

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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P332+P313 - If skin irritation occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P370+P378 - In case of fire: Use appropriate media (see section 5) to extinguish.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

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

Mixture

Name	Product Identifier	%*	GHS Ingredient Classification
Sulfur	(CAS No) 7704-34-9	99.5 - 100	Flam. Sol. 2, H228 Skin Irrit. 2, H315 Comb. Dust
Hydrogen sulfide	(CAS No) 7783-06-4	0.1 - 0.5	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

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.

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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 Firefighting: 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.

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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.

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

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.

Hydrogen sulfide (7783-06-4)		
Mexico	OEL TWA (mg/m ³)	14 mg/m ³
Mexico	OEL TWA (ppm)	10 ppm
Mexico	OEL STEL (mg/m ³)	21 mg/m ³
Mexico	OEL STEL (ppm)	15 ppm
USA ACGIH	ACGIH TWA (ppm)	1 ppm
USA ACGIH	ACGIH STEL (ppm)	5 ppm
USA OSHA	OSHA PEL (Ceiling) (ppm)	20 ppm
USA NIOSH	NIOSH REL (ceiling) (mg/m ³)	15 mg/m ³
USA NIOSH	NIOSH REL (ceiling) (ppm)	10 ppm
USA IDLH	US IDLH (ppm)	100 ppm

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Alberta	OEL Ceiling (mg/m ³)	21 mg/m ³
Alberta	OEL Ceiling (ppm)	15 ppm
Alberta	OEL TWA (mg/m ³)	14 mg/m ³
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/m ³)	21 mg/m ³
New Brunswick	OEL STEL (ppm)	15 ppm
New Brunswick	OEL TWA (mg/m ³)	14 mg/m ³
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/m ³)	21 mg/m ³
Québec	VECD (ppm)	15 ppm
Québec	VEMP (mg/m ³)	14 mg/m ³
Québec	VEMP (ppm)	10 ppm
Saskatchewan	OEL STEL (ppm)	15 ppm
Saskatchewan	OEL TWA (ppm)	10 ppm
Yukon	OEL STEL (mg/m ³)	27 mg/m ³
Yukon	OEL STEL (ppm)	15 ppm
Yukon	OEL TWA (mg/m ³)	15 mg/m ³
Yukon	OEL TWA (ppm)	10 ppm
Sulfur (7704-34-9)		
Alberta	OEL TWA (mg/m ³)	10 mg/m ³

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.

Personal Protective Equipment: Insulated gloves. Protective goggles. Protective clothing. Insufficient ventilation: wear respiratory protection.



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Materials for Protective Clothing: Wear fire/flame resistant/retardant clothing. With molten material wear thermally protective clothing.

Hand Protection: Wear chemically resistant protective gloves. If material is hot, wear thermally resistant protective gloves.

Eye Protection: Chemical safety goggles and face shield.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Thermal Hazard Protection: Protect skin and eyes from contact with molten material.

Other Information: When using, do not eat, drink or smoke

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Solid
Appearance	: Opaque liquid when shipped, brittle solid below melting point. Bright yellow to brown.
Odor	: Rotten eggs
Odor Threshold	: Not available
pH	: Not applicable
Evaporation Rate	: Not applicable
Melting Point	: 114 - 119 °C (237.2 - 246.2 °F)
Freezing Point	: Not applicable
Boiling Point	: 444.6 °C (832.28 °F)
Flash Point	: 207 °C (404.6 °F) Pensky-Martens Closed Cup
Auto-ignition Temperature	: 232 °C (449.6 °F)
Decomposition Temperature	: Not applicable
Flammability (solid, gas)	: Flammable solid
Lower Flammable Limit	: 4 %
Upper Flammable Limit	: 44 %
Vapor Pressure	: 0.015 kPa (0.11 mm Hg)
Relative Vapor Density at 20°C	: 3.64 [Air = 1]
Relative Density	: Not available
Specific Gravity	: 1.79
Solubility	: Water: Insoluble Organic solvent: Soluble in carbon disulfide, benzene, toluene, chloroform, ether, warm aniline, carbon tetrachloride and liquid ammonia.
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: Not available
Explosive Properties	: Dust Explosion Hazard

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)

LD50 and LC50 Data:

Hydrogen sulfide (7783-06-4)	
LC50 Inhalation Rat	444 ppm/4h
Sulfur (7704-34-9)	
LD50 Oral Rat	> 3000 mg/kg
LD50 Dermal Rabbit	> 2000 mg/kg
LC50 Inhalation Rat	> 9.23 mg/l/4h

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: Toxic to aquatic life.

Hydrogen sulfide (7783-06-4)	
LC50 Fish 1	0.0448 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [flow-through])
LC50 Fish 2	0.016 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
Sulfur (7704-34-9)	
LC50 Fish 1	866 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
EC50 Daphnia 1	736 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 Fish 2	14 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

Persistence and Degradability

Molten Sulfur	
Persistence and Degradability	Not established.

