## SECTION 1: IDENTIFICATION

<table>
<thead>
<tr>
<th>Trade Name &amp; Synonyms</th>
<th>Sulfur, Pulverized Sulfur, Feed Grade Sulfur, Commercial Sulfur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name</td>
<td>Sulfur</td>
</tr>
<tr>
<td>CAS Number</td>
<td>7704-34-9</td>
</tr>
<tr>
<td>Family Name</td>
<td>Element – Sulfur</td>
</tr>
<tr>
<td>Chemical Formula</td>
<td>S₈</td>
</tr>
<tr>
<td>Recommended Use</td>
<td>Animal feed, various industrial applications</td>
</tr>
<tr>
<td>Restrictions on Use</td>
<td>Keep away from heat sources, sparks, or open flames</td>
</tr>
</tbody>
</table>

**Manufacturer/Supplier**

**Sales and Technical Services**
International Sulphur, Inc.
P. O. Box 611
Mt. Pleasant, TX 75456
Tel: (903) 577-5500
Fax: (903) 577-5540
isulphur@internationalsulphur.com

**Shipping and Receiving**
International Sulphur, Inc.
1386 North Frontage Road
Mt. Pleasant, Texas 75455
Tel: (903) 577-5500
Fax: (903) 577-5540

**GPS Coordinates:** 33° 9’ 34” N 95° 03’ 29” W

**Emergency Assistance**
CHEMTREC
Tel: (800) 424-9300 within the USA
Tel: 001-703-527-3887 outside the USA

## SECTION 2: HAZARDS IDENTIFICATION

**GHS Information:**

Classification: Skin irritant, Category 2

**OSHA Defined Hazards:** Combustible Dust

**GHS Label Elements**

**Pictogram(s):**

![Exclamation Mark]

**Signal Word:** Warning

**Hazard Statement:** May cause skin irritation. May form combustible dust concentrations in air.
Safety Data Sheet (SDS)

SECTION 2: HAZARDS IDENTIFICATION

| Hazard Statement | H303: May be harmful if swallowed.  
|                  | H316: May cause mild skin irritation.  
|                  | H320: May cause eye irritation.  
|                  | H335: May cause respiratory irritation.  

| Prevention Statement | 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.  
|                  | P403: Store in a well-ventilated place.  
|                  | P404: Store in a closed container.  

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Characterization

Mixture

<table>
<thead>
<tr>
<th>Product</th>
<th>Percentage Contained</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfur</td>
<td>&gt;99.85%</td>
<td>7704-34-9</td>
</tr>
</tbody>
</table>

Hazardous Ingredient None

SECTION 4: FIRST AID MEASURES

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.
SECTION 4: FIRST AID MEASURES (CONT)

Most Important Symptoms and Effects (Long-Term and Acute)
Refer to Section 11: Toxicological Information

Indication of any Immediate Medical Attention or Special Treatment Needs
Individuals with known allergies to sulfide drugs may also have allergic reactions to elemental sulfur

SECTION 5: FIREFIGHTING MEASURES

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
Prevent human exposure to smoke, fumes, or products of combustion (sulfur oxide gases). Evacuate nonessential personnel from the fire area. If large fire, evacuate people downwind from fire. Consider evacuation for ½ mile in all directions.

Advice for Firefighters
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!

Protective Equipment
Wear full-faced, self-contained breathing apparatus and full protective clothing.

Fire and Explosion Hazards
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.

Combustion Products
Sulfur oxide gases

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions
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.

Environmental Precautions
Do not allow runoff to enter lakes or waterways.

Containment/Cleanup Measures
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.
SECTION 7: STORAGE AND HANDLING

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.

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

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

Personal Protective Equipment

Pictograms

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.

