SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture
Product Name: Molten Sulfur
Synonyms: Brimstone, Flowers of sulfur, Sulphur

Intended Use of the Product
Manufacturing sulfuric acid, sulfur dioxide, fertilizer, carbon disulfide, plastics, enamels, vulcanizing rubber, synthesizing dyes, bleaching wood pulp.

Name, Address, and Telephone of the Responsible Party

Manufacturer
CHEMTRADE LOGISTICS INC.
155 Gordon Baker Road
Suite 300
Toronto, Ontario M2H 3N5
For SDS Info: (416) 496-5856
www.chemtradelogistics.com

Emergency Telephone Number
Emergency Number :
Canada: CANUTEC +1-613-996-6666 / US: CHEMTREC +1-800-424-9300
INTERNATIONAL: +1-703-741-5970
Chemtrade Emergency Contact: (866) 416-4404
For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification
Flam. Sol. 2 H228
Skin Irrit. 2 H315
Aquatic Acute 2 H401
Comb. Dust

Full text of hazard classes and H-statements : see section 16

Label Elements

GHS Labeling
Hazard Pictograms :

Signal Word : Warning
Hazard Statements : May form combustible dust concentrations in air.
H228 - Flammable solid.
H315 - Causes skin irritation.
H401 - Toxic to aquatic life.

Precautionary Statements : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical, ventilating, and lighting equipment.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, and eye protection.
P302+P352 - IF ON SKIN: Wash with plenty of water.
P321 - Specific treatment (see section 4 on this SDS).
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Supplemental Information: Proper grounding procedures to avoid static electricity should be followed. Prevent dust accumulation (to minimize explosion hazard). Avoid generating dust.

Other Hazards
Although this SDS was prepared to address the hazards of molten sulfur, the product transforms into a solid rapidly upon cooling. This document primarily addresses the hazards of the molten state of sulfur, however the non-molten state is also addressed in certain cases. Molten when shipped above melting point 113°C (235.4°F), brittle solid below melting point. Solid particles of sulfur present a combustible dust hazard, and in the right conditions can cause an explosion with sparks, or an ignition source. Product is heated when in molten form, and in contact with an ignition source may present a fire or explosion hazard. Keep product away from sparks, open flames, incompatibilities, and all ignition sources. Risk of thermal burns on contact with molten product. Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

Unknown acute toxicity
No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Product Identifier</th>
<th>%*</th>
<th>GHS Ingredient Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfur</td>
<td>(CAS No) 7704-34-9</td>
<td>99.5 - 100</td>
<td>Flam. Sol. 2, H228, Skin Irrit. 2, H315, Comb. Dust</td>
</tr>
<tr>
<td>Hydrogen sulfide</td>
<td>(CAS No) 7783-06-4</td>
<td>0.1 - 0.5</td>
<td>Flam. Gas 1, H220, Liquefied gas, H280, Acute Tox. 2 (Inhalation:gas), H330, Eye Irrit. 2A, H319, STOT SE 3, H335, Aquatic Acute 1, H400</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

SECTION 4: FIRST AID MEASURES

Description of First-aid Measures
General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: If skin irritation occurs: Get medical advice/attention. Remove contaminated clothing. Drench affected area with water for at least 15 minutes. In molten form: Cool skin rapidly with cold water after contact with molten product. Removal of solidified molten material from skin requires medical assistance. Wash contaminated clothing before reuse.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention. Protect skin and eyes from contact with molten material.

Ingestion: Rinse mouth. Do not induce vomiting. Obtain emergency medical attention.

Most Important Symptoms and Effects Both Acute and Delayed
General: Risk of thermal burns on contact with molten product. In solid form: Causes skin irritation.

Inhalation: Inhalation of vapors may cause respiratory irritation. WARNING: irritating and toxic hydrogen sulfide gas may be present. Greater than 15-20ppm continuous exposure can cause mucous membrane and respiratory tract irritation. 50-500 ppm can cause headache, nausea, and dizziness. Continued exposure at these levels can lead to loss of reasoning and balance, difficulty in breathing, fluid in the lungs, and possible loss of consciousness. Greater than 500ppm can cause rapid unconsciousness and death if not promptly revived.
**Molten Sulfur**

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**Skin Contact:** Risk of thermal burns on contact with molten product. In solid form: Redness, pain, swelling, itching, burning, dryness, and dermatitis.

