

Material Safety Data Sheet

Identity: Tungsten Oxide

Formula: WO₃

SECTION I - GENERAL INFORMATION

Manufacturer: [Stanford Advanced Materials](http://www.samaterials.com) (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: 231.85

CAS #	OSHA PEL	ACGIH TLV	%
1314-35-8	N/A	5mg/m ³	0-100%

SECTION III - PHYSICAL CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A

Specific Gravity (H₂O=1): 7.16 gm/cc

Melting Point: 1473 °C

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

Evaporation Rate: N/A

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

in water: Insoluble

Percent Volatile: N/A

Appearance and odor: Violet blue or yellow green, heavy powder or pieces, no odor. When heated, turns dark orange.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Flash Point: N/A

Flammability: Non-Flammable

Extinguishing Method: In case of fire, use suitable methods for surrounding fires.

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, tungsten oxide may emit toxic fumes.

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid: None

Incompatibility (Materials to Avoid): Lithium, ClF_3 , Cl_2

Hazardous Decomposition ByProducts: None recorded

Hazardous Polymerization: Will not occur

Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

Routes of Entry: Inhalation: Yes Ingestion: Yes Eyes: Yes Skin: Yes Other: N/A

Signs of Exposure:

Inhalation: May cause a red, dry throat, coughing and shortness of breath.

Ingestion: May cause diarrhea.

Skin: May cause redness and itching.

Eye: May cause redness, itching and watering.

Health Hazards (Acute and Chronic):

To the best of our knowledge, the chemical, physical and toxicological properties of tungsten oxide has not been thoroughly investigated and recorded.

Tungsten compounds, industrially, do not constitute an important health hazard. Exposure is related chiefly to the dust arising from the crushing and milling of the two chief ores of tungsten, namely sheltie and wolframite. Sax Dangerous Properties of Industrial Materials, eighth edition.

Inhalation:

Acute: May cause irritation to the respiratory tract.

Chronic: No chronic health effects recorded.

Ingestion:

Acute: Moderately toxic by ingestion.

Chronic: Large overdose may cause nervous system disturbances and diarrhea.

Skin:

Acute: May cause abrasive irritation.

Chronic: No chronic health effects recorded.

Eye:

Acute: May cause abrasive irritation.

Chronic: No chronic health effects recorded.

Target Organs: May effect respiratory and central nervous system. *Carcinogenicity:*

NTP - Yes IARC Monographs - Yes OSHA Regulated – Yes

Medial conditions Generally Aggravated by Exposure: Pre-existing 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 – SPECIAL PRECAUTIONS

Precautions to be taken in Handling and Storage: Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

Steps to be taken in case material is released or spilled: Wear appropriate respiratory and protective equipment specified below. Isolate spill area and provide ventilation. Vacuum up spill using 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: In accordance with Federal, State and Local Regulations.

SECTION VIII – PROTECTIVE EQUIPMENT

Protective Equipment Summary (Hazard Label Information):

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

Ventilation:

Local Exhaust: To maintain concentration at low exposure levels.

Mechanical (General): 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.