

MATERIAL SAFETY DATA SHEET

IDENTIFICATION

NAME

Sulfur

SYNONYMS

Flowers of Sulfur

CAS NAME

Sulfur

I.D. NOS./CODES

NIOSH Registry No: WS4250000

MANUFACTURER/DISTRIBUTOR

E. I. du Pont de Nemours & Co. (Inc.)

ADDRESS

Wilmington, DE 19898

CHEMICAL FAMILY

Nonmetallic Element

FORMULA

S

CAS REGISTRY NO.

7704-34-9

PRODUCT INFORMATION PHONE

(800) 441-9442

MEDICAL EMERGENCY PHONE

(800) 441-3637

TRANSPORTATION EMERGENCY PHONE

CHEMTREC (800) 424-9300

PHYSICAL DATA

BOILING POINT, 760 mm Hg

444.6°C (832°F)

MELTING POINT

113-119°C (235-247°F)

SPECIFIC GRAVITY 2.0**VAPOR PRESSURE**

Negligible.

pH INFORMATION

Not applicable.

SOLUBILITY IN WATER

Insoluble

FORM

Solid

EVAPORATION RATE (BUTYL ACETATE=1)

<1

COLOR

Yellow

APPEARANCE

Crystal, Powder, or Lumps

ODOR

Odorless

HAZARDOUS COMPONENTS

MATERIAL(S)

Sulfur

APPROXIMATE %

100

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)

METHOD PMCC

AUTOIGNITION TEMPERATURE

232°C (450°F)

FLAMMABLE LIMITS IN AIR, % BY VOL.

LOWER 35 mg/L

UPPER Not available.

AUTODECOMPOSITION TEMPERATURE

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.

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.

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

PROPER SHIPPING NAME
Sulphur

HAZARD CLASS 4.1

UN NO. 1350

LABEL(S) Flammable Solid

PACKAGING GROUP NO. III

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