**Eye Contact:** Risk of thermal burns on contact with molten product. In solid form: May cause slight irritation to eyes.

**Ingestion:** Ingestion of the molten product may cause severe thermal burns. In solid form: Ingestion is likely to be harmful or have adverse effects.

**Chronic Symptoms:** Contains a small amount of Hydrogen Sulfide, symptoms of chronic exposure that may manifest as long-term or permanent effects are: headaches, dizziness, nausea, coughing, respiratory irritation, eye irritation, skin irritation, pain in the nose, and loss of consciousness.

**Indication of Any Immediate Medical Attention and Special Treatment Needed**

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

**SECTION 5: FIRE-FIGHTING MEASURES**

**Extinguishing Media**

**Suitable Extinguishing Media:** Dry chemical, carbon dioxide, foam, water spray.

**Unsuitable Extinguishing Media:** Apply aqueous extinguishing media carefully to prevent frothing/steam explosion. Do not use a heavy water stream. Use of heavy stream of water may spread fire.

**Special Hazards Arising From the Substance or Mixture**

**Fire Hazard:** Flammable solid. Sulfur burns with a pale blue flame that may be difficult to see in daylight. Flammable vapors can accumulate in head space of closed systems.

**Explosion Hazard:** Product is not explosive, however, formation of explosive air-vapor mixture is possible. Water vapor and sulfuric acid vapors may develop in sealed containers from extreme heat exposure producing an explosion hazard. In solid form: Dust explosion hazard in air.

**Reactivity:** Reacts violently with strong oxidizers. Increased risk of fire or explosion.

**Advice for Firefighters**

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

**Protection During Fighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** Sulfur dioxide. Sulfur oxides.

**Other Information:** If stored under heat for extended periods or significantly agitated, this material might evolve or release hydrogen sulfide, a flammable gas, which can raise and widen this material's actual flammability limits and significantly lower its auto-ignition temperature. Hydrogen sulfide is a toxic gas that can be fatal. It also has a rotten egg smell that causes odor fatigue very quickly and shouldn't be used as an indicator for the presence of gas. Do not allow run-off from fire-fighting to enter drains or water courses.

**Reference to Other Sections**

Refer to Section 9 for flammability properties.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

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

**General Measures:** Avoid all contact with skin, eyes, or clothing. Avoid breathing dust, or vapors. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.

**For Non-Emergency Personnel**

**Protective Equipment:** Use appropriate personal protective equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel. Stop leak if safe to do so.

**For Emergency Personnel**

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Ventilate area. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Eliminate ignition sources.

**Environmental Precautions**

Prevent entry to sewers and public waters. Avoid release to the environment.

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

**For Containment:** Contain solid spills with appropriate barriers and prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions.
Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. If melted: allow liquid to solidify before taking it up. In solid form: Eliminate all ignition sources. Avoid generation of dust during clean-up of spills. Recover the product by vacuuming, shoveling or sweeping. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

Reference to Other Sections
See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling
Additional Hazards When Processed: Risk of thermal burns on contact with molten product. Flammable vapors can accumulate in head space of closed systems. If stored under heat for extended periods or significantly agitated, this material might evolve or release hydrogen sulfide, a flammable gas, which can raise and widen this material’s actual flammability limits and significantly lower its auto-ignition temperature. Hydrogen sulfide is a toxic gas that can be fatal. It also has a rotten egg smell that causes odor fatigue very quickly and shouldn’t be used as an indicator for the presence of gas. Proper grounding procedures to avoid static electricity should be followed. Do not pressurize, cut, or weld containers. Avoid dust production. As a result of flow, agitation, etc., electrostatic charges can be generated. Accumulation and dispersion of dust with an ignition source can cause a combustible dust explosion. Keep dust levels to a minimum and follow applicable regulations.