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
- **Appearance**: Yellow colored lumps, crystals, powder, or formed shape
- **Formula**: \( S_8 \) (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**: Sulfur dust may form combustible concentrations
- **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 decompose
- **Viscosity**: Not applicable
- **Specific Gravity**: 2.07 @ 70° F
- **Solubility in Water**: Insoluble
- **Bulk Density**: Lumps: 75-115 lbs. /ft\(^3\)  Powder: 33-80 lbs. /ft\(^3\)

SECTION 10: STABILITY AND REACTIVITY

- **Chemical Stability**: Stable
- **Conditions to Avoid**: Keep from heat sources, sparks, and open flames
- **Incompatible Materials**: Oxidizing agents, copper, copper alloys, steel, chlorates, nitrates
- **Possibility of Hazardous Reactions**: Oxidizing agents may react violently
- **Hazardous Decomposition**: Oxides of sulfur gases produced by burning sulfur
- **Hazardous Polymerization**: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

- **Likely Routes of Exposure**: Inhalation, ingestion, skin contact, and eye contact
- **Signs and Symptoms of Overexposure**: Nose or throat irritation, coughing, chest discomfort, asthma, difficulty breathing, nausea, vomiting, stinging eye irritation, skin irritation, hives.
- **Exposure Limits**: No exposure limits have been established
- **Acute Symptoms and Effects**: 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.
**SECTION 11: TOXICOLOGICAL INFORMATION (CONT)**

<table>
<thead>
<tr>
<th>Sensitization</th>
<th>Reproductive Effects</th>
<th>Developmental Effects</th>
<th>Endocrine Disruptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Established</td>
<td>Not Established</td>
<td>Not Established</td>
<td>Not Established</td>
</tr>
</tbody>
</table>

**Toxicity**

- **LD<sub>50** Oral: >5050 mg/kg (rats)
- Dermal: >2020 mg/kg (rats)
- **LC<sub>50** Inhalation @ 90%: >5.49-mg/L air concentration (rats)
- **Skin** Slightly irritating (rabbits)
- **Eye** Minimal irritation in non-washed eyes (rabbits)

**Carcinogenicity**

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

**SECTION 12: ECOLOGICAL INFORMATION**

<table>
<thead>
<tr>
<th>Toxicity to fish</th>
<th>Toxicity to Daphnia</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50- Oncorhynchus mykiss (rainbow trout) -&gt; 180 mg/l -96h</td>
<td></td>
</tr>
<tr>
<td>LC50- other fish- 866 mg/l -96h</td>
<td></td>
</tr>
<tr>
<td>EC50- Daphnia magna (Water flea) -&gt; 5,000 mg/l -48h</td>
<td></td>
</tr>
</tbody>
</table>

**Ecotoxicity**

No data available

**Mobility**

No data available

**Degradation**

No data available

**Bioaccumulation**

No data available

**Results of PBT and vPvB assessment**

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

**SECTION 13. DISPOSAL CONSIDERATIONS**

**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: TRANSPORTATION 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).

**US and Canadian Shipments**

Bulk containers (packaging) of powdered sulfur of more than 400 kg (880 lbs.) per package

<table>
<thead>
<tr>
<th>14.1 UN number</th>
<th>14.2 UN proper shipping name</th>
<th>14.3 transport hazard class(es)</th>
<th>14.4 packaging group</th>
<th>14.5 environmental hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT (Domestic)</td>
<td>NA1350</td>
<td>Sulfur (Sulphur)</td>
<td>9 (Misc. Hazardous Materials)</td>
<td>III</td>
</tr>
<tr>
<td>DOT (International)</td>
<td>UN1350</td>
<td>Sulphur (Sulfur)</td>
<td>4</td>
<td>III</td>
</tr>
<tr>
<td>TDG</td>
<td>UN 1350</td>
<td>Sulfur</td>
<td>4.1</td>
<td>III</td>
</tr>
</tbody>
</table>
## SECTION 14: TRANSPORTATION INFORMATION (CONT)

### Other than US and Canadian Shipments

<table>
<thead>
<tr>
<th>All shipments of powdered sulfur</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IMOM/IMDG</td>
<td>UN1350</td>
</tr>
<tr>
<td>IATA/ICAO</td>
<td>UN1350</td>
</tr>
</tbody>
</table>

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

![Pictograms](image)

### Special Precautions for User

None specified

## 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.

## SECTION 16: OTHER INFORMATION

### Last Revision Date

03/28/2019

### Preparation Date

05/01/2015

### Additional Information

For additional information, contact your technical sales representative. For additional health and safety information, call Georgia Gulf Sulfur Corporation at 229-244-0000.

### Disclaimer/Statement of Liability

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