



# Super Conductor Materials, Inc.

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## SAFETY DATA SHEET

Identity: Cadmium Arsenide

Formula: Cd3As2

### SECTION I - GENERAL INFORMATION

Manufacturer: Super Conductor Materials, Inc.

The information below is believed to be accurate and represents the best information available to Super Conductor Materials, Inc. However, SCM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

### SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular weight: 487.04

CAS #	OSHA PEL	ACGIH TLV	%
12006-15-4	5 ug (Cd)/m3	.05mg (Cd)/m3	100.0%

### SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A

Vapor Pressure (vs. air or mmHg): N/A

Melting Point: N/A

Density: 6.21 g/cc

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Decomposes/soluble in HNO3

*Appearance and odor:* Dark Gray pieces, no odor

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

*Method Used:* Unknown

*Explosive Limits:* LEL: N/A

UEL: N/A

*Extinguishing Media:* Use suitable extinguishing agent for surrounding material 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:*

Dangerous when heated to decomposition or when metallic arsenic contacts acids or acid fumes, or when water solutions of arsenicals are in contact with active metals such as iron, aluminum



and zinc. Cadmium arsenide may emit toxic fumes of arsenic and cadmium. Dust-air mixtures may be explosive. Finely divided metal may be pyrophoric in air.

SECTION V - REACTIVITY DATA

*Stability:* Stable

*Conditions to Avoid (instability):* None

*Incompatibility (materials to avoid):* Acids and acid fumes

*Hazardous Decomposition or Byproducts:* Airborne cadmium and arsenic fumes, cadmium oxide and hydrogen gas.

*Hazardous Polymerization:* Will not occur

*Conditions to avoid (hazardous polymerization):* None

SECTION VI - HEALTH HAZARD DATA

*Route of entry:* Inhalation? Yes    Ingestion? Yes    Eyes? Yes    Skin? Yes    Other? No

To the best of our knowledge the chemical, physical and toxicological properties of cadmium arsenide have not been thoroughly investigated and recorded.

Cadmium compounds are confirmed carcinogens producing lung tumors. Poison by ingestion. Inhalation of fumes or dusts affects the respiratory tract and the kidneys. Brief exposure to high concentrations may result in pulmonary edema and death. Fatal concentrations may be breathed without sufficient discomfort to warn a worker to leave the exposure. Cadmium oxide fumes can cause metal fume fever. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Inorganic arsenic compounds are confirmed human carcinogens producing tumors of the mouth, esophagus, larynx, bladder and para nasal sinus. A recognized carcinogen of the skin, lungs and liver. (Sax, Dangerous Properties of Industrial Material, eighth edition)

*Signs and Symptoms of Overexposure:*

*Inhalation:* Throat dryness, cough, headache, vomiting, chest pain, extreme restlessness and irritability. Pneumonitis, possible bronchopneumonia. Chronic arsenic poisoning may cause: loss of appetite, cramps, nausea, constipation or diarrhea, damage to the liver and blood, kidney and nervous system disorders.

*Ingestion:* Increased salivation, disturbances in the choking, vomiting, abdominal pain, anemia, renal dysfunction, diarrhea, tenesmus. Acute arsenic poisoning may cause; irritation of the stomach and intestines with nausea, vomiting, diarrhea, shock, weak, rapid pulse, cold sweats, coma and death. Chronic arsenic poisoning may cause: loss of appetite, cramps, nausea, constipation or diarrhea, damage to the liver and blood, kidney and nervous system disorders.

*Skin:* Redness, itching, burning and a change in pigmentation.

*Eye:* Redness, itching, burning and watering.

*Health Hazards (Acute and Chronic):*

*Inhalation:*



Acute: May cause irritation of the upper respiratory system, vertigo, constriction of the throat, metallic taste in the mouth and cough, dyspnea, cyanosis, chest pain, flu-like symptoms and pulmonary edema.

More severe exposure may cause pulmonary fibrosis/hypertrophy of bronchial vessels and renal necrosis and/or liver damage.

Chronic: May cause irreversible lung injury, pulmonary fibrosis, damage to the olfactory nerve. All routes of entry may cause kidney damage, osteomalacia, osteoporosis, and spontaneous fractures, hemolytic and iron-deficiency anemia, weight loss, and irritability, renal tubular necrosis, cardiovascular effects, liver damage and prostatic and respiratory cancers. May cause chronic arsenic poisoning.

*Ingestion:*

Acute: May cause irritation of mouth and throat, increased salivation, burning sensation and cramps in stomach, nausea, headache, vomiting, weakness, dizziness, diarrhea, shock, convulsions and acute arsenic poisoning.

Chronic: May cause irreversible renal tubular dysfunction, functional changes in the liver, pancreas, adrenal glands and chronic arsenic poisoning.

*Skin:*

Acute: Direct contact may result in irritation.

Chronic: Repeated or prolonged exposure may result in dermatitis, change in pigmentation and cancerous changes.

*Eye:*

Acute: Direct contact may cause irritation, redness, pain and smarting.

Chronic: Repeated or prolonged exposure may cause conjunctivitis.

*Target Organs:* May affect the respiratory system, kidneys, liver, skin, prostate and blood.

*Carcinogenicity:* NTP? Yes IARC Monographs? Yes OSHA Regulated? Yes

*Medical Conditions Aggravated by Exposure:* Kidney or respiratory dysfunction, skin, blood or bone disorders.

*Emergency and First Aid Procedures:*

*Inhalation:* Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention

*Ingestion:* Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. 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, and seek medical attention if symptoms persist

*Eye:* Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention

**SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE**

*Steps to be taken in case material is released or spilled:*

Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area, provide ventilation and extinguish sources of ignition. 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 state, local, and federal regulations.

*Hazard Label Information:*

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

<b>SECTION VIII - CONTROL MEASURES</b>
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*Protective Equipment Summary (Hazard Label Information):*

NIOSH approved respirator, impervious gloves, safety glasses, clothes to prevent contact.

*Ventilation:*

Local Exhaust: To maintain concentration at low exposure levels.

Local Exhaust: To maintain concentration at or below PEL

Special: Enclose process if possible

Mechanical (General): Not recommended

Other: Engineering and work practices

*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 or smoking. Do not blow dust off clothing or skin with compressed air.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established
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