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Bioaccumulative Potential

Molten Sulfur	
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.

TRANSPORTATION CLASSIFICATION	DOT	TDG	IMDG	IATA
Identification Number	NA2448	UN2448	UN2448	UN2448
Proper Shipping Name	SULFUR, MOLTEN	MOLTEN SULFUR	SULPHUR, MOLTEN	SULPHUR, MOLTEN
Transport Hazard Class(es)	9	4.1	4.1	4.1
				Not applicable
Packing Group	III	III	III	Not applicable
Environmental Hazards	Marine Pollutant : No	Marine Pollutant : No	Marine Pollutant : No	Marine Pollutant: N/A
Emergency Response	ERG Number : 133	ERAP Index: Not applicable	EMS: F-A, S-H	ERG code (IATA): 3L
Additional Information	Not applicable	Not applicable	Not applicable	Not applicable

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Chemical Name (CAS No.)	CERCLA RQ	EPCRA 304 RQ	SARA 302 TPQ	SARA 313
Sulfur (7704-34-9)	Not applicable	Not applicable	Not applicable	No

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

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Sulfur (7704-34-9)	No	No	No	No

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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 NDSDL (Non-Domestic Substances List)

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

International Inventories/Lists

Chemical Name (CAS No.)	Australia AICS	Turkey CICR	Korea ECL	EU EINECS	EU ELINCS	EU SVHC	EU NLP	Mexico INSQ
Sulfur (7704-34-9)	Yes	Yes	Yes	Yes	No	No	No	Yes

Chemical Name (CAS No.)	China IECSC	Japan ENCS	Japan ISHL	Japan PDSCL	Japan PRTR	Philippines PICCS	New Zealand NZIOC	US TSCA
Sulfur (7704-34-9)	Yes	No	No	No	No	Yes	Yes	Yes

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

Revision Date : 05/07/2018

Revision Summary

Section	Change	Date Changed
3	HPR trade secret statement	05/07/2018

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

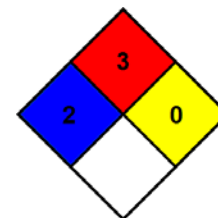
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H280	Contains gas under pressure; may explode if heated
H315	Causes skin irritation
H319	Causes serious eye irritation
H330	Fatal if inhaled
H335	May cause respiratory irritation
H400	Very toxic to aquatic life
H401	Toxic to aquatic life

NFPA 704

- NFPA Health Hazard** : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
- NFPA Fire Hazard** : 3 - Liquids and solids that can be ignited under almost all ambient conditions.
- NFPA Reactivity Hazard** : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS Rating

- Health** : 2 Moderate Hazard - Temporary or minor injury may occur
* Chronic - Chronic (long-term) health effects may result from repeated overexposure
- Flammability** : 1 Slight Hazard
- Physical** : 0 Minimal Hazard
- PPE** See Section 8

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 - Bioconcentration factor
BEI - Biological Exposure Indices (BEI)
CAS No. - Chemical Abstracts Service number
CERCLA RQ - Comprehensive Environmental Response, Compensation, and Liability Act - Reportable Quantity
CICR - Turkish Inventory and Control of Chemicals
DOT – 49 CFR – US Department of Transportation – Code of Federal Regulations Title 49 – Transportation.
EC50 - Median effective concentration
ECL - Korea Existing Chemicals List
EINECS - European Inventory of Existing Commercial Chemical Substances
ELINCS - European List of Notified Chemical Substances
EmS - IMDG Emergency Schedule Fire & Spillage
ENCS - Japanese Existing and New Chemical Substances Inventory
EPA - Environmental Protection Agency
EPCRA 304 RQ – EPCRA 304 Extremely Hazardous Substance Emergency Planning and Community Right-to-Know-Act – Reportable Quantity
ERAP Index – Emergency Response Assistance Plan Quantity Limit
ERC50 - 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
HCCL - 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
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
NFPA 704 – National Fire Protection Association - Standard System for the Identification of the Hazards of Materials for Emergency Response
NIOSH - 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
PEL - Permissible Exposure Limits
PICCS - Philippine Inventory of Chemicals and Chemical Substances
PDSCL - Japan Poisonous and Deleterious Substances Control Law
PPE – Personal Protective Equipment
PRTR - Japan Pollutant Release and Transfer Register
REL - Recommended Exposure Limit
SADT - Self Accelerating Decomposition Temperature
SARA - Superfund Amendments and Reauthorization Act
SARA 302 - Section 302, 40 CFR Part 355
SARA 311/312 - 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 States Toxic Substances Control Act
TWA - Time Weighted Average
WEEL - Workplace Environmental Exposure Levels

Molten Sulfur

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

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