



LTS Research Laboratories, Inc.  
Safety Data Sheet  
Copper Cadmium Antimony Sulfide

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1. Product and Company Identification

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Trade Name: Copper cadmium antimony sulfide  
Chemical Formula:  $Cu_xCd_ySbS_4$   
Recommended Use: Scientific research and development

Manufacturer/Supplier: LTS Research Laboratories, Inc.  
Street: 37 Ramland Road  
City: Orangeburg  
State: New York  
Zip Code: 10962  
Country: USA  
Tel #: 855-587-2436 / 855-lts-chem

24-Hour Emergency Contact: 800-424-9300 (US & Canada)  
+1-703-527-3887 (International)

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2. Hazards Identification

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Signal Word: Danger



Hazard Statements: H302: Harmful if swallowed  
H331: Toxic if inhaled  
H341: Suspected of causing genetic defects  
H350: May cause cancer  
H361: Suspected of damaging fertility or the unborn child  
H372: Causes damage to organs through prolonged or repeated exposure

Precautionary Statements: P260: Do not breathe dust/fume/gas/mist/vapours/spray  
P281: Use personal protective equipment as required  
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
P308+P313: IF exposed or concerned: Get medical advice/attention  
P311: Call a POISON CENTER or doctor/physician  
P405: Store locked up  
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4):  
Health: 2  
Flammability: 1  
Physical: 1

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### 3. Composition

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Chemical Family:	Ceramic
Additional Names:	None
Copper sulfide (CuS):	
Percentage:	0-100 wt%
CAS #:	22205-45-4
EC #:	244-842-9
Antimony sulfide (Sb <sub>2</sub> S <sub>3</sub> ):	
Percentage:	0-100 wt%
CAS #:	1345-04-6
EC #:	215-713-4
Cadmium sulfide (CdS):	
Percentage:	0-10 wt%
CAS #:	1345-04-6
EC #:	215-713-4

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### 4. First Aid Procedures

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General Treatment:	Seek medical attention if symptoms persist.
Special Treatment:	None
Important Symptoms:	None
Inhalation:	Remove victim to fresh air. Supply oxygen if breathing is difficult.
Ingestion:	Give one to two glasses of water and induce vomiting. Never induce vomiting or give anything by mouth to an unconscious person.
Skin:	Wash affected area with mild soap and water. Remove any contaminated clothing.
Eyes:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

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### 5. Firefighting Measures

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Flammability:	Somewhat flammable
Extinguishing Media:	No special restrictions – use suitable extinguishing agent for surrounding material and type of fire.
Spec. Fire Fighting Procedure:	Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

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### 6. Accidental Release Measures

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If Material Is Released/Spilled:	Wear appropriate respiratory and protective equipment specified in special protection information. 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 disposal. Take care not to raise dust.
Environmental Precautions:	Isolate runoff to prevent environmental pollution.

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## 7. Handling and Storage

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Handling Conditions:	Wash thoroughly after handling.
Storage Conditions:	Store in a cool dry place in a tightly sealed container. Store apart from materials and conditions listed in section 10.
Work/Hygienic Maintenance:	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.
Ventilation:	Provide sufficient ventilation to maintain concentration at or below threshold limit.

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## 8. Exposure Controls and Personal Protection

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Permissible Exposure Limits:	0.005 mg/m <sup>3</sup> as Cd, long-term value
Threshold Limit Value:	0.002 mg/m <sup>3</sup> as Cd, long-term value
Special Equipment:	None
Respiratory Protection:	Use a respirator with type P100 (USA) or P3 (EN143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.
Protective Gloves:	Nitrile rubber, NBR 0.11mm thick.
Eye Protection:	Safety glasses or goggles
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

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## 9. Physical and Chemical Characteristics

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Color	Grey
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Insoluble
Boiling Point:	N/A
Melting Point:	N/A
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	N/A
Molecular weight:	N/A

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## 10. Reactivity

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Stability:	Stable under recommended storage conditions
Reacts With:	Acids, Oxidizing agents
Incompatible Conditions:	None
Hazardous Decomposition Products:	Metal oxide fume, Sulfur oxides, Hydrogen sulfide, Copper oxides, Cadmium oxide

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## 11. Toxicological Information

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### Potential Health Effects:

Eyes:	May cause irritation
Skin:	Irritant to skin and mucous membranes.
Ingestion:	May cause irritation
Inhalation:	May cause irritation
Chronic:	N/A

### Signs & Symptoms:

N/A

### Aggravated Medical Conditions:

N/A

### Median Lethal Dose:

1166 mg/kg for Mouse by mouth  
7080 mg/kg for Rat by mouth

### Carcinogen:

NTP-K: Known to be carcinogenic: sufficient evidence from human studies.  
IARC-1: carcinogenic to humans: sufficient evidence of carcinogenicity.  
EPA-B1: Probable human carcinogen, limited evidence of carcinogenicity from epidemiologic studies  
ACGIH A2: Suspected human carcinogen: Agent is carcinogenic in experimental animals at dose levels, by routes of administration, at sites, of histologic types, or by mechanisms considered relevant to worker exposure. Available epidemiologic studies are conflicting or insufficient to confirm an increased risk of cancer in exposed humans.

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## 12. Ecological Information

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### Aquatic Toxicity:

High

### Persistent Bioaccumulation Toxicity:

No

### Very Persistent, Very Bioaccumulative:

No

### Notes:

Very toxic for aquatic organism.  
May cause long lasting harmful effect on aquatic life.  
Do not allow material to be released to the environment without proper governmental permits.  
Do not allow product to reach any water sources.  
Danger to drinking water if even extremely small quantities leak into the ground.  
Also poisonous for fish and plankton in water bodies.  
Avoid transfer into the environment.  
Toxic to aquatic life.

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## 13. Disposal Considerations

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Dispose of in accordance with local, state, national, and international regulations.

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#### 14. Transportation Data

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Hazardous: Hazardous as powder and pieces



Hazard Class: 6.1 Toxic substances  
Packing Group: III  
UN Number: UN1549  
Proper Shipping Name: Antimony compounds, inorganic, solid, n.o.s. (Copper cadmium antimony sulfide)

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#### 15. Regulatory Information

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Sec 302 Extremely Hazardous: No  
Sec 304 Reportable Quantities: N/A  
Sec 313 Toxic Chemicals: Components

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#### 16. Other Information

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This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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