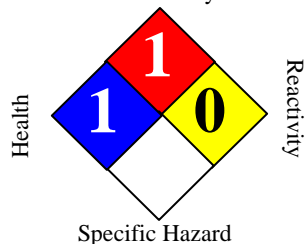


# Material Safety Data Sheet

## Sulfur, Prill

**NFPA:** Flammability



**HMIS III:**

HEALTH	1
FLAMMABILITY	1
PHYSICAL	0

0 = Insignificant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

<b>Product name</b>	:	Sulfur, Prill
<b>Synonyms</b>	:	Sulfur Block, Brimstone, Sulfur
<b>MSDS Number</b>	:	888100004458
<b>Version</b>	:	1.0
<b>Product Use Description</b>	:	Refining byproduct
<b>Company</b>	:	EHS_SNNAM2 300 Concord Plaza Drive, San Antonio, TX 78216-6999
<b>Tesoro Call Center</b>	:	(877) 783-7676
<b>Chemtrec (Emergency Contact)</b>	:	(800) 424-9300

### SECTION 2. HAZARDS IDENTIFICATION

#### Emergency Overview

<b>Regulatory status</b>	:	This material is considered hazardous by the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200).
<b>Signal Word</b>	:	Caution
<b>Hazard Summary</b>	:	Combustible Solid. May cause skin irritation. May cause respiratory and digestive tract irritation. Causes eye irritation.

#### Potential Health Effects

<b>Eyes</b>	:	Causes eye irritation. Effects may be delayed.
<b>Skin</b>	:	May cause skin irritation with prolonged or repeated contact.
<b>Ingestion</b>	:	Ingestion may cause gastrointestinal irritation and diarrhea.
<b>Inhalation</b>	:	May cause respiratory tract irritation if inhaled.
<b>Target Organs</b>	:	Eyes, Respiratory system

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Weight %
Sulfur	7704-34-9	100%
Hydrogen Sulfide	7783-06-4	0 - 1%

**SECTION 4. FIRST AID MEASURES**

<b>Inhalation</b>	: Move to fresh air. If symptoms persist, seek medical attention.
<b>Skin contact</b>	: Take off contaminated clothing and shoes immediately. Wash off with soap and water. Wash contaminated clothing before re-use. If symptoms persist, seek medical attention.
<b>Eye contact</b>	: Remove contact lenses. Rinse thoroughly with plenty of water for at least 15 minutes and seek medical attention.
<b>Ingestion</b>	: Do NOT induce vomiting. Drink 1 or 2 glasses of water. Seek medical attention if symptoms persist.
<b>Notes to physician</b>	: Symptoms: Ingestion may provoke the following symptoms: Vomiting, Diarrhea, Pain, Gastrointestinal discomfort

**SECTION 5. FIRE-FIGHTING MEASURES**

<b>Form</b>	: Solid form
<b>Flash point</b>	: 167 °C (333 °F) Method: ISO 3679
<b>Auto Ignition temperature</b>	: 235 °C (455 °F)
<b>Lower explosive limit</b>	: No data available
<b>Upper explosive limit</b>	: No data available
<b>Specific hazards during fire fighting</b>	: Exposure to decomposition products may be a hazard to health. Toxic oxides of sulfur are generated from burning sulfur.
<b>Special protective equipment for fire-fighters</b>	: Firefighters should wear self-contained breathing apparatus and full protective clothing as need for protection from heat and airborne combustion products.
<b>Further information</b>	: Standard procedure for chemical fires.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

<b>Environmental precautions</b>	: Local authorities should be advised if significant spillages cannot be contained. Discharge into the environment must be avoided.
<b>Methods for cleaning up</b>	: Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations. Carefully vacuum, shovel, scoop or sweep up into a waste container for reclamation or disposal. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

**CERCLA Hazardous substances and corresponding RQs :**

Hydrogen Sulfide	7783-06-4	100 lbs
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**SECTION 7. HANDLING AND STORAGE**

<b>Handling</b>	: Handle and open containers with care. Protect from moisture.
<b>Advice on protection against</b>	: Keep away from heat and sources of ignition. No smoking near areas where

- fire and explosion** : material is stored or used. Electrical installations and equipment in hazardous locations should be installed according to articles 501 and 502 of the National Electric Code. Reference also NFPA 655 Standard for the Prevention of Sulfur Fires and Explosions.
- Dust explosion class** : Keep ignition sources away from sulfur dust. Severe hazard if high concentrations of airborne dust are generated.
- Requirements for storage areas and containers** : Keep container tightly closed in a dry and well-ventilated place. Prevent unauthorized access.
- Advice on common storage** : Keep away from food, drink and animal feed.
- Other data** : Stable under recommended storage conditions.

