Section 1. Identification of the Substance/Mixture and of the 

1.1 Product Code: 14069
Product Name: Propylthiouracil
Synonyms:
2,3-dihydro-6-propyl-2-thioxo-4(1H)-pyrimidinone; NSC 6498; NSC 70461; 6-n-Propylthiouracil; PTU;

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
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
Alternate Emergency Contact: CHEMTREC Outside USA and Canada: +1 (703)527-3887
Information: Cayman Chemical Company +1 (734)971-3335
Web site address: www.caymanchem.com

Section 2. Hazards Identification

<table>
<thead>
<tr>
<th>GHS Classification</th>
<th>Placard</th>
<th>Key word</th>
<th>GHS hazard phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity: Oral, Category 4</td>
<td>Exclamation point</td>
<td>Warning</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>Carcinogenicity, Category 2</td>
<td>Health hazard</td>
<td>Warning</td>
<td>Suspected of causing cancer</td>
</tr>
<tr>
<td>Toxic To Reproduction, Category 2</td>
<td>Health hazard</td>
<td>Warning</td>
<td>Suspected of damaging fertility or the unborn child</td>
</tr>
<tr>
<td>Target Organ Systemic Toxicity (repeated exposure), Category 1</td>
<td>Health hazard</td>
<td>Danger</td>
<td>Causes damage to &lt;target organs&gt; through prolonged or repeated exposure</td>
</tr>
</tbody>
</table>

GHS Hazard Phrases:
H302: Harmful if swallowed.
H351: Suspected of causing cancer.
H361: Suspected of damaging fertility or the unborn child.
H372: Causes damage to organs through prolonged or repeated exposure.

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.
P260: Do not breathe dust/fume/gas/mist/vapours/spray.

GHS Response Phrases:
P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330: Rinse mouth.
P308+313: IF exposed or concerned: Get medical attention/advice.
P314: Get medical attention/advice if you feel unwell.

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

2.3 Adverse Human Health Effects and Symptoms:
Causes damage to organs through prolonged or repeated exposure.
Harmful if swallowed.
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 causing cancer.
Suspected of damaging fertility or the unborn child.
To the best of our knowledge, the toxicological properties have not been thoroughly investigated.
Propylthiouracil

SAFETY DATA SHEET

Target Organs: Thyroid, Liver.
LD 50 / LC 50: Please refer to Section 11.
Medical Conditions Generally Aggravated By Exposure: No data available.

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Concentration</th>
<th>EC#</th>
<th>Risk Phrases</th>
<th>RTECS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylthiouracil</td>
<td>51-52-5</td>
<td>100.0 %</td>
<td>200-103-2</td>
<td>R22-40-48-62-63</td>
<td>YR1400000</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

4.1 Description of First Aid Measures:
4.1.1 In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
4.1.2 In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 20 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
4.1.3 In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 20 minutes. Have eyes examined and tested by medical personnel.
4.1.4 In Case of Ingestion: No data available.
4.2 Important Symptoms and Effects, Both Acute and Delayed: No data available.
4.3 Indication of any immediate medical attention and special treatment needed: No data available.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.
Unsuitable Extinguishing Media: A solid water stream may be inefficient.
5.2 Flammable Properties and Hazards: No data available.
Flash Pt: No data.
Autoignition Pt: No data available.
Explosive Limits: LEL: No data. UEL: No data.
Hazardous Combustion Products: No data available.
5.3 Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

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 Up: 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.
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Propylthiouracil

SAFETY DATA SHEET

7.2 Precautions To Be Taken in Storing: Keep container tightly closed.

Store in accordance with information listed on the product insert.

Hazard Label Information:

Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.

Wash thoroughly after handling.

Section 8. Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylthiouracil</td>
<td>51-52-5</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

Hazard Label Information:

7.2 Precautions To Be Taken in Storing: Keep container tightly closed.

Store in accordance with information listed on the product insert.

Hazard Label Information:

Avoid contact with skin and eyes. Do not reuse this container. Use with adequate ventilation.

