## Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

1.1 **Product Code:** 15316  
**Product Name:** Auranofin  
**Synonyms:** [1-(thio-kS)-ß-D-glucopyranose 2,3,4,6-tetraacetato](triethylphosphine)-gold; NSC 321521; Ridauragold thiol; SKF 39162;  

1.2 **Relevant identified uses of the substance or mixture and uses advised against:**  
**Relevant identified uses:** For research use only, not for human or veterinary use.  

1.3 **Details of the Supplier of the Safety Data Sheet:**  
- **Company Name:** Cayman Chemical Company  
  1180 E. Ellsworth Rd.  
  Ann Arbor, MI 48108  
- **Web site address:** www.caymanchem.com  
- **Information:** Cayman Chemical Company  
  +1 (734)971-3335  
- **Emergency Contact:**  
  CHEMTREC Within USA and Canada: +1 (800)424-9300  
  CHEMTREC Outside USA and Canada: +1 (703)527-3887

1.4 **Emergency telephone number:**

<table>
<thead>
<tr>
<th>Emergency Contact</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEMTREC Within USA and Canada</td>
<td>+1 (800)424-9300</td>
</tr>
<tr>
<td>CHEMTREC Outside USA and Canada</td>
<td>+1 (703)527-3887</td>
</tr>
</tbody>
</table>

## Section 2. Hazards Identification

2.1 **Classification of the Substance or Mixture:**  

2.1.1 **Classification according to Regulation (EC) No 1272/2008 [CLP]:**  
- **Acute Toxicity:** Oral, Category 3  
- **Toxic To Reproduction:** Category 2

2.1.2 **Classification according to Directive 1999/45/EC:**  
- **T:** Toxic  
  - Reproductive Hazard: 3  
  - Risk Phrases: R25, R62, R63  
  - For full text of R-phrases: see SECTION 15.

2.2 **Label Elements:**

2.2.1 **Labeling according to Regulation (EC) No 1272/2008 [CLP]:**

- **GHS Signal Word:** Danger
- **GHS Hazard Phrases:**  
  - H301: Toxic if swallowed.  
  - H361: Suspected of damaging fertility or the unborn child.
- **GHS Precaution Phrases:**  
  - P264: Wash (hands) thoroughly after handling.  
  - P201: Obtain special instructions before use.  
  - P202: Do not handle until all safety precautions have been read and understood.  
  - P281: Use personal protective equipment as required.
- **GHS Response Phrases:**  
  - P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
  - P330: Rinse mouth.
Auranofin

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P308+313: IF exposed or concerned: Get medical attention/advice.

GHS Storage and Disposal Phrases:
Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.2.2 Labeling according to Directive 1999/45/EC:

Reproductive Hazard: 3

2.3 Adverse Human Health Effects and Symptoms:
Material may be irritating to the mucous membranes and upper respiratory tract.
May be harmful by inhalation or skin absorption.
May cause eye, skin, or respiratory system irritation.
Suspected of damaging fertility or the unborn child.
Toxic if swallowed.
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>CAS # / RTECS #</th>
<th>Hazardous Components (Chemical Name)/ REACH Registration No.</th>
<th>Concentration</th>
<th>EC No./ EC Index No.</th>
<th>Risk Phrases/ GHS Classification</th>
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</thead>
<tbody>
<tr>
<td>34031-32-8 MD6500000</td>
<td>Auranofin</td>
<td>100.0 %</td>
<td>251-801-9 NA</td>
<td>T; Rp:3, R25-62-63 Acute Tox.(O) 3: H301 Toxic Repro. 2: H361</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid Measures:
No data available.

In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.

In Case of Ingestion: Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media:
Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.

Unsuitable Extinguishing Media:
Use water spray to cool fire-exposed containers.

5.2 Flammable Properties and Hazards:
No data available.

Flash Pt: No data.
Explosive Limits: LEL: No data. UEL: No data.
Autoignition Pt: No data.

5.3 Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or Multi-region format
Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures: Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

6.2 Environmental Precautions: Take steps to avoid release into the environment, if safe to do so.

6.3 Methods and Material For Containment and Cleaning: Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling: Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.

