



Cambridge Isotope Laboratories, Inc.  
50 Frontage Road  
Andover, MA 01810

Number:  
Issue Date

SLM-4225  
12/28/10

Page 1 of 8

## MATERIAL SAFETY DATA SHEET

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### 1 CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Description SULFUR-33 METAL (33S)

Cambridge Isotope Laboratories, Inc.  
50 Frontage Rd  
ANDOVER, MA 01810  
USA

E-mail [cilsales@isotope.com](mailto:cilsales@isotope.com)  
Web Site [www.isotope.com](http://www.isotope.com)

#### Phone Numbers

Emergency Contact Chemtrec  
Emergency Phone 1-800-424-9300 (24 hours)  
  
Customer Service 1-800-322-1174 (8:30-5:30 EST)  
Phone  
Transportation 1-202-483-7616 (24 hours)

### 2 HAZARDS IDENTIFICATION

#### OSHA Hazards

Flammable solid

#### GHS Label Information

Signal Word Warning

#### Hazards Identification

Flame

#### Hazard Statement(s)

Flammable solid.  
May be harmful if swallowed or in contact with skin.  
May be harmful if inhaled.

#### Precautionary Statement(s)

Keep away from heat/sparks/open flames/hot surfaces- No smoking.

#### HMIS Ratings

Physical 2  
Flammability 1  
Health 1



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SLM-4225  
12/28/10

Page 2 of 8

## MATERIAL SAFETY DATA SHEET

---

### NFPA Codes

Fire	1
Health	1
Reactivity	2

### Potential Health Effects

Eyes	Contact may cause eye irritation.
Ingestion	May be harmful if swallowed.
Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.

### 3 COMPOSITION / INFORMATION ON INGREDIENTS

#### Composition / Information on Ingredients

Chemical Formula	S
Molecular Weight	32.97
CAS No.	14257-58-0
EC No.	231-722-6

### 4 FIRST AID MEASURES

#### First Aid Measures

Eyes	Flush eyes with water as a precaution.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Inhalation	If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
Skin	Wash off with soap and plenty of water. Consult a physician.
Additional Information	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

### 5 FIRE FIGHTING MEASURE

#### Fire Fighting Measures

Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.
Fire Fighting Equipment	Wear self contained breathing apparatus for fire fighting if necessary.



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Number:  
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SLM-4225  
12/28/10

Page 3 of 8

## MATERIAL SAFETY DATA SHEET

---

Fire Fighting Procedures      Use water spray to cool unopened containers.

### 6 ACCIDENTAL RELEASE MEASURES

#### Accidental Release Measures

Personal Precautions      Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Remove all sources of ignition. 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      Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

### 7 HANDLING AND STORAGE

#### Precautions for Safe Handling

Handling      Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Keep away from combustible material.

#### Conditions for Safe Storage

Storage      Store at room temperature away from light and moisture.

### 8 EXPOSURE CONTROL / PERSONAL PROTECTION

#### Personal Protection

Eyes - Face      Wear safety glasses with side shields (or goggles) and a face shield.

Skin      Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory      When appropriate, use NIOSH/CEN approved respirator.

Protective Clothing      Wear suitable protective clothing and gloves.

Work Hygienic Practices      Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.



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Page 4 of 8

## MATERIAL SAFETY DATA SHEET

---

### 9 PHYSICAL AND CHEMICAL PROPERTIES

#### Physical and Chemical Properties

Form	Flakes
Color	Light yellow
Odor	Slight
pH	No data available
Melting Point	117 - 120 °C (243 - 248 °F) - lit
Boiling Point	444.7 °C (832.5 °F) - lit
Flashpoint	168 °C (334 °F) - closed cup
Flammability	Solid, gas. (The substance or mixture is a flammable solid w/ the subcategory 2.
Lower Explosion Limit	0.17% (V)
Upper Explosion Limit	6.83% (V)
Vapor Pressure	10 hPa (8mmHg) at 246 °C (475 °F)
Density	2.05 g/cm <sup>3</sup> at 20 °C (68 °F)
Solubility in Water	Insoluble
Auto Ignition Temperature	232 °C (450 °F)
Viscosity	8 mm <sup>2</sup> /s at 140 °C (284 °F)

