



# Metal Mfg. Company, Inc.

3314 Carr Street – PO Box 21198

Houston, Texas 77026

Phone – 713.225.9141 Fax – 713.225.5316

## Material Safety Data Sheet

### Identification

Product Name: A&B Tungsten Carbide Bulk Metal  
Chemical Name: Tungsten Carbide  
Chemical Family: Refractory Metal Carbide  
Synonyms: Hard Metal, Tungsten Carbide  
Molecular Formula: WC

### Ingredients

Tungsten Carbide

CAS Number: 12070-12-1  
Percent by Weight: >99  
OSHA TLV – TWA: 5 mg/m5  
ACGIH TLV – TWA: 5 mg/m5  
NFPA Hazard Rating (Scale 0-5)  
Health: No NFPA Rating  
Fire: 0  
Reactivity: 0

### Physical Data

Description: Gray Powder or solid  
Specific Gravity (H2O=1): 15.7  
Solvent Solubility: N/A  
Boiling Point: 6000 degrees C (10832 degrees F)  
Vapor Density (Air =1): N/A  
% Volatiles by Volume: N/A  
Melting Point: 2870 degrees C (5198 degrees F)  
Solubility in Water: Practically Insoluble  
Evaporation Rate: N/A



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## Fire and Explosion Hazard Data

### Fire and Explosion Hazards

Finely divided tungsten carbide powder or dust from grinding are expected to be a fire and explosive hazard when exposed to high temperature or ignition sources. Particle size and dispersal in air determine reactivity. Tungsten Carbide product, except as powder or dust is not a fire hazard.

### Flash Point

N/A

### Firefighting Media

For localized powder fires, smother with dry sand, dry dolomite, sodium chloride or soda ash.

### Special Firefighting Procedures

Move container from fire area is possible. Cool containers exposed to flame with water from side until well after fire is out. For massive fire in cargo areas, use unmanned hose holder or monitor nozzles; else withdraw and let fire burn. Use soda ash, powdered sodium chloride, or suitable dry powder.

Avoid breathing fumes from burning material. Firefighting personnel must use proper respiratory protection.



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## Reactivity

### Stability

Stable under normal temperatures and pressure.

### Incompatibilities

Tungsten

Carbide with:

Chlorine Trifluoride

Fluorine

Nitrogen Dioxide

Nitrous Oxide

Lead Oxide

Reacts with a flame

Incandescence

Burns with incandescence

if heated to a dull red

Burns with incandescence

if heated to a dull red

Violent Reaction

### Decomposition

Thermal decomposition may release acrid smoke and irritating flames.

### Polymerization

Not known to occur.

## Toxicity

**WARNING** – Overexposure to this material in the form of metallurgical powder, dust, or mist from grinding or sweeping is hazardous to health. May cause eye, skin, and mucous membrane irritation. May cause temporary or permanent respiratory disease. Permanent respiratory disease can lead to disability or death. Certain pulmonary and skin conditions may be aggravated by exposure.

### Carcinogenic status

This material has not been identified as a known or suspected carcinogen.

### Tungsten Carbide

Toxicity has not been quantified. May cause some pulmonary and skin sensitization in dust form.



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## Health Effects and First Aid

### Inhalation

Irritant / Sensitizer

#### Acute Overexposure

Tungsten Carbide: May cause coughing, dyspnea, soreness in the chest, weight loss, hemoptysis, bronchitis, and asthma. May also cause pulmonary fibrosis and radiological changes may be noted in the lungs.

#### Chronic Overexposure

Tungsten Carbide: May cause “hard metal lung” with symptoms as described in acute exposure. Previous exposed individuals may be at increased risk.

#### First Aid

If symptoms of pulmonary involvement develop (coughing, wheezing, shortness of breath), remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep affected person warm and at rest. Get medical attention immediately.

### Skin Contact

Irritant / Sensitizer

#### Acute Overexposure

Tungsten Carbide: May cause irritation with dermatitis, eczema, and itching. May also cause sensitization dermatitis if previously exposed.

#### Chronic Overexposure

Tungsten Carbide: May cause dermatitis.

#### First Aid

If irritation or rash occurs, remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of material remains (approximately 15-20 minutes). Get medical attention.



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## Eye Contact

Irritant

## Acute Overexposure

Tungsten Carbide: May cause irritation with redness, pain, and itching.

## Chronic Overexposure

Tungsten Carbide: May cause conjunctivitis.

## First Aid

If irritation occurs, wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of material remains (approximately 15-20 minutes). Get medical attention immediately.

## Ingestion

Irritant

## Acute Overexposure

Tungsten Carbide: May cause gastrointestinal irritation. Large doses may cause diarrhea.

## Chronic Overexposure

Tungsten Carbide: None reported in humans.

## First Aid

If this material has been swallowed and the person is conscious – immediately give person large amounts of water. After water has been swallowed, induce vomiting. Do not attempt to make an unconscious person vomit. Get medical attention immediately.

## Spill and Leak Procedures

### Steps to be taken if material is released or spilled

Sweep with a minimum of dust generation and place into suitable clean, dry container for later disposal or reclamation. Residue should be cleaned up using a high-efficiency particulate filter vacuum or wet clean up. Use appropriate respiratory protection.

### Waste Disposal Method

This is a valuable material that should be sent to an appropriate reclamation facility if available. If material cannot be sent to a reclamation facility, disposal should be made in compliance with federal, state and local environmental regulations.



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## Control Methods

### Ventilation

Provide local exhaust ventilation or general dilution ventilation to maintain levels below TLV-TWA.

### Respiratory Protection

25 mg/m<sup>3</sup> or less – Single-use dust respirator with quarter-mask face-piece.

50 mg/m<sup>3</sup> or less – Half-mask dust respirator.  
Supplied air respirator with a half-mask face-piece.

>50 mg/m<sup>3</sup> – Full face-piece dust respirator. Supplied air respirator with a full face-piece. Powdered air purifying respirator (positive-pressure) with a high-efficiency filter.

### Firefighting

Self-contained breathing apparatus with a full face-piece operated in pressure-demand or other positive-pressure mode.

## Protective Equipment

### Clothing

Employees must wear appropriate protective clothing and equipment to prevent repeated or prolonged skin contact with this substance. Soiled clothing should be laundered separately.

### Gloves

Employees must wear appropriate protective gloves or barrier creams to prevent contact with this substance.

### Eye Protection

Safety glasses with side shields or goggles are recommended. Where there is any possibility that an employee may be exposed to this substance, the employer should provide an eye-wash fountain within the immediate work area for emergency use.



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## Special Precautions

### Handling and Storage

Avoid dispersion of dust in air. Finely divided particles, dust or fumes may be flammable or explosive. Keep away from sparks or ignition sources. Contents should be stored in a clean, dry, cool area.

### Other Precautions

Wash hands thoroughly after handling, before eating or smoking. Do not shake clothing, rags, or other items to remove dust. Dust should be removed by washing or vacuuming. Periodic medical examinations are recommended for individuals regularly exposed to dust.

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