

Sulfur Sublimed, Flowers USP

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Sulfur Sublimed, Flowers USP

Synonyms/Generic Names: None

Product Number: 5640

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Call: 920-623-2140 (Monday-Friday 8:00-4:30)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Irritant

Target Organs: None

Signal Words: Warning

Pictograms



GHS Classification:

Skin irritation	Category 2
Flammable solid	Category 2

GHS Label Elements, including precautionary statements:

Hazard Statements:

H228	Flammable solid.
H315	Causes skin irritation.

Precautionary Statements:

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P240	Ground/Bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P332+P313	If skin irritation occurs: Get medical advice/attention.

P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use dry chemical, alcohol-resistant foam or carbon dioxide to extinguish fire.

Potential Health Effects

Eyes	Causes eye irritation
Inhalation	May be harmful if inhaled. Material may be irritating to the mucous membranes and upper respiratory tract.
Skin	May cause irritation.
Ingestion	May be harmful if swallowed.

NFPA Ratings

Health	2
Flammability	1
Reactivity	0
Specific hazard	N/A

HMIS Ratings

Health	2
Fire	2
Reactivity	0
Personal	E

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Sulfur	>99	7704-34-9	231-722-6	S	32.06 g/mol

4. FIRST-AID MEASURES

Eyes	Rinse with plenty of water for at least 15 minutes and seek medical attention.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin	Flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention.
Ingestion	Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention.

5. FIREFIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	May form combustible dust in air. Use appropriate media for adjacent fire. For a small fire, use dry chemical powder. For a large fire, use water spray or fog.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes (sulfur dioxide) under fire conditions. See also Stability and Reactivity section.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Do not let product enter drains. Any release to the environment may be subject to federal/national or local reporting requirements.

Methods and materials for containment and cleaning up	Sweep up and place in a suitable container for disposal. Clean surfaces with water to remove residual contamination. Dispose of all waste or cleanup materials in accordance with local regulations.
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7. HANDLING AND STORAGE

Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Do not breathe dust.

Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area in a tightly-closed, plainly-labeled container. Protect against moisture and light. Maintain adequate ventilation. Wash thoroughly after handling. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Controls:

Component	Exposure Limits	Basis	Entity
Sulfur	5 mg/m ³	TWA	USA OSHA
	15 mg/m ³	TWA	USA OSHA

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

Personal Protection

Eyes	Wear chemical safety glasses with a face shield for splash protection.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear chemical resistant gloves, apron and other protective clothing appropriate to the risk of exposure.
Other	Not Available

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling. Have supplies and equipment for neutralization and running water available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Yellow powder, crystals, lumps or flakes.
Odor	Slight to odorless.
Odor threshold	Not Available
pH	Not Available
Melting point/freezing point	118-120°C (244-248°F)
Initial boiling point and boiling range	435°C (833°F)
Flash point	204°C (405°F)
Evaporation rate	Not Available

Flammability (solid, gas)	Flammable solid
Upper/lower flammability or explosive limit	Upper: 6.83% Lower: 0.17%
Vapor pressure	10 hPa (8 mmHg) at 246°C (475°F) 1 hPa (1 mmHg) at 183.8°C (362.8°F)
Vapor density	Not Available
Relative density	2.05 g/cm ³ at 20°C (68°F)
Solubility (ies)	Insoluble
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	232°C (450°F)
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Excessive heat, ignition sources
Incompatible Materials	Alkali and alkaline earth metals (sodium, potassium, lithium, calcium and magnesium metals), oxidizers, ammonia.
Hazardous Decomposition Products	Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Skin	LD50 Dermal - rabbit - > 2,000 mg/kg
Eyes	Not Available
Respiratory	LC50 Inhalation - rat - 4 h - > 9.23 mg/l
Ingestion	LDLO Oral - rabbit - 175 mg/kg LD50 Oral - rat - > 2,000 mg/kg
Other	LDLO Intravenous - rat - 8 mg/kg LDLO Intravenous - rabbit - 5 mg/kg LDLO Intraperitoneal - guinea pig - 55 mg/kg LDLO Intravenous - dog - 10 mg/kg

Carcinogenicity

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Irritation. Itching, swelling, redness and pain.
Eyes	Irritation. Itching, swelling, redness and pain.
Respiratory	Irritation to mucous membranes and upper respiratory tract characterized by itching, swelling, redness and pain.
Ingestion	Irritation. May cause nausea, vomiting and pain.

Chronic Toxicity	Not Available
Teratogenicity	Not Available
Mutagenicity	Not Available
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Not Available
Reproductive Toxicity	Not Available
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Vertebrate	LC50 - Oncorhynchus mykiss (rainbow trout) - > 180 mg/l - 96 h LC50 - other fish - 866 mg/l - 96 h
Aquatic Invertebrate	EC50 - Daphnia magna (Water flea) - > 5,000 mg/l - 48 h
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Does not accumulate
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Not Available

13. DISPOSAL CONSIDERATIONS

Waste Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container or residue.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	UN1350, Sulfur, 4.1,pg III
TDG	UN1350, SULFUR, 4.1,PG III
IMDG	UN1350, SULFUR, 4.1,PG III
Marine Pollutant	No
IATA/ICAO	UN1350, Sulfur, 4.1,pg III

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Fire Hazard, Acute Health Hazard
SARA 312	Fire Hazard, Acute Health Hazard
SARA 313	Not Listed
WHMIS Canada	Class B-4: Flammable solid

16. OTHER INFORMATION

Revision	Date
Revision 1	07-11-2011
Revision 2	06-06-2012
Revision 3	01/12/2015

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