SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and company/undertaking

1.1 Product identifiers

Product name: Sulfur

CAS number: 7704-34-9

Synonyms: Not available

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Not available

1.3 Details of the supplier of the safety data sheet

Company
Lab Alley, LLC
12501 Pauls Valley Road, Suite A,
Austin, TX 78737 U.S.A

Telephone 512-668-9918
Fax 512-886-4008

1.4 Emergency telephone

Emergency Phone # US & Canada: 1-800-535-5053 INFOTRACK
International 1-352-323-3500 INFOTRACK

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin Irritation, Category 3

Combustible Dust

May cause skin irritation. May form combustible dust concentrations in air.

2.2 GHS label elements including precautionary statements.

Pictogram

Signal word: Warning

Hazard Statement

H303: May be harmful if swallowed.

H316: May cause mild skin irritation.

H320: May cause eye irritation.

H335: May cause respiratory irritation.

Precautionary Statements

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P220: Keep away from oxidizing agents.

P242: Use non-sparking tools when available.

P243: Take precautionary measures against static discharge.

P261: Avoid breathing dust/fume/gas/mist/vapors/spray.

P264: Wash hands thoroughly after handling and before eating.

P284: In case of inadequate ventilation, wear respiratory protection.

Response Statement

P362: Take off contaminated clothing.

P363: Wash contaminated clothing before reuse.

P370+P378: In case of a fire, use water fog, spray, or regular foam to extinguish. Do not use a direct water stream.

P381: Eliminate all ignition sources.

Storage Statement

P402: Store in a dry place.

P404: Store in a closed container

2.3 Hazards not otherwise classified (HNOC)

No information

SECTION 3: Composition/information on ingredients

Chemical name	Common name	CAS number	Concentration
Sulfur		7704-34-9	>99.5%

SECTION 4: First aid measures

4.1 Description of first-aid measures

Skin

Wash skin thoroughly with mild soap and water. Wash exposed clothing separately before reuse.

Eye

Immediately flush eyes with plenty of water for 15 minutes, while holding upper and lower lid apart to insure rinsing of entire eye surface and lids. Do not use boric acid to rinse with. FOR SEVERE IRRITATION, SEEK MEDICAL ATTENTION, preferably an ophthalmologist.

Inhalation

Move victim to fresh air. Watch for signs of an allergic reaction. Use a bronchodilator inhaler if directed by asthma patient. Keep victim warm and quiet. If not breathing, give artificial respiration. If heart has stopped beating, start cardiopulmonary resuscitation (CPR). SEEK MEDICAL ATTENTION.

Ingestion

Give one tablespoon of Syrup of Ipecac to induce vomiting. If vomiting does occur, give fluids again. If vomiting has not occurred in twenty minutes, the same dose of Syrup of Ipecac may be repeated one additional time. Alternatively, vomiting may be induced by touching the back of the throat with a finger. Do not give anything by mouth to an unconscious or convulsing person. SEEK MEDICAL ATTENTION.

4.2 Most Important Symptoms and Effects, Acute and Delayed

Refer to Section 11: Toxicological Information

4.3. Medical Attention or Special Treatment Needed

Individuals with known allergies to sulfide drugs may also have allergic reactions to elemental sulfur.

SECTION 5: Firefighting measures

5.1. Extinguishing Media

Suitable Extinguishing Media: Water fog, spray, or regular foam. Do not use a direct water stream.

Unsuitable Extinguishing Media: Do not use solid streams of water, which could create sulfur dust clouds and cause an explosion or could move burning sulfur to adjacent areas.

Exposure Hazards: Evacuate nonessential personnel from the fire area. If large fire, evacuate people downwind from fire. Consider evacuation for ½ mile in all directions.

5.2. Specific Hazards Arising from the Substance or Mixture

Sulfur oxide gases.

Fire will rekindle until mass is cooled below 310°F (154°C). Cool surrounding areas with water fog to prevent re-igniting. Sulfur dust is HIGHLY FLAMMABLE. If suspended in air, it will ignite by friction, static electricity, heat, sparks, or flames. Sulfur dust clouds may explode.

5.3. Special Protective Equipment for Firefighters

Wear full-faced, self-contained breathing apparatus and full protective clothing. Firemen exposed to contaminated smoke should be immediately relieved and checked for symptoms of exposure of toxic gases. This should not be mistaken for heat exhaustion or smoke inhalation. Seek medical attention immediately!

