

# Tungsten

## MATERIAL SAFETY DATA SHEET

### I. PRODUCT IDENTIFICATION

**Manufacturer/Supplier:**

ESPI Metals

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**Product Name:** Tungsten

**Synonym:** Wolfram

**Formula:** W

**CAS Number:** 7440-33-7

## II. HAZARDOUS INGREDIENTS

**Hazardous Component:** Tungsten

**Percent (%):** 0-100

**OSHA/PELL:** 5 mg/m<sup>3</sup>

**ACGIH/TLV:** 5 mg/m<sup>3</sup>

**HMIS Ratings (Powder):**

**Health:** 2

**Flammability:** 3

**Reactivity:** 0

## III. PHYSICAL DATA

**Boiling Point:** 5660 °C

**Melting Point:** 3390 to 3430 °C

**Specific Gravity:** 19.35 at 20 °C

**Solubility in H<sub>2</sub>O:** Insoluble

**Appearance and Odor:** Gray solid, gray to black powder, no odor.

## **IV. FIRE AND EXPLOSION HAZARDS DATA**

**Flash Point:** N/A

**Autoignition Temperature:** N/A

**Flammable Limits:** **Upper:** N/A      **Lower:** N/A

**Extinguishing Media:** For fires involving metal powders: Use Class D or other metal extinguishing agent. For fires involving solid forms of the material: Use extinguishing media suitable for surrounding material and type of fire.

**Special Firefighting Procedures:** Firefighters must wear full face, self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.

**Unusual Fire and Explosion Hazards:** Dust may present a fire or explosion hazard under favoring conditions of particle size, dispersion and strong ignition source. However, this is not expected to be a problem under normal handling conditions. May release metal oxide fumes under fire conditions.

## **V. HEALTH HAZARD INFORMATION**

**Effects of Exposure:**

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

Industrially, this element does 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 scheelite and wolframite. Large overdoses cause central nervous system disturbances, diarrhea, respiratory failure and death in experimental animals (Sax, Dangerous Properties of Industrial Materials).

**Acute Effects:**

**Inhalation:** May cause irritation to the respiratory tract.

**Ingestion:** None recorded.

**Skin:** May cause abrasive irritation.

**Eye:** May cause abrasive irritation.

**Chronic Effects:**

**Inhalation:** None recorded.

**Ingestion:** Large overdoses may cause nervous system disturbances, and diarrhea.

**Skin:** None recorded.

**Eye:** None recorded.

**Target Organs:** May affect the respiratory and central nervous systems.

**Medical Conditions Generally Aggravated by Exposure:** Pre-existing respiratory disorders.

**Carcinogenicity:** **NTP:** No                      **IARC:** No                      **OSHA:** No

**EMERGENCY AND FIRST AID PROCEDURES:**

**INHALATION:** Remove victim to fresh air, keep warm and quiet, give oxygen if breathing is difficult and seek medical attention if symptoms persist.

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

**EYE:** Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical

attention if symptoms persist.

## **VI. REACTIVITY DATA**

**Stability:** Stable

**Conditions to Avoid:** None

**Incompatibility (Material to Avoid):** Strong oxidizers.

**Hazardous Decomposition Products:** Metal oxide fume.

**Hazardous Polymerization:** Will not occur

## **VII. SPILL OR LEAK PROCEDURES**

**Steps to be Taken in Case Material is Released or Spilled:** Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area and provide ventilation. Scoop up or 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 raised dust.

**Waste Disposal Method:** Dispose of in accordance with Local, State and Federal regulations.

## **VIII. SPECIAL PROTECTION INFORMATION**

**Respiratory Protection:** Use a NIOSH approved dust, mist respirator when airborne dust concentrations exceed the TLV.

**Ventilation:** Use local exhaust ventilation which is adequate to limit personal exposure to levels which do not exceed the TLV.

**Protective Gloves:** Rubber gloves

**Eye Protection:** Safety Glasses

**Other Protective Clothing or Equipment:** Protective gear suitable to prevent contamination.

## **IX. SPECIAL PRECAUTIONS**

**Precautions to Be Taken in Handling and Storage:** Store in a cool, dry area. Store in a tightly sealed container. Wash thoroughly after handling.

**Other Precautions:** Fine dust generated during grinding operations may ignite if allowed to accumulate and subjected to an ignition source. Maintain good housekeeping procedures to prevent accumulation of dust. Use clean-up methods which minimize dust generation such as vacuuming or wet clean-up. If airborne dust is generated, use an appropriate NIOSH approved respirator. Do not shake clothing or other items to remove dust. Use a vacuum. Avoid dust inhalation and direct skin contact. Do not ingest.

**Work 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 and smoking. Do not blow dust off clothing or skin with compressed air. Maintain eyewash capable of sustained flushing, safety drench shower and facilities for washing.

**DOT Regulations:**

**Solid Forms:**

**Hazard Class:** None

**Powder:**

**Hazard Class:** 4.1

**Identification Number:** UN3089

**Packing Group:** III

**Proper Shipping Name:** Metal powder, flammable, n.o.s. (tungsten)

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. ESPI shall not be held liable for any damage resulting from handling or from contact with the above product.

Issued by: S. Dierks

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