**Section 1: Chemical Product and Company Identification**

<table>
<thead>
<tr>
<th>Catalog Name / Trade Name</th>
<th>SULFUR, SUBLIMED POWDER</th>
<th>Catalog Numbers: SU171; SU171D; SU173;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Commercial Names:</strong></td>
<td></td>
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<tr>
<td></td>
<td>No data available</td>
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<tr>
<td><strong>Synonyms:</strong></td>
<td>Sublimed sulfur</td>
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<tr>
<td><strong>Chemical Name:</strong></td>
<td>Sulfur</td>
<td></td>
</tr>
<tr>
<td><strong>Chemical Formula:</strong></td>
<td>S</td>
<td></td>
</tr>
<tr>
<td><strong>Supplier:</strong></td>
<td>Xenex Laboratories Inc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>#102 - 2440 Canoe Ave</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coquitlam, BC V3K 6C2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ph: (604) 552 3031</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ph: (800) 663 1002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fax: (888) 552 4993</td>
<td></td>
</tr>
<tr>
<td><strong>Chemical Family:</strong></td>
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<tr>
<td><strong>CAS #:</strong></td>
<td>7704-34-9</td>
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</tr>
<tr>
<td><strong>RTECS:</strong></td>
<td>WS4250000</td>
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<tr>
<td><strong>TSCA:</strong></td>
<td>TSCA 8(b) inventory: Sulfur Flour</td>
<td></td>
</tr>
<tr>
<td><strong>Emergency Contact:</strong></td>
<td>1-703-527-3887 (CHEMTREC)</td>
<td></td>
</tr>
</tbody>
</table>

**Section 2: Hazards Identification**

**WHMIS:**

**Workplace Hazardous Materials Information System:**

**Pictograms**

![Flammable Solids Pictogram]

**Classification**

CLASS B-4 Flammable Solids

**DSCL:**

**Dangerous Substances Classification and Labeling**

**DSCL Pictograms**

**Risk Phrases:**

R10 Flammable

R36/37 Irritating to eyes and respiratory system

**Safety Phrases:**

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 where possible)

**HMIS | Personal Protective Equipment | NFPA**

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<tbody>
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</table>
Section 3: Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name / Ingredient Name</th>
<th>CAS Number</th>
<th>% by Weight</th>
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<tbody>
<tr>
<td>Sublimed Sulfur</td>
<td>7704-34-9</td>
<td>100</td>
</tr>
</tbody>
</table>

Section 4: First aid Measures

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Skin Contact: In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Serious Eye Contact: No data available

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: No data available

Section 5: Fire and Explosion Data

Suitable extinguishing media and Instructions: Flammable solid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
### Flammability of the Product:

Flammable.

### Autolignition Temperature:

232°C (449.6°F)

### Flash Points:

CLOSED CUP: 207°C (404.6°F).

### Flammable Limits:

No data available

### Fire Hazards in Presence of Various Substances:

Flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

### Special Remarks on Fire Hazards:

Vapors given off during melting of Sulfur may contain sufficient Hydrogen Sulfide and Carbon Disulfide to permit ignition of air/vapor mixture on contact with hot surface. Such ignition may result in transmission of flames to molten Sulfur. Mixture of Barium carbide and sulfur heated at 150 deg. C becomes incandescent. Mixture of barium chloride and Sulfur ignites at about 108-111 deg. C. Calcium carbide reacts incandescently with sulfur vapors at 500 deg. C. Calcium phosphide reacts with sulfur incandescently at 300 deg. C. Powdered sulfur is spontaneously flammable when mixed with Lampblack or freshly calcined charcoal. Sulfur in chlorine dioxide takes fire spontaneously and may produce an explosion. Flowers of sulfur moistened with chromyl chloride ignites spontaneously. A mixture of lead chlorate and sulfur ignites at about 63-67 deg. C. A mixture of sulfur and silver chlorate ignites at about 74 deg. C. When finely divided sulfur is ground with silver oxide, the mixture ignites. Solid sulfur will ignite when mixed with solid sodium chlorite and moistened. Lithium carbide burns in vapors of sulfur Sulfur mixed with mercurous oxide will ignite on light impact. Powdered nickel heated with sulfur reacts with incandescence. Sulfur when heated with Thorium reacts vigorously with incandescence. Mixture of sulfur + niobium oxide + aluminum causes fire. A mixture of boron and sulfur becomes incandescent 600 deg. C.

### Explosion Hazards in Presence of Various Substances:

Explosive in presence of open flames and sparks. Non-explosive in presence of shocks.

