

Material Safety Data Sheet

Identity: Scandium

Formula: Sc

SECTION I - GENERAL INFORMATION

Manufacturer: [Stanford Advanced Materials](#) (SAM)

The information below is believed to be accurate and represents the best information available to SAM. However, SAM 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: 44.96

CAS #	OSHA PEL	ACGIH TLV	%
7440-20-2	N/A	N/A	0.0-100%

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: 2727.0 °C

Melting Point: 1539.0 °C

Evaporation Rate: N/A

water: Insoluble

Specific Gravity (H₂O=1): 2.989g/cc

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

Vapor Density (vs. air=1): N/A Solubility in

Percent Volatile: N/A

Appearance and odor: Silver to grey metallic powder, no odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Flash Point: N/A*Method Used:* Pyrophoric *Explosive Limits:* LEL: N/A

UEL: N/A

Extinguishing Media:

Use Class D or other suitable metal extinguishing agent DO NOT USE WATER

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:

Flammable in the form of dust when exposed to heat, flame or by chemical reaction with oxidizing agents. Samarium metal may react violently in air and to halogens. May react with acids and slowly with water to liberate hydrogen gas

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (stability): None

Incompatibility: Air, moisture, acids, oxidizing materials, halogens

Hazardous Decomposition or Byproducts: hydrogen gas

Hazardous Polymerization: Will not occur

Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

Routes of entry: Inhalation, Skin, Eyes, Ingestion

Health Hazards (Acute and Chronic):

Scandium is considered to have similar properties as rare earth metals. These metals are moderately to highly toxic. The symptoms of toxicity of the rare earth elements include writhing, ataxia, labored respirations, walked in the toes with arched back and sedation. The rare earth elements exhibit low toxicity by ingestion. 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)

Inhalation:

Acute: May cause irritation to the respiratory tract and mucous membrane. Dusts may cause asthma attacks, lung damage such as lung granulomas.

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

Ingestion:

Acute: May cause gastrointestinal irritation

Chronic: May affect the coagulation rate of blood

Skin:

Acute: May cause irritation, rashes, and skin granulomas

Chronic: May cause dermatitis, sensitivity to heat, itching and skin lesions

Eye:

Acute: May cause redness, itching, and watering

Chronic: No chronic hazards recorded

Target Organs: Respiratory system, blood, and skin

Carcinogenicity: NTP? No

IARC Monographs? No

OSHA Regulated? No

Medical Conditions Aggravated by Exposure: Pre-existing respiratory 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:

Scandium is air and moisture sensitive. Handle and store in a controlled environment and inert gas such as Argon (Ar). Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

SECTION VIII - CONTROL MEASURES

Protective Equipment Summary (Hazard Label Information):

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

Ventilation:

Local Exhaust: To maintain concentration at low exposure levels.

Mechanical (General): NOT 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