

CLIP, Chemical Laboratory Information Profile

"Only when you know the hazards, can you take the necessary precautionary measures."

Sulfur

S₈

CAS No.: 7704-34-9

Physical Properties

Exposure Limits

Yellow solid, chunks or powder; or crystals: rhombic or monoclinic.
 At approximately 140 °C sulfur is a viscous red-brown liquid.
 Vapor pressure at 20 °C: negligible
 Melting point: 113 °C
 Boiling point: 445 °C

OSHA PEL: NE
 ACGIH TLV: NE

Hazardous Characteristics

Overall toxicity	Flammability	Destructive to skin/eye	Absorbed through skin	Sensitizer?	Self-reactive?	Incompatible with:
1	1	1	0	No	No	Oxidizing agents and reducing agents, including metals such as copper, silver, and mercury.*

0: None (or very low); 1: Slight; 2: Moderate; 3: High; 4: Severe.

*Reactivity Hazards

When dispersed in the air, finely powdered sulfur can explode if ignited. Impure sulfur often slowly and spontaneously produces toxic hydrogen sulfide. Sulfur reacts violently with strong oxidizing agents, and can catch fire or explode. Sulfur also reacts with reducing agents, for instance many metals; often, the reaction is notably exothermic, particularly so if the sulfur and the metal are both finely divided, well-mixed, and ignited. See Bretherick's *Handbook of Reactive Chemical Hazards* for details and for other incompatibilities.

Cited as known to be or reasonably anticipated to be carcinogenic in NTP-9? No

Identified as a reproductive toxin in Frazier and Hage, *Reproductive Hazards of the Workplace?* No

Typical symptoms of acute exposures:

Mildly irritating if on the skin, in the eyes, or inhaled. If ingested, bacterial action *in vivo* produces toxic hydrogen sulfide.

Principal target organ(s) or system(s):

Eyes, skin.

Storage Requirements

Store with other chemicals in a cool, dry, well-ventilated general storage location.

Notes

ReadMe

This Chemical Laboratory Information Profile is *not* a Material Safety Data Sheet. It is a brief summary for teachers and their students that describes some of the hazards of this chemical as it is typically used in laboratories. On the basis of your knowledge of these hazards and before using or handling this chemical, *you need to select the precautions and first-aid procedures to be followed*. For that information as well as for other useful information, refer to Material Safety Data Sheets, container labels, and references in the scientific literature that pertain to this chemical.

Reproductive Toxins

Some substances that in fact are reproductive toxins are not yet recognized as such. For the best readily available and up-to-date information, refer to "DART/ETIC". See the TOXNET home page at www.sis.nlm.nih.gov and click on "Toxicology search". *Note that some of the data in DART/ETIC have not been peer-reviewed*. See also Linda M. Frazier and Marvin L. Hage, *Reproductive Hazards of the Workplace*; Wiley, 1998; and T. H. Shepard, *Catalog of Teratogenic Agents*, 9th ed.; Johns Hopkins University Press, 1998.

Abbreviations

ACGIH TLV—American Conference of Governmental Industrial Hygienists—Threshold Limit Value. C—Ceiling. CAS—Chemical Abstracts Service. mg/m³—milligrams per cubic meter. NA—Not applicable. NE—Not established. NI—No information. NTP-9—National Toxicology Program, Ninth Annual Report on Carcinogens. OSHA PEL—Occupational Safety and Health Administration—Permissible Exposure Limit. ppm—parts per million. STEL/C—Short-term exposure limit and ceiling.

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Date of preparation: June 20, 2002