporting requirements - copper compounds.

TSCA Inventory Item: Yes

Canada Regulatory Information
WHMIS Classification
This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

Disclaimer
For R&D use only. Not for drug, household or other uses.

Warranty
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.