Precautions for Safe Handling: Avoid contact with eyes, skin and clothing. Avoid breathing dust, or vapors. Take precautionary measures against static discharge. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat, drink or smoke in areas where product is used.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Handling this product may result in electrostatic accumulation. Use proper grounding procedures. Take action to prevent static discharges. Avoid creating or spreading dust. Use explosion-proof electrical, ventilating, and lighting equipment. Comply with applicable regulations.

Storage Conditions: Keep/Store away from direct sunlight, extremely high or low temperatures, ignition sources, and incompatible materials. Store in a well-ventilated place. Keep container tightly closed. Store in a dry, cool place. Keep in fireproof place.


Special Rules on Packaging: Contains Sulfur, may release small amounts of hydrogen sulfide. Hydrogen sulfide is a highly flammable, explosive gas under certain conditions, is a toxic gas, and may be fatal. Gas can accumulate in the headspace of closed containers, use caution when opening sealed containers. Heating the product or containers can cause thermal decomposition of the product and release hydrogen sulfide.

Specific End Use(s)
Manufacturing sulfuric acid, sulfur dioxide, fertilizer, carbon disulfide, plastics, enamels, vulcanizing rubber, synthesizing dyes, bleaching wood pulp.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters
For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

<table>
<thead>
<tr>
<th>Hydrogen sulfide (7783-06-4)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico OEL TWA (mg/m³)</td>
<td>14 mg/m³</td>
</tr>
<tr>
<td>Mexico OEL TWA (ppm)</td>
<td>10 ppm</td>
</tr>
<tr>
<td>Mexico OEL STEL (mg/m³)</td>
<td>21 mg/m³</td>
</tr>
<tr>
<td>Mexico OEL STEL (ppm)</td>
<td>15 ppm</td>
</tr>
<tr>
<td>USA ACGIH ACGIH TWA (ppm)</td>
<td>1 ppm</td>
</tr>
<tr>
<td>USA ACGIH ACGIH STEL (ppm)</td>
<td>5 ppm</td>
</tr>
<tr>
<td>USA OSHA OSHA PEL (Ceiling) (ppm)</td>
<td>20 ppm</td>
</tr>
<tr>
<td>USA NIOSH NIOSH REL (ceiling) (mg/m³)</td>
<td>15 mg/m³</td>
</tr>
<tr>
<td>USA NIOSH NIOSH REL (ceiling) (ppm)</td>
<td>10 ppm</td>
</tr>
<tr>
<td>USA IDLH US IDLH (ppm)</td>
<td>100 ppm</td>
</tr>
</tbody>
</table>
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Alberta OEL Ceiling (mg/m³) 21 mg/m³
Alberta OEL Ceiling (ppm) 15 ppm
Alberta OEL TWA (mg/m³) 14 mg/m³
Alberta OEL TWA (ppm) 10 ppm
British Columbia OEL Ceiling (ppm) 10 ppm
Manitoba OEL STEL (ppm) 5 ppm
Manitoba OEL TWA (ppm) 1 ppm
New Brunswick OEL STEL (mg/m³) 21 mg/m³
New Brunswick OEL STEL (ppm) 15 ppm
New Brunswick OEL TWA (mg/m³) 14 mg/m³
New Brunswick OEL TWA (ppm) 10 ppm
Newfoundland & Labrador OEL STEL (ppm) 5 ppm
Newfoundland & Labrador OEL TWA (ppm) 1 ppm
Nova Scotia OEL STEL (ppm) 5 ppm
Nova Scotia OEL TWA (ppm) 1 ppm
Nunavut OEL STEL (ppm) 15 ppm
Nunavut OEL TWA (ppm) 10 ppm
Northwest Territories OEL STEL (ppm) 15 ppm
Northwest Territories OEL TWA (ppm) 10 ppm
Ontario OEL STEL (ppm) 15 ppm
Ontario OEL TWA (ppm) 10 ppm
Prince Edward Island OEL STEL (ppm) 5 ppm
Prince Edward Island OEL TWA (ppm) 1 ppm
Québec VECD (mg/m³) 21 mg/m³
Québec VECD (ppm) 15 ppm
Québec VEMP (mg/m³) 14 mg/m³
Québec VEMP (ppm) 10 ppm
Saskatchewan OEL STEL (ppm) 15 ppm
Saskatchewan OEL TWA (ppm) 10 ppm
Yukon OEL STEL (mg/m³) 27 mg/m³
Yukon OEL STEL (ppm) 15 ppm
Yukon OEL TWA (mg/m³) 15 mg/m³
Yukon OEL TWA (ppm) 10 ppm

