

Material Safety Data Sheet

Identity: Terbium oxide

Formula: Tb4O7

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: 747.70

Chemical Family: Metal oxide

CAS #	OSHA PEL	ACGIH TLV	Other	%
Terbium oxide	NE	NE		100%

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: NA

Vapor Pressure: NA

Melting Point: NA

Vapor Density: NA

Evaporation Rate: NA

Percent Volatile: NE

Solubility in water: Insoluble

Specific Gravity: (H₂O=1): NE

Appearance and odor: Dark brown powder or black pieces, no odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Flash Point: NA

Method Used: Non-Flammable

Explosive Limits: LEL: NA

UEL: NA

Extinguishing Media: USE: Not Applicable. Use suitable extinguishing media for surrounding materials and type of fire.

Unusual Fire and Explosion Hazards: When heated to decomposition, terbium oxide may emit toxic fumes.

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.

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (instability): None recorded

Incompatibility (Materials to Avoid): None recorded

Hazardous Decomposition or By products: None recorded

Polymerization: Not expected to occur.

SECTION VI - HEALTH HAZARD DATA

Routes of entry: Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes

Health Hazards (Acute and Chronic):

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

Terbium is considered a rare, earth metal. These metals are moderately to highly toxic. The symptoms of toxicity of the rare earth elements include writing, ataxia, labored respiration, walking on toes with and sedation. The rare earth 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, Properties of Materials, eighth edition.

Inhalation:

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

Chronic: Prolonged and repeated inhalation 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 the blood.

Skin:

Acute: May cause irritation, rashes and skin granulomas.

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

Eye:

Acute: May cause irritation.

Chronic: No chronic health effects recorded.

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

LD50/LC50: No toxicity date recorded.

Medical Conditions Aggravated by Exposure:

Inhalation: May cause writhing, ataxia, labored respiration, walking on toes with an arched back and sedation.

Ingestion: May cause nausea, vomiting, diarrhea, abdominal burning and cramp-like pain.
Skin: May cause redness, itching and burning.
Eye: May cause redness, itching, burning and watering.

Medial Conditions Generally Aggravated by Exposures:
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 if symptoms persist.
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 if symptoms persist.

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-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 and in tightly sealed container. Wash thoroughly after handling. Keep container closed.

SECTION VIII - CONTROL MEASURES

Protective Equipment Summary (Hazard Label Information):

NIOSH approved respirator, impervious gloves, safety glasses, clothes to prevent contact, goggles or face shield.

Respiratory Protection: NIOSH/MSHA – approved dust, mist, vapor cartridge respirator as necessary.

Ventilation:

Local Exhaust: Acceptable
Mechanical (General): Acceptable.

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