

SUPPLIER

MATERIAL SAFETY DATA SHEET

GENERATED 03/16/2009, REVISION 03/07/2005, SUPERCEDES REVISION 06/02/1997, DATE
CREATED 10/05/1990

SECTION I - PRODUCT IDENTIFICATION

Copper sulfide Cu₂S, powder and pieces

PRODUCT NAME: Copper sulfide Cu₂S, powder and pieces
PRODUCT CODE: C-MSDS0196
REFERENCE #: 22205-45-4
MANUFACTURER INFORMATION
COMPANY NAME: CERAC, inc.
 1316 W. St. Paul Avenue
 Milwaukee, WI 53233
EMERGENCY CONTACT: CHEMTREC (800)424-9300
ALTERNATE EMERGENCY CONTACT: CERAC, inc. (414)289-9800
CHEMICAL FAMILY: Metal sulfide
CAS NUMBER: 22205-45-4
FORMULA: Cu₂S
MOLECULAR WEIGHT: 159.15
SYNONYMS

Copper sulfide; copper (I) sulfide; natural chalcacite; cuprasulfide; cuprous sulfide; dicopper monosulfide; dicopper sulfide.

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Copper sulfide Cu₂S, powder and pieces

Hazardous Components (Chemical Name)	CAS #	Concentration	OSHA PEL	ACGIH TLV	Other Limits
Copper sulfide	22205-45-4	0.0 - 100.0 %	1 mg/m ³ (dust/mist)	1 mg/m ³ (dust/mist)	NE

US EPA SARA TITLE III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)
Copper sulfide	22205-45-4	No	Yes 1.1.B**	Yes

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Copper sulfide Cu₂S, powder and pieces

PHYSICAL STATES: ☐ Gas ☐ Liquid ☒ Solid
MELTING POINT: 1100.00 C (2012.0 F)
BOILING POINT: N.A.
SPECIFIC GRAVITY (WATER = 1): 5.6 gm/cc at 20.0 C (68.0 F)
BULK DENSITY: No data.
VAPOR PRESSURE (VS. AIR OR MM HG): No data.
VAPOR DENSITY (VS. AIR = 1): No data.
EVAPORATION RATE (VS BUTYL ACETATE=1): No data.

SOLUBILITY IN WATER: insoluble
PERCENT VOLATILE: N.A.
CORROSION RATE: No data.
APPEARANCE AND ODOR
Blue to grayish powder and pieces, no odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Copper sulfide Cu₂S, powder and pieces

FLASH PT: N.A. Method Used: Unknown
EXPLOSIVE LIMITS: LEL: NA UEL: NA
EXTINGUISHING MEDIA

USE: Not applicable. Use suitable extinguishing media for surrounding materials and type of fire.

SPECIAL FIRE FIGHTING PROCEDURES

Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

UNUSUAL FIRE AND EXPLOSION HAZARDS

When heated to decomposition, copper sulfide may emit oxides of sulfur and copper.
When heated in the absence of air it may form Copper and Copper sulfide, CuS.

SECTION V - REACTIVITY DATA

Copper sulfide Cu₂S, powder and pieces

STABILITY: Unstable [] Stable [X]

CONDITIONS TO AVOID - INSTABILITY

None

INCOMPATIBILITY - MATERIALS TO AVOID

Acids and oxidizing agents

HAZARDOUS DECOMPOSITION OR BYPRODUCTS

Oxides of sulfur and copper.

HAZARDOUS
POLYMERIZATION: Will occur [] Will not occur [X]

CONDITIONS TO AVOID - HAZARDOUS POLYMERIZATION

None

SECTION VI - HEALTH HAZARD DATA

Copper sulfide Cu₂S, powder and pieces

HEALTH HAZARDS (ACUTE AND CHRONIC)

Copper compounds: In animals, inhalation of copper dust has caused hemolysis of the red blood cells, deposition of hemofuscin in the liver and pancreas, and injury to the lung cells; injection of the dust has caused cirrhosis of the liver and pancreas, and a condition closely resembling hemochromatosis or bronzed diabetes. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Sulfides have variable toxicity. Sulfides of the heavy metals are generally insoluble and hence have little toxic action except through the liberation of hydrogen sulfide. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

INHALATION:

Acute: May cause a metallic taste in the mouth, congestion of the nasal mucous membranes, irritation to the respiratory tract.