### 10 STABILITY AND REACTIVITY

#### Stability and Reactivity

Chemical Stability	Stable if stored under recommended conditions.
Conditions to Avoid	Avoid Heat, Flames and Sparks.
Hazardous decomposition products	Hazardous decomposition products formed under fire conditions. - Sulphur oxides
Materials to avoid	Strong oxidizing agents, Amines, Bases

### 11 TOXICOLOGICAL INFORMATION

#### Acute Toxicity



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Number:  
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SLM-4225  
12/28/10

Page 5 of 8

## MATERIAL SAFETY DATA SHEET

---

LC50 Inhalation Rat	4 h - > 9.23 mg/l
LD50 Dermal Rabbit	> 2,000 mg/kg
LD50 Oral Rat	> 2,000 mg/kg
LD50 Oral Rabbit	175 mg/kg
Serious Damage/Eye Irritation	Eyes - rabbit - No eye irritation
Skin Corrosion/Irritation	Skin - rabbit - No skin irritation
Inhalation	No data available
Respiratory or Skin Sensitization	Not available
Germ Cell Mutagenicity	Not available
IARC	No component of the product present at levels greater than or equal to 0.1 % is identifiable 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 identifiable 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.
Reproductive Toxicity	Not available
Specific Target Organ Toxicity	
Single Exposure	No data available.
Repeated Exposure	No data available.
Signs and Symptoms of Exposure	
Burning sensation	
Cough	
Wheezing	
Laryngitis	
Shortness of breath	
Headache	
Nausea	
Vomiting	
Dermatitis	



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Number:  
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SLM-4225  
12/28/10

Page 6 of 8

## MATERIAL SAFETY DATA SHEET

---

### Other Information

RTECS                      WS4250000

### 12 ECOLOGICAL INFORMATION

#### Toxicity

Toxicity to Fish                      Oncorhynchus mykiss (rainbow trout) - > 180 mg/l - 96 h  
LC50

Toxicity to Daphnia                      Daphnia magna (Water flea) - > 5,000 mg/l - 48 h  
and Other Aquatic  
Invertebrates EC50

Persistence and                      Not available  
Degradability

Bioaccumulative                      Not available  
Potential

Mobility in Soil                      Not available

PBT and vPvB                      Not available  
Assessment

Other Adverse                      Not available  
Effects

### 13 DISPOSAL CONSIDERATIONS

#### Disposal Considerations

Product Disposal                      Waste materials should be disposed of under conditions which meet Federal, State, and Local  
environmental control regulations.

### 14 TRANSPORT INFORMATION

#### Transportation Information-DOT/IATA/IMDG

UN Number                      1350  
Proper Shipping                      Sulfur  
Name  
Hazard Class                      4.1  
Packing Group                      III



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Number:  
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SLM-4225  
12/28/10

Page 7 of 8

## MATERIAL SAFETY DATA SHEET

---

Marine Pollutant      No  
Poison Inhalation    No  
Hazard

### 15 REGULATORY INFORMATION

#### Regulatory Information

Flammable solid

#### SARA

Sara 302                      No chemicals in this material are subject to the reporting requirements.  
Component

Sara 313                      No chemicals in this material are subject to the reporting requirements.  
Component

#### SARA 311/312 Hazards

Fire (Y/N)                  Y

#### STATE REGULATIONS

Massachusetts            Yes  
Right to Know

Pennsylvania Right      Yes  
to Know

New Jersey Right        Yes  
to Know

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

#### Canada

DSL Status                    All components of this product are on the Canadian DSL list.

#### EU

Hazard                         Flammable

#### Safety Statements

Keep away from sources of ignition - No smoking.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

#### Risk Statements

Highly flammable.



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Number:  
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SLM-4225  
12/28/10

Page 8 of 8

## MATERIAL SAFETY DATA SHEET

---

### 16 OTHER INFORMATION

**Additional MSDS Information**      This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

**Approved On**                      12/28/10  
**Version Number**                1