Sulfur (7704-34-9)
Alberta OEL TWA (mg/m³) 10 mg/m³

Exposure Controls
Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Gas detectors should be used when flammable gases/vapors may be released. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof equipment. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection devices. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed. Ensure all national/local regulations are observed.

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**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Opaque liquid when shipped, brittle solid below melting point. Bright yellow to brown.</td>
</tr>
<tr>
<td>Odor</td>
<td>Rotten eggs</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Melting Point</td>
<td>114 - 119 °C (237.2 - 246.2 °F)</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>444.6 °C (832.28 °F)</td>
</tr>
<tr>
<td>Flash Point</td>
<td>207 °C (404.6 °F) Pensky-Martens Closed Cup</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>232 °C (449.6 °F)</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Flammable solid</td>
</tr>
<tr>
<td>Lower Flammable Limit</td>
<td>4 %</td>
</tr>
<tr>
<td>Upper Flammable Limit</td>
<td>44 %</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>0.015 kPa (0.11 mm Hg)</td>
</tr>
<tr>
<td>Relative Vapor Density at 20°C</td>
<td>3.64 [Air = 1]</td>
</tr>
<tr>
<td>Relative Density</td>
<td>Not available</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.79</td>
</tr>
<tr>
<td>Partition Coefficient: N-Octanol/Water</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>Dust Explosion Hazard</td>
</tr>
</tbody>
</table>

**SECTION 10: STABILITY AND REACTIVITY**

**Reactivity:** Reacts violently with strong oxidizers. Increased risk of fire or explosion.

**Chemical Stability:** Stable under recommended handling and storage conditions (see section 7).

**Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

**Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, heat, hot surfaces, sparks, open flames, incompatible materials, and other ignition sources. Dust accumulation (to minimize explosion hazard).

**Incompatible Materials:** Strong oxidizers. Under certain conditions: Sodium, tin, nickel, zinc.

**Hazardous Decomposition Products:** Molten sulfur can react with hydrocarbons to form hydrogen sulfide and carbon disulfide.

**SECTION 11: TOXICOLOGICAL INFORMATION**

Information on Toxicological Effects - Product
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**Acute Toxicity (Oral):** Not classified
**Acute Toxicity (Dermal):** Not classified
**Acute Toxicity (Inhalation):** Not classified
**LD50 and LC50 Data:** Not available
**Skin Corrosion/Irritation:** Causes skin irritation.
**pH:** Not applicable
**Eye Damage/Irritation:** Not classified
**pH:** Not applicable
**Respiratory or Skin Sensitization:** Not classified
**Germ Cell Mutagenicity:** Not classified
**Carcinogenicity:** Not classified
**Specific Target Organ Toxicity (Repeated Exposure):** Not classified
**Reproductive Toxicity:** Not classified
**Specific Target Organ Toxicity (Single Exposure):** Not classified
**Aspiration Hazard:** Not classified
**Symptoms/Effects After Inhalation:** Inhalation of vapors may cause respiratory irritation. WARNING: irritating and toxic hydrogen sulfide gas may be present. Greater than 15-20ppm continuous exposure can cause mucous membrane and respiratory tract irritation. 50-500 ppm can cause headache, nausea, and dizziness. Continued exposure at these levels can lead to loss of reasoning and balance, difficulty in breathing, fluid in the lungs, and possible loss of consciousness. Greater than 500ppm can cause rapid unconsciousness and death if not promptly revived.
**Symptoms/Effects After Skin Contact:** Risk of thermal burns on contact with molten product. In solid form: Redness, pain, swelling, itching, burning, dryness, and dermatitis.
**Symptoms/Effects After Eye Contact:** Risk of thermal burns on contact with molten product. In solid form: May cause slight irritation to eyes.
**Symptoms/Effects After Ingestion:** Ingestion of the molten product may cause severe thermal burns. In solid form: Ingestion is likely to be harmful or have adverse effects.
**Chronic Symptoms:** Contains a small amount of Hydrogen Sulfide, symptoms of chronic exposure that may manifest as long-term or permanent effects are: headaches, dizziness, nausea, coughing, respiratory irritation, eye irritation, skin irritation, pain in the nose, and loss of consciousness.