5.4 NFPA Rating

Health 3

Flammability 0

Reactivity 0

5.5 Further Information

Not available

SECTION 6: Accidental release measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Minor spills such as torn or ruptured containers should be repaired or patched with tape if possible. Place spilled material in a disposable container. Avoid getting dust in eyes.

Protective Equipment

Maintain adequate ventilation. Wear a dust mask when dust is present or a respirator if smoke is present. Wear safety glasses.

Emergency Procedures

As an immediate precautionary measure isolate spills or leak areas. Eliminate all sources of ignition, such as flares, sparks, or flames, in the immediate area. No smoking. Ventilate closed spaces before entering.

6.2 Environmental Precautions

Do not allow runoff to enter lakes or waterways.

6.3 Methods and materials for containment and Cleaning up

Gently sweep or shovel up spilled material using a natural fiber broom and/or aluminum shovel to prevent sparking, to avoid creating a dust cloud. Place sweepings in an appropriate chemical waste container for reclaiming or disposal in an approved facility. Wash spill site after clean-up is complete.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

All handling and conveying equipment should be properly grounded and bonded. Be careful not to create dust. Avoid any conditions that might tend to create a dust explosion. Maintain good housekeeping practices to minimize dust build-up and dispersion. Eliminate sources of ignition. Keep away from heat, sparks, and flames. Use nonferrous tools, when available, to reduce sparking. Gently sweep or shovel up spilled materials using a natural fiber broom and/or aluminum shovel to prevent sparking. Maintain adequate ventilation in all areas.

7.2 Conditions for safe storage, including any incompatibilities.

Containers should be stored in a cool, dry, well-ventilated area. Keep container tightly closed. Store away from flammable materials, sources of heat, flames, and sparks. Separate from chlorates, nitrates, and other oxidizing agents. Exercise due caution to prevent damage to or leakage from container.

Incompatible Materials: Keep away from flammable materials, sources of heat, flame, sparks, chlorates, nitrates and other oxidizing agents.

SECTION 8. Exposure controls/personal protection

8.1 Occupations Exposure Guidelines

This product does not contain any hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

8.2 Exposure Controls

Engineering Controls: Maintain adequate ventilation in all areas. No flares or flames in area. Be careful not to create dust. Eliminate sources of ignition.

Respiratory: Wear dust masks and use NIOSH/MSHA approved dust respirator if airborne concentrations exceed exposure limits.

Eyes/Face: Wear suitable, protective safety glasses to prevent eye irritation from dust.

Hands: Wash hands thoroughly after handling and before eating or smoking.

Skin/Body: Wear suitable, protective clothing to prevent skin irritation from dust. Wash skin thoroughly after handling and before eating or smoking. Wash contaminated clothing separately before reuse.

Personal Protective Equipment

Wear protective gloves and eye protection. Normal room ventilation is adequate. Chemical resistant gloves. Safety glasses or goggles.

Environmental Exposure Controls

Follow best practice for site management and disposal of waste. Avoid release to the environment.

General Industrial Hygiene Considerations

Protective equipment should be used in any situation that may result in hazardous exposure. Maintain good housekeeping practices to minimize dust build-up and dispersion. Eliminate sources of ignition. Use nonferrous tools to reduce sparking. Sweep or shovel up spilled material using a natural fiber broom and/or aluminum shovel to prevent sparking. Maintain adequate ventilation in all areas.

SECTION 9: Physical and chemical properties

Physical state: Solid, powder form

Appearance: Yellow powder

Formula: S8 (Rhombic or monoclinic)

Odor: Odorless, or faint odor of rotten eggs

Odor threshold: No data available

pH: No data available

Boiling Point: 832°F (444°C)

Melting/ Freezing Point :118 - 120°C (244-248°F)

Flash Point: 207°C (405°F) Closed Cup

Evaporation Rate: No data available

Flammability: May form combustible dust concentrations in air

Flammable/Explosion Limits:

Upper 6.38% (v)

Lower: 0.17% (v)

Vapor Pressure: 8mmHg at 246°C (475°F) 1mmHg at 183.8°C (362.8°F)

Vapor Density: No data available

Purity: 99.5% Min

Auto-Ignition Temperature: 240°C (464°F)

Decomposition Temperature: Does not decomposes

Viscosity: Not applicable

Specific Gravity: 2.07 @ 70°F

Solubility in Water: Insoluble

Bulk Density Powder: 33-80 lbs. / ft3

SECTION 10: Stability and reactivity

10.1 Reactivity and Chemical Stability

Stable

10.2 Possibility of Hazardous Reactions

Oxidizing agents may react violently.

