Section 1. Product and Company Identification

Product Name: α-Santonin
Product ID: S0053
Chemical Name (Synonyms): (-)-Santonine, Santonin
Supplier: LKT Laboratories, Inc
545 Phalen Blvd.
St. Paul, MN 55130 USA
Ph: 651-644-8424 Fax: 651-644-8357
www.lktlabs.com - getinfo@lktlabs.com

GHS Classification
Acute toxicity, Oral (Category 4) H302
Acute toxicity, Skin (Category 2) H310
Skin irritation (Category 2) H315
Eye irritation (Category 2A) H319
Acute toxicity, Inhalation (Category 2) H330
Specific target organ toxicity - single exposure (Category 3) Respiratory system H335

Section 2. Hazards Identification

GHS Label elements including precautionary statements

Pictogram
Signal word: Danger
Hazard statements
H302 - Harmful if swallowed.
H310 + H330 - Fatal in contact with skin or if inhaled.
H315 - Causes skin irritation
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.
Precautionary statements
P260 - Do not breathe dust, fumes, gas, mist, vapors, spray.
P262 - Do not get in eyes, on skin or on clothing.
P264 - Wash skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoor or in a well-ventilated area.
P280 - Wear protective gloves, eye protection, face protection.
P284 - Wear respiratory protection.
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302 + P350 - IF ON SKIN: Gently wash with plenty of soap and water.
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a POISON CENTER or doctor/physician.
P320 - Specific treatment is urgent (see supplemental first aid instructions on this label).
P330 - Rinse mouth.
P332 + P313 - If skin irritation occurs: Get medical advice/attention.
P337 + P313 - If eye irritation persists: Get medical advice/attention.
P361 - Remove or take off immediately all contaminated clothing.
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification
Health hazard: 3
Chronic health hazard: *
Flammability: 0
Physical hazard: 0

NFPA Rating
Health hazard: 3
Fire hazard: 0
Reactivity hazard: 0

Potential Health Effects
Inhalation - Acute toxicity. Fatal if inhaled. May cause respiratory tract irritation.
Skin - Acute toxicity. Fatal in contact with skin. Causes skin irritation.
Eyes - Causes serious eye irritation.
Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Substances</th>
<th>Ingredient: Title Compound</th>
<th>Percent: 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula</td>
<td>C_{15}H_{18}O_{3}</td>
<td>246.30</td>
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<tr>
<td>CAS No.</td>
<td>481-06-1</td>
<td>EC No.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>207-560-7</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Eye Contact
Flush eyes with water as a precaution.

Skin Contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

Inhalation
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5. Firefighting Measures

Flash Point
Not available.

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

Firefighting Procedures
Wear self-contained breathing apparatus for firefighting if necessary.

Unusual Fire Hazards
Carbon oxides.

Section 6. Accidental Release Measures

Personal Precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing dust, vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental Precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleanup
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7. Handling and Storage

Handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Storage Conditions
Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature: -4°C

Hazardous Decomposition Products
Not available.

Other Remarks
Yellows upon exposure to light.
Section 8. Exposure Controls/Personal Protection

**Personal protective equipment**

**EXPOSURE CONTROLS**
Contains no substances with occupational exposure limit values.

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

**PERSONAL PROTECTION**

**Eye/face protection:** Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

**Skin protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Full and splash contact - Material: Nitrile rubber. Minimum layer thickness: 0.11 mm, Break through time: 480 min., Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M).

**Body protection:** Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection:** Where risk assessment shows air-purifying respirators are appropriate, use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Color</th>
<th>Solubility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid</td>
<td>White crystal powder.</td>
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<tr>
<td>Not available.</td>
<td>Not available.</td>
<td>Soluble in alcohol, ether and chloroform.</td>
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</table>

<table>
<thead>
<tr>
<th>Boiling Point</th>
<th>Volatility</th>
<th>Density</th>
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<td>Not available.</td>
<td>Not available.</td>
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</table>