**Information on Toxicological Effects - Ingredient(s)**

<table>
<thead>
<tr>
<th>LD50 and LC50 Data:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen sulfide (7783-06-4)</td>
</tr>
<tr>
<td>LC50 Inhalation Rat</td>
</tr>
<tr>
<td>Sulfur (7704-34-9)</td>
</tr>
<tr>
<td>LD50 Oral Rat</td>
</tr>
<tr>
<td>LD50 Dermal Rabbit</td>
</tr>
<tr>
<td>LC50 Inhalation Rat</td>
</tr>
</tbody>
</table>

**SECTION 12: ECOLOGICAL INFORMATION**

**Toxicity**
**Ecology - General:** Toxic to aquatic life.

<table>
<thead>
<tr>
<th>Hydrogen sulfide (7783-06-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 Fish 1</td>
</tr>
<tr>
<td>LC50 Fish 2</td>
</tr>
<tr>
<td>Sulfur (7704-34-9)</td>
</tr>
<tr>
<td>LC50 Fish 1</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
<tr>
<td>LC50 Fish 2</td>
</tr>
</tbody>
</table>

**Persistence and Degradability**
**Molten Sulfur**
**Persistence and Degradability** | Not established.
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Bioaccumulative Potential

Bioaccumulative Potential Not established.

Hydrogen sulfide (7783-06-4)

BCF Fish 1 (no bioaccumulation expected)

Log Pow 0.45 (at 25 °C)

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations

Additional Information: Do not pressurize, cut, or weld containers. Handle empty containers with care because residual product is flammable. Empty containers should be taken for recycle, recovery or waste in accordance with local regulation.

Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

<table>
<thead>
<tr>
<th>TRANSPORTATION CLASSIFICATION</th>
<th>DOT</th>
<th>TDG</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification Number</td>
<td>NA2448</td>
<td>UN2448</td>
<td>UN2448</td>
<td>UN2448</td>
</tr>
<tr>
<td>Proper Shipping Name</td>
<td>SULFUR, MOLTEN</td>
<td>MOLTEN SULFUR</td>
<td>SULPHUR, MOLTEN</td>
<td>SULPHUR, MOLTEN</td>
</tr>
<tr>
<td>Transport Hazard Class(es)</td>
<td>9</td>
<td>4.1</td>
<td>4.1</td>
<td>4.1</td>
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<tr>
<td>Environment Hazards</td>
<td>Marine Pollutant : No</td>
<td>Marine Pollutant : No</td>
<td>Marine Pollutant : No</td>
<td>Marine Pollutant: N/A</td>
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<tr>
<td>Emergency Response</td>
<td>ERG Number : 133</td>
<td>ERAP Index: Not applicable</td>
<td>EMS: F-A, S-H</td>
<td>ERG code (IATA): 3L</td>
</tr>
<tr>
<td>Additional Information</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

<table>
<thead>
<tr>
<th>Chemical Name (CAS No.)</th>
<th>CERCLA RQ</th>
<th>EPCRA 304 RQ</th>
<th>SARA 302 TPQ</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfur (7704-34-9)</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>No</td>
</tr>
</tbody>
</table>

SARA 311/312

Molten Sulfur
Immediate (acute) health hazard. Fire hazard. Delayed (chronic) health hazard. Sudden release of pressure hazard

