

## MATERIAL SAFETY DATA SHEET

### 1. PRODUCT AND MANUFACTURER IDENTIFICATION

*Chemical Name:* Tungsten metal

*Chemical Family:* Refractory Metal (non-ferrous metal)

*Chemical Formula:* W

*Manufacturer:* Bango Alloy Technologies Co.,Ltd.

### 2. COMPOSITION DETAILS

Ingredient name	CAS Number	% WT
Tungsten	7439-98-7	>99%

### 3. PHYSICAL DATA

Melting Point: 3410°C

Boiling point: 5900°C

Specific Gravity (H<sub>2</sub>O=1): 19.3

Vapor Pressure (mm Hg): NA

Appearance and odor: Gray metal/no odor

Vapor Density (Air=1): NA

Evaporation Rate: NA

Solubility in Water: Insoluble

Percent Volatile by Volume: 0

### 4. HAZARDS IDENTIFICATION

Accute Health Effects: Irritating to the skin and eyes on contact. Inhalation will cause irritation to the lungs and mucus membrane. Irritation to the eyes will cause watering and redness. Reddening, scaling, and itching are characteristics of skin inflammation. Follow safe industrial hygiene practices and always wear protective equipment when handling this compound.

Chronic Health Effects: This product has no known chronic effects. Repeated or prolong exposure to this compound is not known to aggravate medical conditions.

Accute Health Effects: This product is not listed by NTP, IARC or regulated as a Carcinogen by SAWS.

### 5. FIRST AID MEASURES

MORE INFORMATION

Web: [www.tungstenalloys.net](http://www.tungstenalloys.net)

Email: [ebiz@ctia.com.cn](mailto:ebiz@ctia.com.cn)

First Aid For Eye: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

First Aid For Skin: In case of contact, flush skin with water. Wash clothing before reuse. Call a physician if irritation occurs.

First Aid For Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

First Aid For Ingestion: If swallowed, call a physician immediately.

## **6. FIRE AND EXPLOSION DATA**

Flammability: Non-Flammable

Flash Points: Not Applicable

Auto-Ignition: Not Applicable

Flammable Limits: Not Applicable

Extinguishing Media: Class D. Tungsten Dust (for example, from grinding) may present a moderate fire hazard if allowed to accumulate and exposed to an ignition source. Cover burning material with an inert powder, such as dry sand or limestone, to exclude oxygen. Wrought products do not readily burn Fire.

Fighting Procedure: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Fire/Explosion Hazards: This material, like most materials in powder form, is capable of creating a dust explosion. Emits toxic fumes under fire conditions.

## **7. ACCIDENTAL RELEASE MEASURES**

Spill Or Leak Procedures: Utilize recommended protective clothing and equipment. Clean spills in a manner that does not disperse dust into the air. Spill area can be washed with water. Collect wash water for approved disposal. Keep from entering water or ground water.

## **8. HANDLING AND STORAGE**

Storage Temperatures: Store at ambient temperature

Shelf Life: Unlimited in tightly closed container.

Special Sensitivity: None

Handling/Storage Precautions: Avoid breathing dust. Avoid getting in eyes or on skin. Wash thoroughly after handling. Store in a dry place away from direct sunlight, heat and incompatible materials. Reseal containers immediately after use. Store away from food and beverages.

## **9. PERSONAL PROTECTION**

Eye Protection: Safety glasses or goggles.

Skin Protection: PVC gloves with impervious boots, apron or coveralls. Employees should wash their hands and face before eating, drinking or using tobacco products.

Respirator: Work ambient concentrations should be monitored and if the recommended exposure limit is exceeded, a NIOSH/MSHA approved dust respirator must be worn.

Ventilation: Use local ventilation if dusting is a problem, to maintain air levels below the recommended exposure limit.

Additional Protective Measures: Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of hazardous chemicals.

## **10. REACTIVITY DATA**

Stability: Tungsten is stable

Incompatibility (materials to avoid): Tungsten is very slightly soluble in nitric acid, sulfuric acid, and aqua regia. It is soluble in a mixture of hydrofluoric acid and nitric acid. Avoid oxidizers. Vigorous reaction with bromine trifluoride. Lead oxide mixed with tungsten becomes incandescent upon heating. Tungsten becomes incandescent in cold fluorine. Iodine pentafluoride reacts spontaneously with tungsten with incandescence.

Hazardous Decomposition Products: None

Hazardous Polymerization: Will not occur

## **11. TOXICOLOGICAL INFORMATION**

RTECS Number: YO7175000

Routes of Exposure: Eye contact. Ingestion. Inhalation. Skin contact.

Toxicity Data: Ipr-Rat LD50: 5 gm/kg Unr-Rat LD50: 2 gm/kg

Chronic Toxic Effects: This product has no known chronic effects. Repeated or prolonged exposure to this compound is not known to aggravate medical conditions.

Acute Toxic Effects: Irritating to the skin and eyes on contact. Inhalation will cause irritation to the lungs and mucus membrane. Irritation to the eyes will cause watering and redness. Reddening, scaling, and itching are characteristics of skin inflammation. Follow safe industrial hygiene practices and always wear protective equipment when handling this compound.

## **12. DISPOSAL CONSIDERATIONS**

Waste Disposal Method: Waste disposal should be in accordance with existing federal, state and local environmental regulations.

## **13. OTHER INFORMATION**

Prepared By: Bango Alloy Technologies

Date: May 16, 2008

Reason For Issue: Updated Format

*The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Metalworking Products shall not be held liable for any damage resulting from handling or from contact with the above product. Any comments or questions should be directed to: Although Xiamen Bango Alloy Technologies has attempted to provide current and accurate information herein, Bango makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage, injury of any kind which may result from or arise out of the use of or reliance on the information by any person. The data contained on this sheet was provided for public display via the Internet.*