# Material Safety Data Sheet

## Identification

**Name**  
Sulfur

**Synonyms**  
Flowers of Sulfur

**CAS Name**  
Sulfur

**CAS Registry No.**  
7704-34-9

**Manufacturer/Distributor**  
E. I. du Pont de Nemours & Co. (Inc.)

**Address**  
Wilmington, DE 19898

## Chemical Family

Nonmetallic Element

## Formulation

S

## Physical Data

**Boiling Point, 760 mm Hg**  
444.6°C (832°F)

**Melting Point**  
113-119°C (235-247°F)

**Specific Gravity**  
2.0

**PH Information**  
Not applicable.

**Form**  
Solid

**Color**  
Yellow

## Hazardous Components

<table>
<thead>
<tr>
<th>Material(s)</th>
<th>Approximate %</th>
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</thead>
<tbody>
<tr>
<td>Sulfur</td>
<td>100</td>
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</table>

E-79967  
Date: 10/85
HAZARDOUS REACTIVITY

INSTABILITY
Stable.

INCOMPATIBILITY
Incompatible with strong oxidizing agents.

DECOMPOSITION
By reaction with air (burning), hydrocarbons, and other organic materials. Hazardous gases produced are sulfur dioxide, hydrogen sulfide, and carbon disulfide.

POLYMERIZATION
Will not occur.

FIRE AND EXPLOSION DATA

FLASH POINT 207°C (405°F)

AUTOIGNITION TEMPERATURE
232°C (450°F)

AUTODECOMPOSITION TEMPERATURE
Not available.

FLAMMABLE LIMITS IN AIR, % BY VOL.
LOWER 35 mg/L
UPPER Not available.

FIRE AND EXPLOSION HAZARDS
Toxic sulfur dioxide gas is produced in fire; dust forms explosive mixtures with air at 35 mg/L.

EXTINGUISHING MEDIA
Use water spray. Small fires may be extinguished with sand or earth.

SPECIAL FIRE FIGHTING INSTRUCTIONS
Wear self-contained breathing apparatus; avoid straight streams of water which will scatter molten sulfur and dust.

HEALTH HAZARD INFORMATION

PRINCIPAL HEALTH HAZARDS (Including Significant Routes, Effects, Symptoms of Over-Exposure, and Medical Conditions Aggravated by Exposure)

Causes irritation.

Human health effects of overexposure may initially include: skin irritation with discomfort or rash from repeated contact; eye irritation with discomfort, tearing, or blurring of vision; or irritation of the upper respiratory passages. There are no reports of human sensitization.

E-79967 Date: 10/85
CARCINOGENICITY
Not listed as a carcinogen by IARC, NTP, OSHA, ACGIH, or Du Pont.

EXPOSURE LIMITS (PEL (OSHA), TLV (ACGIH), AEL (DU PONT), ETC.)
Exposure limits for sulfur have not been established by OSHA, ACGIH, or Du Pont.

SAFETY PRECAUTIONS
Avoid contact with eyes, skin, and clothing.
Avoid breathing vapor and dust.
Wash thoroughly after handling.

FIRST AID
In case of contact: Immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. Remove as much material as possible from the skin by wiping (material is not soluble in water), then wash with plenty of soap and water. Wash clothing before reuse.

If swallowed: Do not induce vomiting. Immediately give two glasses of water or activated charcoal slurry.* Never give anything by mouth to an unconscious person. Call a physician.

Note to Physician: If large amounts have been swallowed, give sodium bicarbonate to reduce gastric acidity and prevent hydrogen sulfide formation.

PROTECTION INFORMATION

GENERALLY APPLICABLE CONTROL MEASURES
Good general ventilation should be provided to minimize dust and vapor concentrations. If dusty conditions exist, appropriate precautions to avoid explosions should be taken, including a properly grounded dust collection system.

PERSONAL PROTECTIVE EQUIPMENT
Use coverall chemical safety goggles. When there is potential for contact with molten material, wear heavy raincoat or similar gear.

DISPOSAL INFORMATION

AQUATIC TOXICITY
The compound has very low to low toxicity (96-hr. LC50 = >1000 mg/L).

SPILL, LEAK OR RELEASE
Sweep up spillage and transfer to covered metal container for disposal. Comply with Federal, State, and local regulations on reporting release.

*To prepare activated charcoal slurry, suspend 50 gm of activated charcoal in 400 mL of water in a bottle, and shake well.

E-79967 Date: 10/85
WASTE DISPOSAL
Comply with Federal, State, and local regulations. If approved, may be sent to a hazardous material disposal area or transferred to a licensed disposal contractor. Do not incinerate.

SHIPPING INFORMATION

DOT (172.101)  
PROPER SHIPPING NAME  
Sulfur, Solid*

HAZARD CLASS  
ORM-C

UN NO. 1350

DOT LABEL(S)  None

DOT PLACARD (TT/TC)  None

IMO (PAGE 4060)  
PROPER SHIPPING NAME  
Sulphur** (Lump or Coarse Grained Powder)

HAZARD CLASS  
4.1

UN NO. 1350

IMO LABEL(S)  Flammable Solid

DOT/IMO (172.102)  
PROPER SHIPPING NAME  
Sulphur** (Lump or Powder)

HAZARD CLASS  
Flammable Solid, 4.1

UN NO. 1350

IATA/ICAO  
LABEL(S)  Flammable Solid

OTHER INFORMATION

SHIPPING CONTAINERS  Cargo tank

STORAGE CONDITIONS  
Keep away from heat, sparks, and flame. Do not store near strong oxidizing agents.

ADDITIONAL INFORMATION AND REFERENCES

DATE OF LATEST REVISION/REVIEW: 10/85
PERSON RESPONSIBLE FOR MSDS: J. C. Watts, Du Pont Co., C&P Dept., Chestnut Run, Wilmington, DE 19898, (302) 999-4946

*Regulated by DOT only when shipped via water.
**Molten Sulphur is regulated as UN 2448 (IMO page 4061-1).

E-79967  Date: 10/85