US TSCA Flags Not present

US State Regulations

California Proposition 65

<table>
<thead>
<tr>
<th>Chemical Name (CAS No.)</th>
<th>Carcinogenicity</th>
<th>Developmental Toxicity</th>
<th>Female Reproductive Toxicity</th>
<th>Male Reproductive Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfur (7704-34-9)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
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State Right-To-Know Lists

**Hydrogen sulfide (7783-06-4)**
- U.S. - Massachusetts - Right To Know List - Yes
- U.S. - New Jersey - Right to Know Hazardous Substance List - Yes
- U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - Yes
- U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No
- U.S. - Pennsylvania - RTK (Right to Know) List - Yes

**Sulfur (7704-34-9)**
- U.S. - Massachusetts - Right To Know List - Yes
- U.S. - New Jersey - Right to Know Hazardous Substance List - Yes
- U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - No
- U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No
- U.S. - Pennsylvania - RTK (Right to Know) List - Yes

Canadian Regulations

**Hydrogen sulfide (7783-06-4)**
- Listed on the Canadian DSL (Domestic Substances List)
- Not listed on the Canadian NDSL (Non-Domestic Substances List)

**Sulfur (7704-34-9)**
- Listed on the Canadian DSL (Domestic Substances List)
- Not listed on the Canadian NDSL (Non-Domestic Substances List)

International Inventories/Lists

<table>
<thead>
<tr>
<th>Chemical Name (CAS No.)</th>
<th>Australia AICS</th>
<th>Turkey CICR</th>
<th>Korea ECL</th>
<th>EU EINECS</th>
<th>EU ELINCS</th>
<th>EU SVHC</th>
<th>EU NLP</th>
<th>Mexico INSQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfur (7704-34-9)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name (CAS No.)</th>
<th>China IECSC</th>
<th>Japan ENCS</th>
<th>Japan ISHL</th>
<th>Japan PDSCL</th>
<th>Japan PRTR</th>
<th>Philippines PICCS</th>
<th>New Zealand NZIOC</th>
<th>US TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfur (7704-34-9)</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date: 05/07/2018

Revision Summary

<table>
<thead>
<tr>
<th>Section</th>
<th>Change</th>
<th>Date Changed</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>HPR trade secret statement</td>
<td>05/07/2018</td>
</tr>
</tbody>
</table>

Other Information: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada’s Hazardous Products Regulations (HPR).

GHS Full Text Phrases:

- **Acute Tox. 2 (Inhalation:gas)**: Acute toxicity (inhalation:gas) Category 2
- **Aquatic Acute 1**: Hazardous to the aquatic environment - Acute Hazard Category 1
- **Aquatic Acute 2**: Hazardous to the aquatic environment - Acute Hazard Category 2
- **Comb. Dust**: Combustible Dust
- **Eye Irrit. 2A**: Serious eye damage/eye irritation Category 2A
- **Flam. Gas 1**: Flammable gases Category 1
- **Flam. Sol. 2**: Flammable solids Category 2
- **Liquefied gas**: Gases under pressure Liquefied gas
- **Skin Irrit. 2**: Skin corrosion/irritation Category 2
- **STOT SE 3**: Specific target organ toxicity (single exposure) Category 3
- **H220**: Extremely flammable gas
- **H228**: Flammable solid
**Molten Sulfur**  
**Safety Data Sheet**  

<table>
<thead>
<tr>
<th>SDS#</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHE-1110S</td>
<td>Contains gas under pressure; may explode if heated</td>
</tr>
<tr>
<td>H280</td>
<td>Contains gas under pressure; may explode if heated</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H330</td>
<td>Fatal if inhaled</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life</td>
</tr>
<tr>
<td>H401</td>
<td>Toxic to aquatic life</td>
</tr>
</tbody>
</table>

**NFPA 704**

<table>
<thead>
<tr>
<th>NFPA Health Hazard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>:</td>
<td>2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NFPA Fire Hazard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>:</td>
<td>3 - Liquids and solids that can be ignited under almost all ambient conditions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NFPA Reactivity Hazard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>:</td>
<td>0 - Normally stable, even under fire exposure conditions, and are not reactive with water.</td>
</tr>
</tbody>
</table>