7.2 Precautions To Be Taken in Storing: Keep container tightly closed. Store in accordance with information listed on the product insert.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
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<tbody>
<tr>
<td>34031-32-8</td>
<td>Auranofin</td>
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<td>No data.</td>
<td>No data.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>OSHA TWA</th>
<th>ACGIH TWA</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>34031-32-8</td>
<td>Auranofin</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

8.2 Exposure Controls:

8.2.1 Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

8.2.2 Personal protection equipment:

- **Eye Protection:** Safety glasses
- **Protective Gloves:** Compatible chemical-resistant gloves
- **Other Protective Clothing:** Lab coat
- **Respiratory Equipment (Specify Type):** NIOSH approved respirator, as conditions warrant.
- **Work/Hygienic/Maintenance Practices:** Do not take internally. Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling. No data available.
Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [ ] Gas   [ ] Liquid   [X] Solid
Appearance and Odor: A crystalline solid
Melting Point: No data.
Boiling Point: No data.
Flash Pt: No data.
Evaporation Rate: No data.
Explosive Limits: LEL: No data. UEL: No data.
Vapor Pressure (vs. Air or mm Hg): No data.
Vapor Density (vs. Air = 1): No data.
Specific Gravity (Water = 1): No data.
Solubility in Water: No data.
Solubility Notes: ~4 mg/ml in EtOH; ~5 mg/ml in DMSO;
Autoignition Pt: No data.

9.2 Other Information

Percent Volatile: No data.
Molecular Formula & Weight: C20H34AuO9PS 678.5

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.
10.2 Stability: Unstable [ ] Stable [X]
10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.
Polymerization: Will occur [ ] Will not occur [X]
10.4 Conditions To Avoid: No data available.
10.5 Incompatibility - Materials No data available.
To Avoid:
10.6 Hazardous Decomposition Or Byproducts: No data available.

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.
Auranofin - Toxicity Data: Oral TDLO (man): 1200 µg/kg/2W (intermittent); Oral TDLO (woman): 5400 µg/kg/10D (intermittent); Oral LD50 (rat): 265 mg/kg; Intraperitoneal LD50 (rat): 25500 µg/kg; Subcutaneous LD50 (rat): 235 mg/kg; Oral LD50 (mouse): 84940 µg/kg; Intraperitoneal LD50 (mouse): 33840 µg/kg; Subcutaneous LD50 (mouse): 53600 µg/kg;

Chronic Toxicological Effects: Auranofin - Investigated as a mutagen, reproductive effector, and tumorigen.

Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.
Auranofin RTECS Number: MD6500000

Carcinogenicity: NTP? No  IARC Monographs? No  OSHA Regulated? No
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Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.

12.2 Persistence and Degradability: No data available.

12.3 Bioaccumulative Potential: No data available.

12.4 Mobility in Soil: No data available.

12.5 Results of PBT and vPvB assessment: No data available.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT):
DOT Proper Shipping Name: Toxic solid, organic, n.o.s. ([1-(thio-kS)-β-D-glucopyranose 2,3,4,6-tetraacetato](triethylphosphine)-gold)
DOT Hazard Class: 6.1 - POISON
UN/NA Number: 2811 Packing Group: III

14.1 LAND TRANSPORT (European ADR/RID):
ADR/RID Shipping Name: Toxic solid, organic, n.o.s. ([1-(thio-kS)-β-D-glucopyranose 2,3,4,6-tetraacetato](triethylphosphine)-gold)
UN Number: 2811 Packing Group: III
Hazard Class: 6.1 - POISON

14.3 AIR TRANSPORT (ICAO/IATA):
ICAO/IATA Shipping Name: Toxic solid, organic, n.o.s. ([1-(thio-kS)-β-D-glucopyranose 2,3,4,6-tetraacetato](triethylphosphine)-gold)
UN Number: 2811 Packing Group: III
Hazard Class: 6.1 - POISON IATA Classification: 6.1

Additional Transport Information: Transport in accordance with local, state, and federal regulations. When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.

Section 15. Regulatory Information

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>S. 302 (EHS)</th>
<th>S. 304 RQ</th>
<th>S. 313 (TRI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>34031-32-8</td>
<td>Auranofin</td>
<td></td>
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</tbody>
</table>

Other US EPA or State Lists

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>CAA HAP, ODC</th>
<th>CWA NPDES</th>
<th>TSCA</th>
<th>CA PROP.65</th>
</tr>
</thead>
<tbody>
<tr>
<td>34031-32-8</td>
<td>Auranofin</td>
<td>No</td>
<td>No</td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>
Reproductive Hazard: 3

European Community Risk and Safety Phrases:
R25 Toxic if swallowed.
R62 Risk of impaired fertility.
R63 Possible risk of harm to the unborn child.
S24/25 Avoid contact with skin and eyes.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible.)

Regulatory Information
This SDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

Section 16. Other Information
Revision Date: 10/15/2014
Additional Information About This Product: No data available.
Company Policy or Disclaimer: DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.