Wash thoroughly after handling.

Section 8. Exposure Controls/Personal Protection

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<tr>
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<th>ACGIH TLV</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylthiouracil</td>
<td>51-52-5</td>
<td>No data.</td>
<td>No data.</td>
<td>No data.</td>
</tr>
</tbody>
</table>

Protective Equipment Summary - Hazard Label Information:

Compatible chemical-resistant gloves
Eye wash station in work area
Lab coat
Safety glasses
Safety shower in work area
Vent Hood

8.2.1 Engineering Controls (Ventilation etc.):

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

8.2.1.1 Eye Protection:

Safety glasses

8.2.2 Protective Gloves:

Compatible chemical-resistant gloves

Lab coat

Other Protective Clothing:

NIOSH approved respirator, as conditions warrant.

8.2.2.3 Respiratory Equipment (Specify Type):

No data available.

Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.

Wash thoroughly after handling.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States:

[ ] Gas [ ] Liquid [ ] Solid

Appearance and Odor:

A crystalline solid

Melting Point:

No data.

Boiling Point:

No data.

Flash Pt:

No data.

Evaporation Rate:

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:

~0.5 mg/ml in 1:5 DMF:PBS (pH 7.2); ~2, 10, and 12.5 mg/ml in EtOH, DMSO, & DMF;

Autoignition Pt:

No data.

Explosive Properties:

No data available.

Oxidizing Properties:

No data available.

9.2 Other Information

Percent Volatile:

No data.

Formula:

C7H10N2OS

Molecular Weight:

170.20
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.

10.4 Conditions To Avoid: No data available.

10.3 Polymerization: Will occur [ ] Will not occur [ X ]

10.5 Incompatibility - Materials To Avoid:

- strong acids
- strong bases

10.6 Hazardous Decomposition Or Byproducts:

- carbon dioxide
- carbon monoxide
- nitrogen oxides
- sulfur oxides

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.

Propylthiouracil - Toxicity Data: Oral LD50 (rat): 1,250 mg/kg;

Chronic Toxicological Effects: Propylthiouracil - 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. Propylthiouracil RTECS Number: YR1400000

Carcinogenicity/Other Information:

- IARC: Group 2B: Possible human carcinogen (Propylthiouracil)
- NTP: Reasonably anticipated to be a human carcinogen (Propylthiouracil)

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylthiouracil</td>
<td>51-52-5</td>
<td>Possible</td>
<td>2B</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Section 12. Ecological Information

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

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: Not dangerous goods.

14.1 LAND TRANSPORT (European ADR/RID)

ADR/RID Shipping Name: Not dangerous goods.

14.3 AIR TRANSPORT (ICAO/IATA)

ICAO/IATA Shipping Name: Not dangerous goods.

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information

European Community Hazard Symbol codes

- Xn: Harmful; Carcinogenic Hazard: 3; Reproductive Hazard: 3

European Community Risk and Safety Phrases

- R22: - Harmful if swallowed.
- R40: - Limited evidence of a carcinogenic effect

Multi-region format
R48  - Danger of serious damage to health by prolonged exposure.
R62  - Risk of impaired fertility.
S22  - Do not breathe dust.
S24/25 - Avoid contact with skin and eyes.
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

US EPA SARA Title III

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>Sec.302 (EHS)</th>
<th>Sec.304 RQ</th>
<th>Sec.313 (TRI)</th>
<th>Sec.110</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Propylthiouracil</td>
<td>51-52-5</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Other US EPA or State Lists

<table>
<thead>
<tr>
<th>Hazardous Components (Chemical Name)</th>
<th>CAS #</th>
<th>CAA HAP, ODC</th>
<th>CWA NPDES</th>
<th>TSCA</th>
<th>CA PROP.65</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Propylthiouracil</td>
<td>51-52-5</td>
<td>No</td>
<td>No</td>
<td>Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Regulatory Information Statement: 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: 05/20/2013

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.

N.A.=Not available, N.P.=Not applicable, N.D.=Not determined, N.E.=Not established, N.R.=Not required