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

**Exposure Guidelines**

List	Components	CAS-No.	Type:	Value
OSHA	Sulfur	7704-34-9	TWA	15 mg/m3
	Hydrogen Sulfide	7783-06-4	STEL	20 ppm
ACGIH	Hydrogen Sulfide	7783-06-4	TWA	10 ppm
		7783-06-4	STEL	15 ppm

- Engineering measures** : Provide adequate ventilation. Handle only in a place equipped with local exhaust (or other appropriate exhaust).
- Eye protection** : Safety glasses. Indirect vented, dust-tight goggles are recommended if dust is generated when handling this product. Ensure that eyewash stations and safety showers are close to the workstation location.
- Hand protection** : Impervious gloves such as neoprene gloves. If product is hot, thermally protective gloves are recommended. Consult manufacturer specifications for further information.
- Skin and body protection** : Flame resistant clothing such as Nomex ® is recommended in areas where material is stored or handled.
- Respiratory protection** : Where dust or sulfur dioxide are generated and cannot be controlled to within acceptable levels, use appropriate NIOSH-approved respiratory protection equipment (a combination of a 42CFR84 Class N, R or P-95 particulate filter and an acid gas cartridge). Where hydrogen sulfide is present or possibly present in confined spaces at hazardous levels a NIOSH-approved supplied air respirator or self-contained breathing apparatus (SCBA) is necessary.
- Hygiene measures** : Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Promptly remove contaminated clothing and launder before reuse. Wash hands before breaks and at the end of workday.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

- Form** : Solid form
- Appearance** : Light yellow to yellow crystals or powder

<b>Odor</b>	: Odorless. Hydrogen sulfide (H <sub>2</sub> S) has a characteristic rotten egg odor with an odor threshold as low as 10 parts per billion or even less. However, this odor should not be used as a warning property because H <sub>2</sub> S can deaden the sense of smell. H <sub>2</sub> S concentrations can be measured with an H <sub>2</sub> S meter or colorimetric indicating tubes.
<b>Flash point</b>	: 167 °C (333 °F) Method: ISO 3679
<b>Auto Ignition temperature</b>	: 235 °C (455 °F)
<b>Thermal decomposition</b>	: No decomposition if stored and applied as directed., Toxic oxides of sulfur and hydrogen sulfide may be released from heated or burning sulfur.
<b>Lower explosive limit</b>	: No data available
<b>Upper explosive limit</b>	: No data available
<b>pH</b>	: Not applicable
<b>Boiling point</b>	: 445 °C(833 °F)
<b>Vapor Pressure</b>	: 1.3 kPa at 118.9 °C (246.0 °F)
<b>Density</b>	: 8.9 g/cm <sup>3</sup>
<b>Water solubility</b>	: Insoluble
<b>Viscosity, kinematic</b>	: No data available
<b>Percent Volatiles</b>	: Negligible

**SECTION 10. STABILITY AND REACTIVITY**

<b>Conditions to avoid</b>	: Keep away from heat and sources of ignition.
<b>Materials to avoid</b>	: Combustible material. Potassium. Halogenated compounds.
<b>Hazardous decomposition products</b>	: Risk of explosion. Risk of ignition. No decomposition if stored and applied as directed.
<b>Thermal decomposition</b>	: No decomposition if stored and applied as directed. Toxic oxides of sulfur and hydrogen sulfide may be released from heated or burning sulfur.

**SECTION 11. TOXICOLOGICAL INFORMATION**

**Carcinogenicity**

<b>NTP</b>	: No component of this product which is present at levels greater than or equal to 0.1 % is identified as a known or anticipated carcinogen by NTP.
<b>IARC</b>	: No component of this product which is present at levels greater than or equal to 0.1 % is identified as probable, possible or confirmed human carcinogen by IARC.
<b>OSHA</b>	: No component of this product which is present at levels greater than or equal to 0.1 % is identified as a carcinogen or potential carcinogen by OSHA.
<b>CA Prop 65</b>	: This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.



Packaging group : III  
 ICAO-Labels : 4.1  
 Packing instruction (cargo aircraft) : 420  
 Packing instruction (cargo aircraft) : Y419

**IATA Passenger Transport**

UN UN-No. : UN1350  
 Description of the goods : SULFUR  
 Class : 4.1  
 Packaging group : III  
 ICAO-Labels : 4.1  
 Packing instruction (passenger aircraft) : 419  
 Packing instruction (passenger aircraft) : Y419

**IMDG-Code**

UN-No. : UN 1350  
 Description of the goods : Sulfur  
 Class : 4.1  
 Packaging group : III  
 IMDG-Labels : 4.1  
 EmS Number : F-A S-G  
 Marine pollutant : No

**SECTION 15. REGULATORY INFORMATION**

OSHA Hazards : Toxic by inhalation.  
 Moderate eye irritant  
 TSCA Status : On TSCA Inventory  
 DSL Status : All components of this product are on the Canadian DSL list.  
 SARA 311/312 Hazards : Acute Health Hazard  
 Chronic Health Hazard  
 Fire Hazard

PENN RTK US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

**Components** CAS-No.  
**Sulfur** 7704-34-9

MASS RTK US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

**Components** CAS-No.  
**Sulfur** 7704-34-9

NJ RTK US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

**Components** CAS-No.  
**Sulfur** 7704-34-9

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

## SECTION 16. OTHER INFORMATION

### Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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