### Special Remarks on Explosion Hazards:

SULFUR IS POOR CONDUCTOR OF ELECTRICITY & TENDS TO DEVELOP CHARGES OF STATIC ELECTRICITY DURING TRANSPORT OR PROCESSING; STATIC DISCHARGE MAY LEAD TO IGNITION OF SULFUR DUST. Sulfur + Ammonia may form explosive Sulfur Nitride. Ammonium Nitrate + Sulfur can be exploded by shock. Mixtures of Ammonium Perchlorate and Sulfur are impact sensitive. Interaction between Sulfur and Tetraphenyllead may be explosive. A mixture of sulfur + stannic iodide + sodium produces a strong explosion on impact. When sulfur is rubbed with sodium the reaction proceeds with explosive violence. When a mixture of Sulfur and yellow phosphorous is warmed is causes a vivid combustion and powerful explosion. Iodine Pentaoxide reacts explosively when warmed with sulfur. Potassium Perchlorate + Sulfur , used in flashcrackers, can be explosde by moderately strong impact. COMBINATION OF FINELY DIVIDED SULFUR & FINELY DIVIDED BROMATES (ALSO CHLORATES OR IODATES) OF BARIUM, CALCIUM,MAGNESIUM, POTASSIUM, SODIUM, OR ZINC WILL EXPLODE WITH HEAT, PERCUSSION, & SOMETIMES, LIGHT FRICTION. A mixture of sulfur and chlorates will explode. Sulfur + silver bromate produces an explosive reaction in the presence of water.
Section 6: Accidental Release Measures

Personal Precautions: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Environmental Precautions: No data available

Methods and materials for containment and cleanup: Flammable solid. Stop leak if without risk. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

Section 7: Handling and Storage

Precautions for safe handling: Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals.

Conditions for safe storage: Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8: Exposure controls / Personal Protection

Exposure Limits

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Definition:</th>
<th>Units:</th>
<th>Measure:</th>
<th>Authority:</th>
<th>Jurisdiction:</th>
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<tbody>
<tr>
<td>Sublimed Sulfur</td>
<td>TWA: 10</td>
<td></td>
<td></td>
<td></td>
<td>[Canada] Inhalation Nuisance Dus</td>
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<tr>
<td></td>
<td>STEL</td>
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<tr>
<td>Sublimed Sulfur</td>
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<td></td>
<td>15</td>
<td>mg/m³</td>
<td>OSHA (PEL) [United States]</td>
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<tr>
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<tr>
<td>Sublimed Sulfur</td>
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<td>5</td>
<td>mg/m³</td>
<td>OSHA (PEL) [United States]</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Inhalation Respirable.</td>
</tr>
</tbody>
</table>

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in case of a Large Spill: Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid

Odor: Odorless. Pure Sulfur is odorless, but traces of hydrocarbon impurity may impart an oily and/or rotten egg odor.

Taste: Tasteless. Faint taste

Molecular Weight: 32.06 g/mole
Section 10: Stability and Reactivity Data

- **Possibility of hazardous reactions:** No data available
- **Chemical Stability:** The product is stable
- **Conditions to avoid:** Heat, ignition sources, incompatible materials
- **Incompatible materials:** Reactive with oxidizing agents, metals.
- **Hazardous decomposition products:** No data available

Section 11: Toxicological Information

- **Routes of Entry:** Inhalation. Ingestion.
- **Potential Acute Health Effects:** No data available
- **Potential Chronic Health Effects:** No data available
- **Chronic Effects on Humans:** May cause damage to the following organs: upper respiratory tract, skin.
- **Special Remarks on Chronic Effects On Humans:** No data available
- **Other Toxic Effects on Humans:** Slightly Hazardous in case of inhalation (lung irritant). Slightly hazardous in case of skin contact (irritant), of ingestion.
- **Special Remarks on Other Toxic Effects on Humans:** Acute Potential Health Effects: Skin: May cause skin irritation or rash. Eyes: May cause eye irritation with tearing, burning, scratchy discomfort, and blurring of vision, and possible eye damage (damage to the lens, formation of opacities, cataracts, and focal chorioretinitis. Inhalation: Breathing sulfur can irritate the nose, throat, lungs, causing coughing, wheezing, sneezing, and/or shortness of breath/dyspnea. It may cause inflammation in the respiratory tract resulting in tracheobronchitis, inflammation of nasal mucosa with increased secretions, pulmonary edema, pneumonia, Ingestion: May cause...
Section 12: Ecological Information

**Ecotoxicity:**
Ecotoxicity in water (LC50): 10000 ppm 96 hours [Fish (Mosquito fish)].

**Persistence and degradability:**
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Bioaccumulative potential:**
The product itself and its products of degradation are not toxic.

**Mobility in soil:**
No data available

**Other adverse effects:**
No data available

Section 13: Disposal Considerations

**Waste Disposal:**
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transportation Information

**DOT Classification**
DOT CLASS 4.1
Flammable solids, self-reactive substances and solid desensitized explosives
Solids which, under conditions encountered in transport, are readily combustible or may cause or contribute to fire through friction; self-reactive substances which are liable t
Section 15: Other Regulatory Information

Federal and State Regulations: Connecticut hazardous material survey: Sulfur Flour Rhode Island RTK hazardous substances: Sulfur Flour Pennsylvania RTK: Sulfur Flour Massachusetts RTK: Sulfur Flour New Jersey: Sulfur Flour California Director’s List of Hazardous Substances: Sulfur Flour TSCA 8(b) inventory: Sulfur Flour

California Proposition 65 Warnings: No data available


Section 16: Other Information

MSDS Code: SU171X

References: No data available

Other Special Considerations: No data available

Authored

Digital signature by Justin Yu
Date: 2018.01.12 17:01:12 -08'00'