Section 1. Product and Company Identification

**Product Name**
Allicin

**Product ID**
A4440

**Chemical Name**
Allylthiosulphinic acid allyl ester; Diallyl thiosulfinate

**Chemical Name (Synonyms)**

**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

**Emergency Phone #**
1-800-424-9300

Section 2. Hazards Identification

**GHS Classification**
Acute toxicity, Oral (Category 4), H302
Skin Corrosion/Irritation (Category 2), H315
Serious Eye Damage/Irritation (Category 2A), H319
Specific Target Organ Systemic Toxicity (Category 3), Respiratory, H335
Carcinogenicity (Category 1B), H350

**GHS Label elements including precautionary statements**

**Pictogram**

**Signal word**
Danger

**Hazard and precautionary statements**

**Hazard statements**
H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.
H350 - May cause cancer.

**Precautionary statements**
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P261 - Avoid breathing dust, fumes, gas, mist, vapors, spray.
P264 - Wash face, hands and any exposed skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/eye protection/face protection.
P281 - Use personal protective equipment as required.
P301 + P312 - IF SWALLOWED: call a POISON CENTER or doctor/physician. IF you feel unwell.
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 - IF INHALED: Remove 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.
P308 + P313 - IF exposed or concerned: Get medical advice/attention.
P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
P332 - If skin irritation occurs: Get medical advice/attention.
P342 - Store in a well-ventilated place. Keep container tightly closed.
P501 - Dispose of contents/container to an approved waste disposal plant.
P405 - Store locked up.

**HMIS Classification**
Health Hazard: 0
Flammability: 1
Physical Hazards: 0

**NFPA Rating**
Health Hazard: 0
Flammability: 1
Physical Hazards: 0

**Potential Health Effects**
Inhalation: May be harmful if inhaled. May cause respiratory irritation. May cause drowsiness or dizziness.
Skin: May be harmful if absorbed through skin. Causes skin irritation.
Eyes: Causes serious eye irritation.
Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Substances</th>
<th>Ingredients: Pure Allicin in a solution of Methanol:H2O:Formic Acid (60:40:0.1). Concentration: 10 mg/ml.</th>
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<tbody>
<tr>
<td>Formula</td>
<td>C6H10OS2</td>
</tr>
<tr>
<td>CAS No.</td>
<td>539-86-6</td>
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</tbody>
</table>

Section 4. First Aid Measures

General advice

If symptoms persist, call physician.

Eye Contact

Remove contact lenses. Flush with water for at least 15 minutes. If symptoms persist, call a physician. Immediately flush with plenty of water.

Skin Contact

Wash with plenty of water for at least 15 minutes, if skin irritation persists, please call a physician. Wash contaminated clothing before reuse.

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

Spray water, alcohol-resistant foam, dry chemical powder, and carbon dioxide.

Firefighting Procedures

Wear self-contained breathing apparatus and protective clothing.

Unusual Fire Hazards

Carbon oxides, hydrogen sulfide.

Section 6. Accidental Release Measures

Personal Precautions

Use personal protective equipment. 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

Wear gloves, goggles, and lab coat when handling this material. Use in a well ventilated area. Use only in a chemical fume hood. Wash thoroughly after handling material.

Storage Conditions

Keep container tightly closed in a dry and well-ventilated area. Recommended storage temperature: Store frozen (-80 degree C.) in a dry, dark place in a tightly closed container.

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide, and sulfur oxides.

Other Remarks

None.
Section 8. Exposure Controls/Personal Protection

**Personal protective equipment**

**EXPOSURE CONTROLS**
Contains no substances with occupational exposure limit values.
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**PERSONAL PROTECTION**

**Eye 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).

**Hand 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.

**Skin and 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>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid</td>
<td>Colorless liquid.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Boiling Point</th>
<th>Volatility</th>
<th>Melting Point</th>
<th>Density</th>
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<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
<td>$&lt;25^\circ{C}$</td>
<td>Not available.</td>
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<table>
<thead>
<tr>
<th>Solubility</th>
<th>pH</th>
<th>Ignition temperature</th>
<th>Autoignition temperature</th>
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</table>

<table>
<thead>
<tr>
<th>Lower explosion limit</th>
<th>Upper explosion limit</th>
<th>Water solubility</th>
<th>Partition coefficient: n-octanol/water</th>
<th>Relative vapor density</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Vapor pressure</th>
<th>Odor</th>
<th>Odor Threshold</th>
<th>Evaporation rate</th>
</tr>
</thead>
</table>

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Section 10. Stability and Reactivity

**Stability**
Must be kept cold, unstable at room temperature.

**Materials To Avoid**
Keep away from direct sunlight and heat.

**Hazardous Decomposition Products**
Carbon monoxide, carbon dioxide, and sulfur oxides.
Section 11. Toxicological Information

### Oral LD₅₀
Not available.

### Inhalation LC₅₀
Not available.

### Dermal LD₅₀
Subcutaneous (mouse) LD₅₀: 120mg/kg

### Other information on acute toxicity
Not available.

### Skin corrosion/irritation
Not available.

### Serious eye damage/irritation
Not available.

### Respiratory or skin sensitization
Not available.

### Germ cell mutagenicity
Not available.

### Reproductive Toxicity
Not available.

### Aspiration Hazard
Not available.

### Specific organ toxicity
- Single exposure (GHS): Not available.
- Repeated exposure (GHS): Not available.

### Synergistic effects
Not available.

### Additional Information
Not available.

### Signs and symptoms of exposure
Chemical physical, and toxicological properties have not been thoroughly investigated.

### Potential Health Effects
- Inhalation: May be harmful if inhaled. May cause respiratory irritation. May cause drowsiness or dizziness.
- Skin: May be harmful if absorbed through skin. Causes skin irritation.
- Eyes: Causes serious eye irritation.
- Ingestion: Harmful if swallowed.
- Carcinogenicity: May cause cancer.

### 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.

Section 12. Ecological Information

### Toxicity
Not available.

### Mobility in soil
Not available.

### PBT and vPvB assessment
Not available.
Persistence and degradability  Not available.  
Bioaccumulative potential  Not available.  
Other adverse effects  Not available.

Section 13. Disposal Considerations
Dispose of material according to all federal, state, and local regulations.
Waste Disposal
Offer material to a licensed, professional waste disposal company to dispose of as unused product.

Section 14. Transport Information
DOT (US)  UN number: 1230  Class: 3 (6.1)  Packing Group: II
Proper Shipping Name: Methanol
Reportable Quantity: 5000 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IATA  UN Number 1230  Class: 3 (6.1)  Packing Group: II
Proper shipping name: Methanol

IMDG  UN Number 1230  Class: 3 (6.1)  Packing Group: II
Proper Shipping Name: Methanol
EMS: No: F-E, S-D

Further Information
Refer to section 3 for information on ingredients.

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 II, 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  Acute health hazard

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

Pennsylvania Right To Know Components  Allicin  CAS #: 539-86-6  Date Revision:

New Jersey Right To Know Components  Allicin  CAS #: 539-86-6  Date Revision:

California Prop 65 Components  WARNING! This product does contain chemicals known to the State of California to cause cancer.

Allicin  CAS #: 539-86-6  Date Revision:

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.
For emergencies in the USA, call CHEMTREC 800-424-9300