

Super Conductor Materials, Inc.

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Chemtrec: (800) 424-9300
Poison Center: (800) 562-8236
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SAFETY DATA SHEET

Identity: Yttrium aluminum oxide

Formula: $Y_3Al_5O_{12}$

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: 593.61

CAS #	OSHA PEL	ACGIH TLV	%
12005-21-9	1mg/m ³ (Y)	1mg/m ³ (Al ₂ O ₃)	0.0-100.0%

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: N/D

Boiling Point: N/A

Melting Point: 1760.00°C

Evaporation Rate: N/A

Solubility in water: N/D

Vapor Pressure: (mm hg): N/A

Specific Gravity (water=1) 4.65

Flash Point: N/A

Appearance and odor: White powder and pieces, no odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Method Used: Unknown

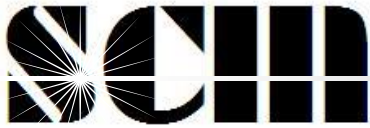
Explosive Limits: LEL: NA UEL: NA

Extinguishing Media:

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, Yttrium aluminate oxide may emit toxic fumes.



SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid-instability: None

Incompatibility – materials to Avoid: Possible halogens.

Hazardous Decomposition or Byproducts: Y_2O_3 , Al_2O_3

Hazardous Polymerization: Will not occur

Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

Routes of entry: Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other? No

To the best of our knowledge the chemical, physical and toxicological properties of yttrium aluminum oxide have not been thoroughly investigated and recorded.

Yttrium is considered a rare earth metal. These metals are moderately to highly toxic. The symptoms of toxicity of the rare earth elements include writhing, ataxia, labored respiration, walking on the toes with arched back and sedation (animals). The rare earth elements exhibit low toxicity by ingestion exposure. However, the intraperitoneal route is highly toxic while the subcutaneous route is poison to moderately toxic. The production of skin and lung granulomas after exposure to them requires extensive protection to prevent such exposure. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Aluminum compounds have many commercial uses and are commonly found in industry. Many of these materials are active chemically and thus exhibit dangerous toxic and reactive properties. Inhalation of fine aluminum oxide particles is associated with Shaver's disease. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Sign and Symptoms of Overexposure:

Inhalation: May cause writhing, ataxia, labored respiration, and sedation.

Ingestion: May cause nausea, vomiting, diarrhea, abdominal burning and cramp-like pain.

Skin: May cause redness and itching.

Eye: May cause redness, itching and watering.

Health Hazards (Acute and Chronic):

Inhalation:

Acute: May cause irritation to the respiratory tract and mucous membrane. Dusts may cause lung damage such as lung granulomas and pulmonary fibrosis. Large doses may cause writhing, loss of muscle coordination, labored respiration, sedation, hypertension, and cardiovascular collapse.

Chronic: Prolonged or repeated inhalation may cause writhing, loss of muscle coordination, labored respiration, sedation, hypertension, and cardiovascular collapse.

Ingestion:

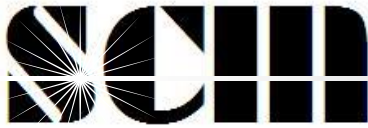
Acute: May cause gastrointestinal irritation and nervous afflictions.

Chronic: May affect the coagulation rate of the blood.

Skin:

Acute: May cause irritation.

Chronic: May cause dermatitis.



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Eye:

Acute: May cause irritation.

Chronic: No chronic health effects recorded.

Target Organs: May affect the respiratory system and blood

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

Medical Conditions Aggravated by Exposure: Pre-existing respiratory disorder

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.

Eye: Flush eyes and under eyelids with lukewarm water for at least 15 minutes. See medical attention if irritation persists.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

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

Wear appropriate respiratory equipment specified in section VIII-Control Measures. Isolate spill area, 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 state, local, and federal regulations.

Hazard Label Information:

Store in cool, dry area; store in tightly sealed container; wash thoroughly after handling.

SECTION VIII - CONTROL MEASURES

Protective Equipment Summary (Hazard Label Information):

NIOSH/MSHA approved respirator, impervious gloves, vented goggles, and clothes prevent skin contact.

Ventilation:

Local exhaust: To maintain concentration at low exposure levels.

Mechanical (General): Good general ventilation is recommended.

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