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February 22, 2022

To our valued customers,

Following this cover letter is our most recent revision of our Safety Data Sheet (SDS) for the solid carbide and cobalt products we manufacture. It is designed to comply with the Occupation Safety and Health Administration Hazard Communication Standard 29CFR1910.1200. This new SDS replaces all previous revisions.

**This revision added pictograms and warning statements to meet the State of California's Proposition 65 requirement. California residents, [please see last page of this document](#) for this warning.**

We at YG1 Tool Company urge our customers to carefully review the information in this SDS in its entirety-- including the final Section 16: user responsibilities and disclaimer limitation.

We are pleased to have you as a customer and wish to ensure that you have the most current safety information about our products available to you. This newly revised SDS has been compiled from information supplied to us by our vendors of the carbide and cobalt raw materials used in the production of our products. Information about special application grades is available upon request. Please contact us if you have any questions concerning the safe use of our products.

Best regards,

Director  
YG1



## SAFETY DATA SHEET: SOLID CARBIDE CUTTING TOOLS SOLID CARBIDE BLANKS

### SECTION 1: Product and Company Identification

CHEMICAL NAME: Tungsten carbide with cobalt binder

TRADE NAME: Solid carbide cutting tools, solid carbide blanks, carbide burrs- solid and brazed

PRODUCT USE DESCRIPTION: Shaping products made with milling machines

IMPORTANT CONTACT NUMBERS: 800-765-8665; FAX: 847-634-3755; [www.YG1USA.com](http://www.YG1USA.com)

### SECTION 2: Hazard Identification

Pictograms: WARNING



CARCINOGEN



Precautions: Irritant (skin and eye), Skin Sensitizer, Respiratory Tract Irritant.

NOTE: The airborne dust created when sharpening the cutting edges of solid carbide tools is potentially hazardous. Carbide cutting tools may shatter under certain conditions during use. (See Section 3 below for further information.)

### Section 3: Composition on ingredients and other information

MATERIAL	AMOUNT BY Weight	CAS#	OSHA TLV	ACGIH
Tungsten (Limit is for insoluble tungsten compounds)	88 - 95% (*)	7440-33-7	5 mg/cubic meter	5 mg/cubic meter
Cobalt (Limit is for dust)	5 - 12% (*)	7440-48-4	0.05 mg/cubic meter	0.05 mg/cubic meter

(\*) Depends on grade specifications

**Chemical properties:** This product is 88 to 95 percent tungsten carbide and 5 to 12 percent cobalt. Both of these metal products are listed on OSHA and ACGIH as hazardous elements. (Various other metal powders are used in very small amounts as grain growth inhibitors.)

**Appearance:** Shiny silver gray cylindrical shaped metal with varying colors of surface coatings on the cutting edges.

## **SECTION 4: First aid measures**

(The first aid measures listed here are applicable for dusts and mists. The solid carbide products manufactured and sold by YG1 Tool Company do not pose an immediate health hazard to individuals that come in contact with them as provided for their intended use. However, those that have the ability to sharpen used solid carbide cutting tools need to also follow the guidelines listed in Section 8 of this document.

**Inhalation:** If symptoms of pulmonary involvement develop (coughing, wheezing, shortness of breath, etc.) remove the affected person from exposure and seek medical attention.

**Skin Contact:** If irritation or rash occurs thoroughly wash the affected area with soap and water and isolate the area from exposure. If the irritation or rash persists, seek medical attention.

**Eye Contact:** If irritation occurs, flush with copious amounts of water. If irritation persists, seek medical attention.

**Ingestion:** If substantial quantities are swallowed, dilute with a large amount of water, induce vomiting and seek medical attention.

## **SECTION 5: Firefighting measures:**

Hardened solid carbide cutting tools are not a fire hazards in themselves: (**FLASH POINT: N/A FLAMMABLE LIMITS: N/A**)  
The dry dusts generated while grinding them and then allowed to accumulate for a long period of time may ignite if subjected to an ignition source.

**Extinguishing Media:** Smother powder fires with dry sand or dry dolomite. An ABC type fire extinguisher or flooding with water will also work.

**Special Fire Fighting Procedures:** For powder fires confined to a small area, use a respirator approved for toxic dusts and fumes. For a large fire the fire fighters should use self-contained breathing apparatus.

**Unusual Fire and Explosion Hazards:** Accumulated dusts may present a fire or explosion hazard under the rare conditions of: particle size, dispersion, and a strong ignition source. However, this is not expected to be a problem under normal handling conditions.

