

# Sulfur

## SECTION 1. IDENTIFICATION

<b>Product Identifier</b>	Sulfur
<b>Other Means of Identification</b>	Flowers of sulfur, Sublimed sulfur
<b>Product Code(s)</b>	SU6010, SU6012, SU6015
<b>Product Family</b>	Inorganic Solid
<b>Recommended Use</b>	Industrial.
<b>Restrictions on Use</b>	None known.
<b>Supplier Identifier</b>	Alphachem Limited, 2485 Milltower Court, Mississauga, Ontario, L5N 5Z6, (905) 821-2995
<b>Emergency Phone No.</b>	CANUTECH CANADA, 613-996-6666, 24 Hours
<b>SDS No.</b>	0561

## SECTION 2. HAZARD IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015) and the US Hazard Communication Standard (HCS 2012).

### Classification

Flammable solid - Category 2; Acute toxicity (Dermal) - Category 4; Skin irritation - Category 2; Eye irritation - Category 2A; Specific target organ toxicity (single exposure) - Category 3

### Label Elements



Signal Word:  
Danger

### Hazard Statement(s):

Flammable solid.  
May be harmful if swallowed.  
Causes serious eye irritation.  
May cause respiratory irritation.  
Causes skin irritation.

### Precautionary Statement(s):

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.  
Use only non-sparking tools.  
Wash hands and skin thoroughly after handling.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Use only outdoors or in a well-ventilated area.  
Response:

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IF ON SKIN: Wash with plenty of water.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Immediately call a POISON CENTRE or doctor.

Storage:

Store in a well-ventilated place. Keep container tightly closed.

Disposal:

Dispose of contents and container in accordance with local, regional, national and international regulations.

#### **Other Hazards**

None known.

### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance:

<b>Chemical Name</b>	<b>CAS No.</b>	<b>%</b>	<b>Other Identifiers</b>
SULFUR	7704-34-9	>99	Brimstone, Flowers of sulfur, Sublimed sulfur

### **SECTION 4. FIRST-AID MEASURES**

#### **First-aid Measures**

##### **Inhalation**

Remove source of exposure or move to fresh air. Keep at rest in a position comfortable for breathing. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor.

##### **Skin Contact**

Immediately wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 15-20 minutes. Immediately call a Poison Centre or doctor.

##### **Eye Contact**

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Immediately call a Poison Centre or doctor.

##### **Ingestion**

Do not induce vomiting. Rinse mouth with water. Immediately call a Poison Centre or doctor.

##### **First-aid Comments**

All first aid procedures should be periodically reviewed by a doctor familiar with the material and its condition of use in the workplace. Get medical advice or attention if you feel unwell or are concerned.

#### **Most Important Symptoms and Effects, Acute and Delayed**

If inhaled: can irritate the nose and throat. If in eyes: may cause moderate to severe irritation.

#### **Immediate Medical Attention and Special Treatment**

##### **Special Instructions**

General advice

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

### **SECTION 5. FIRE-FIGHTING MEASURES**

#### **Extinguishing Media**

##### **Suitable Extinguishing Media**

Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.

##### **Unsuitable Extinguishing Media**

Do not use a solid (straight) water stream as it may scatter and spread fire.

#### **Specific Hazards Arising from the Product**

Combustible dust. May form combustible dust concentration in air. Heating increases the release of toxic vapour.

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Closed containers may rupture violently when heated releasing contents.  
In a fire, the following hazardous materials may be generated: corrosive sulfur oxides.

### **Special Protective Equipment and Precautions for Fire-fighters**

Use extreme caution. Fight fire from a protected, explosion-resistant location or maximum distance possible. Approach fire from upwind to avoid hazardous vapours or gases. Dust explosion hazard. Use water spray or fog to prevent dust formation and minimize risk of explosion. Knock down vapours or gases with water fog or fine water spray. For a massive fire, immediately evacuate the area and use unmanned hose holder or monitor nozzles. Dike and recover contaminated water for appropriate disposal.

Chemical protective clothing (e.g. chemical splash suit) and positive pressure SCBA may be necessary.

## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

### **Personal Precautions, Protective Equipment, and Emergency Procedures**

Emergency responders: use the personal protective equipment recommended in Section 8 of this safety data sheet. Increase ventilation to area or move leaking container to a well-ventilated and secure area. Eliminate all ignition sources. Use grounded, explosion-proof equipment. Remove or isolate incompatible materials as well as other hazardous materials.

### **Environmental Precautions**

Do not allow into any sewer, on the ground or into any waterway.

### **Methods and Materials for Containment and Cleaning Up**

Avoid generating dust.

Small spills or leaks: collect using shovel/scoop or approved HEPA vacuum and place in a suitable container for disposal.

Large spills or leaks: avoid dry sweeping. If necessary, use a dust suppressant such as water. Do not use compressed air for clean-up.

## **SECTION 7. HANDLING AND STORAGE**

### **Precautions for Safe Handling**

Wear personal protective equipment to avoid direct contact with this chemical. Avoid generating vapours or mists. Avoid generating dusts. Only use where there is adequate ventilation. Eliminate heat and ignition sources such as sparks, open flames, hot surfaces and static discharge. Post "No Smoking" signs. Use non-sparking tools. Prevent accidental contact with incompatible chemicals.

