Section 1 - Product and Company Information

Product Name: SODIUM AUROTHIOMALATE HYDRATE
Product Number: 157201
Brand: ALDRICH
Company: Sigma-Aldrich Canada, Ltd
Address: 2149 Winston Park Drive
Oakville ON L6H 6J8 CA
Technical Phone: 9058299500
Fax: 9058299292
Emergency Phone: 800-424-9300

Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM AUROTHIOMALATE HYDRATE</td>
<td>12244-57-4</td>
<td>No</td>
</tr>
</tbody>
</table>

Synonyms:
- Aurothiomaleate sodium
- AuTM
- Butanedioic acid, mercapto-, monogold(1+) sodium salt
- Chrysothios
- (1,2-Dicarboxyethyl)thio)gold disodium salt
- (Dihydrogen mercaptosuccinato)gold disodium salt
- Disodium aurothiomalate
- Gold sodium thiomalate
- Kidon
- (Mercaptobutanedioato(1-))gold disodium salt
- Miochrysine
- Myochrysine
- Myocrisin
- Sodium aurithiomalate
- Sodium aurothiomalate
- Succinic acid, mercapto-, gold sodium salt
- Tauredon
- Taure(o)don

RTECS Number: MD5435000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Harmful.
Harmful by inhalation, in contact with skin and if swallowed. May cause sensitization by skin contact.
Target organ(s): Kidneys.

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 not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE
In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE
In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

FLASH POINT
N/A

AUTOIGNITION TEMP
N/A

FLAMMABILITY
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.

EXPOSURE HAZARD(S)
Material: Harmful solid. Sensitizer.

Section 6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

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 breathing dust. Avoid contact with eyes, skin, and clothing.

STORAGE
Suitable: Keep container closed. Store in a cool dry place.

SPECIAL REQUIREMENTS
Hygroscopic.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
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). Where risk assessment shows air-purifying respirators are
appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
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<tr>
<td>pH</td>
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<tr>
<td>BP/BP Range</td>
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<tr>
<td>MP/MP Range</td>
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<tr>
<td>Freezing Point</td>
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<td>Vapor Pressure</td>
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<tr>
<td>Vapor Density</td>
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<td>Saturated Vapor Conc.</td>
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<tr>
<td>SG/Density</td>
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<tr>
<td>Bulk Density</td>
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<tr>
<td>Odor Threshold</td>
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<tr>
<td>Volatile%</td>
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<tr>
<td>VOC Content</td>
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<tr>
<td>Water Content</td>
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</tr>
<tr>
<td>Solvent Content</td>
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<td>Evaporation Rate</td>
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<tr>
<td>Viscosity</td>
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<td>Partition Coefficient</td>
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<td>Decomposition Temp.</td>
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<tr>
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<td>Miscellaneous Data</td>
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<tr>
<td>Solubility</td>
<td>N/A</td>
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</tbody>
</table>

N/A = not available

Section 10 - Stability and Reactivity

STABILITY
Conditions of Instability: Moisture.
Conditions to Avoid: Moisture.
Materials to Avoid: Strong oxidizing agents, Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Sulfur oxides.

Section 11 - Toxicological Information

ROUTE OF EXPOSURE
Multiple Routes: Harmful if swallowed, inhaled, or absorbed through skin. May cause irritation.

SENSITIZATION
Skin: May cause allergic skin reaction.
TARGET ORGAN(S) OR SYSTEM(S)
Kidneys.

SIGNS AND SYMPTOMS OF EXPOSURE
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Symptoms of exposure can include pruritus, stomatitis, metallic taste, and papular eruptions. Blood effects. Dermatitis. Exposure can cause:

TOXICITY DATA

<table>
<thead>
<tr>
<th>Route of Application</th>
<th>Species</th>
<th>Dose</th>
<th>LD50</th>
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<tbody>
<tr>
<td>Intramuscular</td>
<td>Woman</td>
<td>600 UG/KG</td>
<td>600 UG/KG</td>
</tr>
<tr>
<td>Intramuscular</td>
<td>Woman</td>
<td>600 UG/KG</td>
<td>LDLO</td>
</tr>
<tr>
<td>Subcutaneous</td>
<td>Subcutaneous</td>
<td>303 MG/KG</td>
<td>303 MG/KG</td>
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<tr>
<td>Intravenous</td>
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<td>LD50</td>
<td>LD50</td>
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<td>Subcutaneous</td>
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<td>930 MG/KG</td>
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<tr>
<td>Intravenous</td>
<td>Mouse</td>
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<td>855 MG/KG</td>
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<tr>
<td>LD50</td>
<td>LD50</td>
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<td>Intramuscular</td>
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</tr>
<tr>
<td>LD50</td>
<td>LD50</td>
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<tr>
<td>CHRONIC EXPOSURE - TERATOGEN</td>
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<tr>
<td>Species: Rat</td>
<td>Dose: 250 MG/KG</td>
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<tr>
<td>Route of Application: Subcutaneous Subcutaneous</td>
<td>Exposure Time: (6-15D PREG) (6-15D PREG)</td>
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</table>
CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat Rat
Dose: 75 MG/KG 75 MG/KG
Route of Application: Intraperitoneal Intraperitoneal
Exposure Time: (4-6D PREG) (4-6D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Other effects to embryo. Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Other effects to embryo. Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Rat Rat
Dose: 75 MG/KG 75 MG/KG
Route of Application: Intraperitoneal Intraperitoneal
Exposure Time: (13-15D PREG) (13-15D PREG)
Result: Effects on Newborn: Biochemical and metabolic. Effects on Newborn: Biochemical and metabolic.

Species: Rat Rat
Dose: 900 MG/KG 900 MG/KG
Route of Application: Subcutaneous Subcutaneous
Exposure Time: (6-15D PREG) (6-15D PREG)
Result: Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth). Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).

Species: Rabbit Rabbit
Dose: 257 MG/KG 257 MG/KG
Route of Application: Subcutaneous Subcutaneous
Exposure Time: (6-13D PREG) (6-13D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. 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
Symbol of Danger: Xn
Indication of Danger: Harmful.
R: 20/21/22-43
Risk Statements: Harmful by inhalation, in contact with skin and if swallowed. May cause sensitization by skin contact.
S: 36
Safety Statements: Wear suitable protective clothing.

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Harmful.
Risk Statements: Harmful by inhalation, in contact with skin and if swallowed. May cause sensitization by skin contact.
Safety Statements: Wear suitable protective clothing.
US Statements: Target organ(s): Kidneys.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: No

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: No
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 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.