Chronic: May cause ulceration and perforation of the nasal septum and pharyngeal congestion.

INGESTION:

Acute: Poison by intraperitoneal route. May cause acute copper toxicity.

Chronic: May cause irritation to the gastrointestinal tract and chronic copper toxicity. May cause damage to the nervous system, kidneys and enlarge the liver.

SKIN: Acute: May cause irritation.

Chronic: May cause dermatitis.

EYE: Acute: May cause irritation to the conjunctiva.

Chronic: No chronic health effects recorded.

TARGET ORGANS: May affect the respiratory system, skin, liver central nervous system, and kidneys.

CARCINOGENICITY: NTP? No IARC Monographs? No OSHA Regulated? No

CARCINOGENICITY/OTHER INFORMATION

----- COPPER SULFIDE TOXICITY DATA -----

otr-ham: emb 380 umol/L. dnd-ham: emb 380 umol/L.

RECOMMENDED EXPOSURE LIMITS

See "Section II"

LD 50 / LC 50

See "Carcinogenicity/Other Information"

SIGNS AND SYMPTOMS OF EXPOSURE

INHALATION: May cause a red, dry throat, metallic taste in mouth, congestion of the nasal and pharyngeal, sneezing, headache, excitability, dizziness and difficulty breathing.

INGESTION: Acute copper toxicity may cause: fever, tachycardia, hypotension, hemolytic anemia with intravascular hemolysis, oliguria, uremia, coma and cardiovascular collapse. Chronic copper toxicity may cause: nausea, vomiting, epigastric pain, yellow watery diarrhea, dizziness, general debility, jaundice, and green stools, saliva and vomitus. **SKIN:** May cause redness, itching and swelling.

EYE: May cause redness, itching, burning and watering.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Pre-existing respiratory, gastric disorders and an increased risk for individuals with Wilson's disease.

EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention if symptoms persist.

INGESTION: Give 1-2 glasses of milk or water and induce vomiting; seek medical attention immediately. Never induce vomiting or give anything by mouth to an unconscious person.

SKIN: Remove contaminated clothing; brush material off skin; wash affected area with mild soap and water; seek medical attention if symptoms persist.

EYE: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE Copper sulfide Cu₂S, powder and pieces
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STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Wear appropriate respiratory and protective equipment specified in section VIII-control measures. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

WASTE DISPOSAL METHOD

Dispose of in accordance with local, state and federal regulations.

HAZARD LABEL INFORMATION:

Store in cool, dry area Store in tightly sealed container Wash thoroughly after handling

PRECAUTIONS TO BE TAKEN IN HANDLING

None

PRECAUTIONS TO BE TAKEN IN STORING

None

OTHER PRECAUTIONS

None

SECTION VIII- CONTROL MEASURES Copper sulfide Cu₂S, powder and pieces

PROTECTIVE EQUIPMENT SUMMARY - HAZARD LABEL INFORMATION:

NIOSH approved respirator Impervious gloves Safety glasses Clothes to prevent skin contact

RESPIRATORY EQUIPMENT (SPECIFY TYPE)

NIOSH approved respirator

EYE PROTECTION

Safety glasses

PROTECTIVE GLOVES

Rubber gloves

OTHER PROTECTIVE CLOTHING

Protective gear suitable to prevent contamination

VENTILATION

Local Exhaust: Local exhaust ventilation may be necessary to control any air contaminants to within their PELs or TLVs during the use of this product. Special: None

Mechanical (Gen): Good general ventilation is recommended.

Other: None

WORK/HYGIENIC/MAINTENANCE PRACTICES

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

SECTION IX - ADDITIONAL COMMENTS Copper sulfide Cu₂S, powder and pieces

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Abbreviations used: NA=Not Applicable NE: Not Established

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