**HMIS Rating**

<table>
<thead>
<tr>
<th>Health</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>:</td>
<td>2 Moderate Hazard - Temporary or minor injury may occur</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>:</td>
<td>1 Slight Hazard</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>:</td>
<td>0 Minimal Hazard</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PPE</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Section 8</td>
<td></td>
</tr>
</tbody>
</table>

**Abbreviations and Acronyms**

AICS – Australian Inventory of Chemical Substances  
ACGIH – American Conference of Governmental Industrial Hygienists  
AIHA – American Industrial Hygiene Association  
ATE – Acute Toxicity Estimate  
BCF – Biocorcentration factor  
BEI - Biological Exposure Indices (BEI)  
CAS No. - Chemical Abstracts Service number  
CERCLA RG - Comprehensive Environmental Response, Compensation, and Liability Act - Reportable Quantity  
CICR - Turkish Inventory and Control of Chemicals  
EPA – Environmental Protection Agency  
EPCRA 304 – EPCRA 304 Extremely Hazardous Substance Emergency Planning and Community Right-to-Know-Act – Reportable Quantity  
ERAP Index – Emergency Response Assistance Plan Quantity Limit  
ErCSO - EC50 in Terms of Reduction Growth Rate  
ERG code (IATA) – Emergency Response Drill Code as found in the International Civil Aviation Organization (ICAO)  
ERG No. - Emergency Response Guide Number  
HCC - Hazard Communication Carcinogen List  
HMIS – Hazardous Materials Information System  
IARC - International Agency for Research on Cancer  
IATA - International Air Transport Association – Dangerous Goods Regulations  
IDLH - Immediately Dangerous to Life or Health  
IECSC - Inventory of Existing Chemical Substances Produced or Imported in China  
IMDG - International Maritime Dangerous Goods Code  
INSQ - Mexican National Inventory of Chemical Substances  
EN  - English US  
SAFETY DATA SHEET  
ISHL - Japan Industrial Safety and Health Law  
LC50 - Median Lethal Concentration  
LD50 - Median Lethal Dose  
LOAEL - Lowest Observed Adverse Effect Level  
LOEC - Lowest-observed-effect Concentration  
NOSH - National Institute for Occupational Safety and Health  
NLP - Europe No Longer Polymers List  
NOAEL - No-Observed Adverse Effect Level  
NOEC - No-Observed Effect Concentration  
NZIOC - New Zealand Inventory of Chemicals  
OEL - Occupational Exposure Limits  
OSHA – Occupational Safety and Health Administration  
PHEL - Permissible Exposure Limits  
PICCS - Philippine Inventory of Chemicals and Chemical Substances  
PDSL - Japan Poisonous and Deleterious Substances Control Law  
PRTR - Japan Pollutant Release and Transfer Register  
PEL - Permissible Exposure Limits  
PPE – Personal Protective Equipment  
REL - Recommended Exposure Limit  
SADT - Self Accelerating Decomposition Temperature  
SARA - Superfund Amendments and Reauthorization Act  
ERG code (IATA) – Emergency Response Drill Code as found in the International Civil Aviation Organization (ICAO)  
SAFETY DATA SHEET  
SARA 302 - Section 302, 40 CFR Part 355  
SARA 301/312 - Sections 311 and 312, 40 CFR Part 370 Hazard Categories  
SARA 313 - Section 313, 40 CFR Part 372  
SRCL - Specifically Regulated Carcinogen List  
STEL - Short Term Exposure Limit  
SVHC – European Candidate List of Substance of Very High Concern  
TDG – Transport Canada Transport of Dangerous Goods Regulations  
TLM - Median Tolerance Limit  
TLV - Threshold Limit Value  
TPQ - Threshold Planning Quantity  
TSCA – United StatesToxic Substances Control Act  
TPQ - Threshold Planning Quantity  
TWA - Time Weighted Average  
WEEL - Workplace Environmental Exposure Levels
Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA’S “Right to Know” (29 CFR 1910.1200) and Canada’s WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Chemtrade and its affiliates assume no responsibility. Chemtrade is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.