10.3 Conditions to Avoid and Incompatible Materials

Keep from heat sources, sparks, and open flames. Minimize dust generation and accumulation. Strong oxidizing agents, copper, copper alloys, steel, chlorates, nitrates.

10.4. Hazardous Decomposition Products

Oxides of sulfur gases produced by burning sulfur.

Hazardous Polymerization

Will not occur.

SECTION 11: Toxicological information

11.1 Information on Toxicological Effects

Likely Routes of Exposure

Inhalation, ingestion, skin contact, and eye contact. Signs and Symptoms of Nose or throat irritation, coughing, chest discomfort, asthma, difficulty breathing, Overexposure nausea, vomiting, stinging eye irritation, skin irritation, hives**.**

11.2 Exposure Limits

No exposure limits have been established.

11.3 Acute Symptoms and Effects

Inhalation

Prolonged inhalation may cause irritation of respiratory tract. Breathing of dust may aggravate asthma and other pulmonary diseases.

Eye Contact

Sulfur dust is an eye irritant

Skin Contact

No adverse effects; however, skin irritation may be aggravated in persons with existing skin lesions.

Ingestion

Ingested sulfur is converted to sulfides in the gastrointestinal tract, and ingestion of 10 to 20 grams has caused irritation of the GI tract and renal injury. Swallowing large amounts may cause nausea and vomiting

11.4 Long-Term Effects

None known to humans

11.5

Toxicity LD50 Oral: >5050 mg/kg (rats)

Dermal: >2020 mg/kg (rats)

LC50 Inhalation @ 90%: >5.49-mg/L air concentration (rats)

Skin

Slightly irritating (rabbits)

Eye

Minimal irritation in non-washed eyes (rabbits)

Sensitization

Not Established

Reproductive Effects

Not Established

Developmental Effects

Not Established

Endocrine Disruptor

Not Established

Carcinogenicity, Teratogenicity, and Mutagenicity

This product does not contain any ingredient designated by NTP, IARC, or OSHA as a probable human carcinogen.

SECTION 12. Ecological information

12.1. Ecotoxicity

Toxicity to fish LC50- Oncorhynchus mykiss (rainbow trout) -> 180 mg/l -96h LC50- other fish866 mg/l -96h

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

12.2. Persistence and Degradability

Data not available.

12.3. Bio-accumulative Potential

Data not available.

12.4. Mobility in Soil

Data not available.

12.4 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.5. Other Adverse Ecological Effects

Data not available.

SECTION 13. Disposal considerations

13.1 Waste Disposal Method

Waste Treatment Methods

Product Waste

Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging Waste

Dispose of content and/or container in accordance with local, regional, national and/or international regulations

SECTION 14: Transport information

Solid sulfur is not regulated if transported in non-bulk packaging (less than 400kg per package) or if formed to a specific shape, such as prills, granules, pellets, pastilles, or flakes (49 CFR 172.102, special provision 30).

DOT (US)

NA1350

Proper Shipping Name: Sulphur (Sulfur)

Hazard Class 9 (Misc. Hazardous Materials)

Packing Group III

TDG

UN 1350

Proper Shipping Name: Sulfur

Hazard Class 4.1

Packing Group III

IATA/ICAO

UN 1350

Proper Shipping Name: Sulfur

Hazard Class 4.1

Packing Group III

IMO/IMDG

UN 1350

Proper Shipping Name: Sulphur (Sulfur)

Hazard Class 4.1

Packing Group III

This product is not a Marine Pollutant as defined in 40 CFR Part 172.

Pictograms for Hazard Classes Powdered sulfur packaging over 400 kg (880 lbs) only.

SECTION 15: Regulatory information

TSCA

This product is listed on the TSCA Inventory at CAS Registry Number 7704-34-9.

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

If this product is accidentally spilled, it is not subject to any special reporting. We recommend that you contact state and local authorities to determine if there are other local reporting requirements.

SARA TITLE III Superfund Amendments and Reauthorization Act, Title III

Sections 311/312: None. Section 313: None. Section 302: None.

RCRA Resource Conservation and Recovery Act

Not subject to reporting because sulfur is not identified as a hazardous waste.

Other International Regulations

Not available

SECTION 16: Other information

Date of issue: 1/9/2024

Revision: None

SECTION 17: Disclaimer

The information provided on 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 a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.