

**PRODUCT NAME:** Tungsten Heavy Alloy

**SECTION 1 - MANUFACTURER IDENTIFICATION**

**MANUFACTURER'S NAME:** Tungsten Heavy Powder, Inc.

**ADDRESS:** 9090 Kenamar Drive, San Diego, CA, 92121

**INFORMATION PHONE:** 858-693-6100

**EMERGENCY CONTACT: (CHEMTREC): 800-424-9300**

**DATE:** November 24, 2004

**Synonyms:** High Density Tungsten Alloy, Tungsten Alloy containing Nickel and Iron.

**CAS #:** 7440-33-7 (Tungsten), 7440-02-0 (Nickel)

**SECTION 2 – COMPOSITION / INFORMATION ON INGREDIENTS**

Material	%	OSHA TWA	ACGIH TWA	ACGIH STEL
Tungsten	70-99	5 insoluble	6 insoluble	10 insoluble
		1 soluble	1 soluble	3 soluble
Nickel	0-21	1 soluble and insoluble	1 insoluble 0.1 soluble	
Iron	0-9	N/a	N/a	N/a

All exposure limits in mg/m<sup>3</sup>

**SECTION 3 – PHYSICAL AND CHEMICAL DATA**

**Appearance:** Gray Metal Solid

**Odor:** No odor

**Boiling Point:** 5660°C

**Vapor Pressure:** N/A

**% Volatiles by Weight:** 0

**Specific Gravity (H<sub>2</sub>O = 1):** 17-18.5

**Water Solubility:** Insoluble

**Melting Point:** 3410°C

**SECTION 4 - FIRE AND EXPLOSION HAZARD DATA**

**Flash Point:** N/A

**Method Used:** Class D Fire Extinguishing (Dry Powder)

**Autoignition Temperature:** N/A

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

**Extinguishing Media:** Tungsten rod, wire and fabricated products are not a fire hazard. Fine dust generated during grinding operations may ignite if allowed to accumulate and subjected to an ignition source. Cover burning material with an inert powder, such as dry sand or limestone, to exclude oxygen.

**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 is not expected to be a problem under normal handling conditions.

**Special Fire Fighting Procedures:** For a fire confined to a small area, use a respirator approved for toxic dusts and fumes. For a large fire involving this material, firefighters must wear self-contained breathing apparatus.

**SECTION 5 – HEALTH HAZARD DATA**

**Threshold Limit Value:** 5 mg/m<sup>3</sup>

**Skin Exposure:** May cause irritation.

**Skin First Aid:** Remove contaminated clothing, brush material off skin, wash affected area well with soap and water. Launder well before use. Seek medical attention if symptoms persist.

**Eye Exposure:** May cause irritation.

**Eye First Aid:** Flush eyes with clean, lukewarm water for 15 minutes. Obtain medical attention if irritation develops. Seek medical attention if symptoms persist.

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(Cont.)

**Inhalation: Acute:** May cause irritation to the respiratory Tract.

**Inhalation: Chronic:** No chronic health effects recorded.

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

**Ingestion: Acute:** No chronic health effects recorded

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

**Ingestion First Aid:** Give 1-2 glasses of milk or water and induce vomiting, seek medical attention if symptoms persist. Never induce vomiting by giving anything by mouth to an unconscious person.

### SECTION 5 – HEALTH HAZARD DATA (Continued)

**Medical Conditions Generally Aggravated By Long Term Exposure:** Pre-existing respiratory disorders.

**Health Hazards:** To the best of our knowledge the chemical physical and toxicological properties of tungsten metal have not been thoroughly recorded. Tungsten compounds: Industrially, this element does not constitute an important health hazard. Exposure is related mainly 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.

### SECTION 6 – SPILL OR LEAK PROCEDURES

**Steps To Be Taken In Case Material Is Released Or Spilled:** Ventilate area of spill. Take care not to raise dust. Use non-sparking tools. Clean up using methods, which avoid dust, generation such as vacuuming (with appropriate filter to prevent airborne dust levels which exceed the TLV), wet dust mop or wet clean up. If airborne dust is generated, use an appropriate NIOSH approved respirator.

**Waste Disposal Method:** Dispose of in accordance with local, state and federal regulations.

### SECTION 7 – SPECIAL PROTECTION INFORMATION

**Ventilation/Respiratory Protection:** Use an appropriate NIOSH approved respirator when airborne dust concentrations exceed the TLV. See (29CFR 1910.134).

**Ventilation:** Use local exhaust ventilation, which is adequate to limit personal exposure to levels, which do not exceed the TLV. If such equipment is not available, use respirators as specified above.

**Skin Protective:** Rubber gloves should be worn.

**Eye Protection:** Safety goggles or glasses are recommended.

### SECTION 8 – HANDLING AND STORAGE

**Handling Precautions and Storage Requirements:** Maintain good housekeeping procedures to avoid 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 respirators. Wash thoroughly after handling and before eating or smoking and at the end of the work shift. Do not shake clothing or other items to remove dust. Use a vacuum. Avoid dust inhalation and direct skin contact. Do not ingest. Tungsten metal may ignite on contact with air. Handle and store in a controlled environment and inert gas such as argon.

### SECTION 9 - STABILITY AND REACTIVITY

**Stability:** Stable.

**Incompatibility (Material to avoid):** Avoid contact with strong oxidizers. Bromide pentafluoride, bromine, chlorine trifluoride, potassium perchlorate, potassium dichromate, nitryl fluorine, fluorine, oxygen difluoride, iodine pentafluoride, hydrogen sulfide, sodium peroxide, lead (IV) oxide, air.

**Hazardous Polymerization:** Will not occur.

**Hazardous Decomposition:** None

**Waste Disposal Method:** Reclaim; remove to waste disposal facility operating in compliance with federal, state, or local environmental control regulations.

### SECTION 10 – REGULATORY INFORMATION

**EPA Regulations:**

**RCRA Hazardous waste number:** Not listed

**SARA/TitleIII categories:** Under applicable definitions, this material may meet the criteria for delayed (chronic) health hazard category.

**SARA 313 Information:** Tungsten is not subject to the reporting requirements of section 313 of Title III of the superfund amendments and Reauthorization act (SARA) of 1986 and 40 CFR Part 372.

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**DOT:** Not regulated  
**Canadian DSL Inventory:** Listed

**TSCA:** This material is registered under the regulation of the Toxic Substance Control Act

<b>SECTION 11 – OTHER INFORMATION</b>
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**Reason for Issue:** New

**Prepared by:** J. Sery

**Approved Date:** November 24, 2004

**Supersedes Date:** N/A

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