### **Conditions for Safe Storage**

Store in an area that is: cool, dry, well-ventilated, out of direct sunlight and away from heat and ignition sources, separate from incompatible materials (see Section 10: Stability and Reactivity), clear of combustible and flammable materials (e.g. old rags, cardboard). Protect from conditions listed in Conditions to Avoid in Section 10 (Stability and Reactivity). Store in a closed container.

## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **Control Parameters**

Not available.

Consult local authorities for provincial exposure limits. Consult local authorities for state exposure limits.

### **Appropriate Engineering Controls**

Use local exhaust ventilation and enclosure, if necessary, to control amount in the air. Provide eyewash and safety shower if contact or splash hazard exists.

### **Individual Protection Measures**

#### **Eye/Face Protection**

Wear chemical safety goggles and face shield when contact is possible.

#### **Skin Protection**

Wear chemical protective clothing e.g. gloves, aprons, boots.

#### **Respiratory Protection**

Wear a NIOSH approved air-purifying respirator with an appropriate cartridge.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### Basic Physical and Chemical Properties

<b>Appearance</b>	Yellow lumps.
<b>Odour</b>	Rotten eggs
<b>Odour Threshold</b>	Not available
<b>pH</b>	Not available
<b>Melting Point/Freezing Point</b>	119 °C (246 °F) (melting); 119 °C (246 °F) (freezing)
<b>Initial Boiling Point/Range</b>	445 °C (833 °F)
<b>Flash Point</b>	207 °C (405 °F) (closed cup)
<b>Evaporation Rate</b>	Not available
<b>Flammability (solid, gas)</b>	Not available
<b>Upper/Lower Flammability or Explosive Limit</b>	6.38% (upper); 0.17% (lower)
<b>Vapour Pressure</b>	1 - 8 mm Hg (0 - 1 kPa)
<b>Vapour Density (air = 1)</b>	Not available
<b>Relative Density (water = 1)</b>	2.07
<b>Solubility</b>	Insoluble in water; Not available (in other liquids)
<b>Partition Coefficient, n-Octanol/Water (Log Kow)</b>	Not available
<b>Auto-ignition Temperature</b>	240 °C (464 °F)
<b>Decomposition Temperature</b>	Not available
<b>Viscosity</b>	Not available (kinematic); Not available (dynamic)
<b>Other Information</b>	
<b>Physical State</b>	Solid
<b>Other Physical Property 1</b>	Above vapour pressures measured at 246 deg C (for 8 mmHg) and 183.8 deg C (for 1 mmHg).
<b>Other Physical Property 2</b>	Above Relative Density measured at 21.1 deg C.

## SECTION 10. STABILITY AND REACTIVITY

### Reactivity

None known.

### Chemical Stability

Normally stable.

### Possibility of Hazardous Reactions

None known.

### Conditions to Avoid

Open flames, sparks, static discharge, heat and other ignition sources.

### Incompatible Materials

Oxidizing agents (e.g. peroxides), metals (e.g. aluminum), ammonia.

### Hazardous Decomposition Products

Corrosive sulfur oxides.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

### Acute Toxicity

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Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
SULFUR	9.23 mg/L (rat) (4-hour exposure)	> 2000 mg/kg (rat)	> 2000 mg/kg (rabbit)

#### Skin Corrosion/Irritation

There is limited evidence of moderate or severe irritation.

#### Serious Eye Damage/Irritation

Causes serious eye irritation based on skin irritation information.

#### STOT (Specific Target Organ Toxicity) - Single Exposure

##### Inhalation

May cause nose and throat irritation.

##### Ingestion

May be harmful irritation of the mouth, throat and stomach. Symptoms may include nausea, vomiting, stomach cramps and diarrhea.

#### Aspiration Hazard

No information was located.

#### STOT (Specific Target Organ Toxicity) - Repeated Exposure

No information was located.

#### Respiratory and/or Skin Sensitization

No information was located.

#### Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
SULFUR	Not Listed	Not Listed	Not Listed	Not Listed

#### Reproductive Toxicity

##### Development of Offspring

No information was located.

##### Sexual Function and Fertility

No information was located.

##### Effects on or via Lactation

No information was located.

#### Germ Cell Mutagenicity

No information was located.

#### Interactive Effects

No information was located.

## SECTION 12. ECOLOGICAL INFORMATION

This section is not required by WHMIS. This section is not required by OSHA HCS 2012.

## SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal Methods

Dispose of contents and container in accordance with local, regional, national and international regulations.

## SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group

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US DOT	UN1350	Sulfur	4.1	III
Canadian TDG	UN1350	Sulfur	4.1	III
IATA (Air)	UN1350	Sulfur	4.1	III
IMO (Marine)	UN1350	Sulfur	4.1	III

**Special Precautions** Not applicable

**Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

## SECTION 15. REGULATORY INFORMATION

### Safety, Health and Environmental Regulations

#### Canada

##### Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

Listed on the DSL.

#### USA

##### Toxic Substances Control Act (TSCA) Section 8(b)

Listed on the TSCA Inventory.

## SECTION 16. OTHER INFORMATION

**NFPA Rating** Health - 2 Flammability - 2 Instability - 0

**SDS Prepared By** Alphachem Limited

**Phone No.** (905)-821-2995

**Date of Preparation** May 31, 2016

**Date of Last Revision** August 10, 2016

**References** CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). Battelle & Renwick database.

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