<table>
<thead>
<tr>
<th>Melting Point</th>
<th>Flash Point</th>
<th>Ignition temperature</th>
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</thead>
<tbody>
<tr>
<td>170-173°C</td>
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<td>Not available.</td>
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<table>
<thead>
<tr>
<th>Lower explosion limit</th>
<th>Autoignition temperature</th>
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<td>Not available.</td>
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<table>
<thead>
<tr>
<th>Upper explosion limit</th>
<th>Vapor pressure</th>
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<td>Not available.</td>
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</table>

<table>
<thead>
<tr>
<th>Water solubility</th>
<th>Odor</th>
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</thead>
<tbody>
<tr>
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<td>Not available.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Partition coefficient: n-octanol/water</th>
<th>Odor Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
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</table>

<table>
<thead>
<tr>
<th>Relative vapor density</th>
<th>Evaporation rate</th>
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<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
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</table>

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Section 10. Stability and Reactivity

**Stability**
Stable under recommended storage conditions.

**Materials To Avoid**
Strong oxidizing agents.

**Hazardous Decomposition Products**
Not available.
### Section 11. Toxicological Information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>Mouse - 900 mg/kg</td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>Not available.</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>Not available.</td>
</tr>
<tr>
<td>Other information on acute toxicity</td>
<td>Not available.</td>
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<tr>
<td>Reproductive Toxicity</td>
<td>Not available.</td>
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<tr>
<td>Specific organ toxicity single exposure (GHS)</td>
<td>Inhalation - May cause respiratory irritation.</td>
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<tr>
<td>Specific organ toxicity repeated exposure (GHS)</td>
<td>Not available.</td>
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<tr>
<td>Teratogenicity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not available.</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not available.</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>Not available.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not available.</td>
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<tr>
<td>Aspiration Hazard</td>
<td>Not available.</td>
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<tr>
<td>Synergistic effects</td>
<td>Not available.</td>
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<tr>
<td>Additional Information</td>
<td>RTECS: LE3150000</td>
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<tr>
<td>Stomach - irregularities - based on human evidence</td>
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</table>

### Section 12. Ecological Information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Toxicity</td>
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<tr>
<td>Mobility in soil</td>
<td>Not available.</td>
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<tr>
<td>PBT and vPvB assessment</td>
<td>PBT/vPvB assessment not available as chemical safety assessment not required/not</td>
</tr>
</tbody>
</table>

### Potential Health Effects

Inhalation - Acute toxicity. Fatal if inhaled. May cause respiratory tract irritation.  
Skin - Acute toxicity. Fatal in contact with skin. Causes skin irritation.  
Eyes - Causes serious eye irritation.  
Ingestion - Acute toxicity. Harmful if swallowed.  

### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.  
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH  
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.  
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Persistence and degradability  Not available.  

Other adverse effects  Not available.  

Bioaccumulative potential  Not available.  

Section 13. Disposal Considerations

Waste Disposal  Dispose of material according to all federal, state and local regulations.  Offer material to a licensed, professional waste disposal company to dispose of as unused product.  

Section 14. Transport Information

DOT (US)  UN numbers: 2811  Class: 6.1  Packing group: II  Proper shipping name: Toxic solids, organic, n.o.s. (α-Santonin)  Marine pollutant: No  Poison inhalation hazard: No  

IATA  UN numbers: 2811  Class: 6.1  Packing group: II  Proper shipping name: Toxic solids, organic, n.o.s. (α-Santonin)  

IMDG  UN numbers: 2811  Class: 6.1  Packing group: II  EMS #: F-A, S-A  Proper shipping name: TOXIC SOLIDS, ORGANIC, N.O.S. (α-Santonin)  Marine pollutant: No  

Further Information  

Section 15. Regulatory Information

Reach No.  

SARA 302 Components  SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.  

SARA 313 Components  SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.  

SARA 311/312 Components  No SARA hazards.  

Massachusetts Right To Know Components  No components are subject to the Massachusetts Right to Know Act.  

Pennsylvania Right To Know Components  α-Santonin  CAS #: 481-06-1  Revision Date:  

New Jersey Right To Know Components  α-Santonin  CAS #: 481-06-1  Revision Date:  

California Prop 65 Components  This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.  

Section 16. Other Information

Other information  The information in this document is believed to be correct but is not necessarily complete.  LKT does not guarantee the accuracy of the information.  The burden of verifying the information in this document rests solely upon the user.  