# MATERIAL SAFETY DATA SHEET

## I PRODUCT IDENTIFICATION

<table>
<thead>
<tr>
<th>Trade Name:</th>
<th>Gold Chloride</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Nature:</td>
<td>Gold Salt</td>
</tr>
<tr>
<td>Synonyms:</td>
<td>Gold III Chloride</td>
</tr>
<tr>
<td>Formula:</td>
<td>AuCl$_4$ * H$_2$O</td>
</tr>
</tbody>
</table>

## II HAZARDOUS INGREDIENTS

TLV: 1.0 mg/m$^3$

## III PHYSICAL DATA

<table>
<thead>
<tr>
<th>Boiling Point 760 mm Hg:</th>
<th>Decomposes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solubility in Water:</td>
<td>Very soluble</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
<td>N/A</td>
</tr>
<tr>
<td>Appearance and Odor:</td>
<td>Yellow-orange crystal powder. Faint chlorine odor.</td>
</tr>
<tr>
<td>Melting Point:</td>
<td>Decomposes</td>
</tr>
<tr>
<td>Specific Gravity (H$_2$O=1):</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Density (air=1):</td>
<td>N/A</td>
</tr>
</tbody>
</table>

## IV FIRE AND EXPLOSION HAZARDS DATA

- Flash Point (Method used): N/A
- Autoignition Temperature: No Data
- Flammable Limits in Air: Lower: N/A  Upper: N/A
- Extinguishing Media: Use CO$_2$, foam, or dry chemical.
- Special Fire Fighting Procedures: Self contained breathing apparatus.
- Unusual Fire and Explosion Hazards: May emit toxic fumes of Cl$^-$ on decomposition.

## V HEALTH HAZARD DATA

Effects of Over-exposure: Poison, strong skin, eye, and mucous membrane irritant.

Other Health Hazards: To the best of our knowledge the acute and chronic toxicity of this substance has not been fully investigated.

## VI REACTIVITY DATA

Stability: Unstable

Incompatibility (Materials to Avoid): Ferrous sulfate, organics, NH$_3$, Zn, KCN, reducing agents, and ammonia.

Hazardous Decomposition Products: HCl, Cl$_2$, contact with NH$_4$OH yields explosive products.

Hazardous Polymerization: Will not occur.
VII  SPILL OR LEAK PROCEDURES

Steps to Be Taken in Case Material Is Released or Spilled:  Sweep up and place in airtight plastic container.
Waste Disposal:  Ship to precious metal refiner.

VIII  SPECIAL PROTECTION INFORMATION

Ventilation Requirements:  Local exhaust, mechanical.
Respiratory Protection:  NIOSH/MSHA approved breathing apparatus.

Eye/Face Protection:  Goggles
Protective Gloves:  Rubber
Other Protective Equipment:  Use under film hood, normal lab wear.

IX  SPECIAL PRECAUTIONS

Other Handling and Storage Conditions:  Keep container tightly closed.  Store in a cool, dry, well-ventilated area.  Wash thoroughly after use.

Special Labels:  Keep tightly closed, read MSDS before using.  Hygroscopic.  In compliance with OSHA and NFPA requirements.

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees.  This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Prepared by:  S. Dierks
Dated:  November 1991