## **SECTION 6: Accidental release measures**

(This section does not apply to solid carbide cutting tools)

## **SECTION 7: Handling and storage measures**

(No special handling or storage measures are needed for solid carbide cutting tools).

## SECTION 8: Exposure control

**Respiratory Protection Equipment:** Use an appropriate NIOSH approved respirator if airborne carbide dust concentrations exceed the appropriate PEL or TLV listed in Section 3 of this Safety Data Sheet. (Also refer to: 29CFR 1910.134)

**Ventilation:** Use local exhaust ventilation which is adequate to limit personal exposure to airborne dust created when sharpening a solid carbide cutting tool. If such equipment is not available, respiratory protection should be used (see above information under Respiratory Protection Equipment).

**Protective Gloves:** Gloves are recommended when contact with carbide dust or mist is likely. Solid carbide cutting tools are very sharp, so leather or leather like gloves is recommended.

**Barrier Cream:** Barrier cream may be used wherever skin is exposed to carbide dust or mist.

**Eye Protection:** Safety glasses with side shields or goggles are recommended however carbide cutting tools are being used. (For example: solid carbide brazed burr- the carbide head could come off of the shank if misused.)

## SECTION 9: Physical and chemical properties

Vapor Pressure: N/A

Vapor Density: N/A

Solubility in water: Insoluble

Freezing Point: N/A

Odor Threshold: N/A

Specific Gravity: 10.0 to 15.5 (H<sub>2</sub>O= 1)

Evaporation Rate: N/A

Physical State: Solid

pH: N/A

Boiling Point: N/A

How best monitored (as dust): Air samples

## SECTION 10: Stability and reactivity

Conditions to avoid: no data available

Hazardous decomposition: no data available

Hazardous reactions: no data available

## SECTION 11: Toxicology information

ROUTES OF EXPOSURE: Skin contact, eye contact, acute inhalation, chronic inhalation, and ingestion

EFFECTS OF EXPOSURE: Carcinogenicity by NTP or IARC, Sensitization (Also see Section 11)

**Inhalation:** Dusts or mists can cause irritation of the nose and throat. Inhalation can result in an allergic reaction in individuals previously sensitized, causing difficult breathing. Dusts or mists also have the potential for causing transient or permanent respiratory disease, including occupational asthma and interstitial fibrosis in a small percentage of exposed individuals. Symptoms include productive cough, wheezing, shortness of breath, chest tightness, and weight loss.

**Skin Contact:** The solid product, dust, or mist can cause irritation or an allergic skin rash due to cobalt sensitization in people susceptible to allergic reaction.

**Eye Contact:** Can cause irritation or conjunctivitis.

**Ingestion:** Ingesting large amounts of cobalt over a period of time has the potential for causing blood, heart, and other organ problems.

## **SECTION 12: Ecological Information**

(This section is not regulated by O.S.H.A.)

## **SECTION 13: Disposal**

Solid carbide cutting tools may be reclaimed at any local scrap metal facility.

## **SECTION 14: Transportation**

No special transportation or handling is required for solid carbide cutting tools

## **SECTION 15: Regulatory information**

**WARNING: This product contains chemicals known to the State of California to cause cancer!**

Solid carbide cutting tools contain substances listed on Federal and some State regulation lists:

Cobalt (7440-48-4):	USA Toxic Substances Control Act Inventory USA SARA Section 313 California Proposition 65 Carcinogens List
Tungsten (7440-33-7):	USA Toxic Substances Control Act Inventory



## SAFETY DATA SHEET: HIGH SPEED STEEL

### SECTION 1: Product and Company Identification

CHEMICAL NAME: Iron, Tungsten, Cobalt, Molybdenum, Vanadium, Chromium, Carbon, Manganese, Copper, Silicon, Nitrogen, Phosphorus, Sulfur

TRADE NAME: High Speed Steel

PRODUCT USE DESCRIPTON: Shaping products made with milling machines

IMPORTANT CONTACT NUMBERS: 800-765-8665; FAX: 847-634-3755; [www.YG1USA.com](http://www.YG1USA.com)

### SECTION 2: Hazard Identification



Pictograms: CARCINOGEN CORROSIVE WARNING

**Precautions:** Irritant (skin and eye), Skin Sensitizer, Respiratory Tract Irritant.

**NOTE:** The airborne dust created when sharpening the cutting edges of High Speed tools is potentially hazardous. High Speed tools may shatter under certain conditions during use. (See Section 3 below for further information.)

### Section 3: Composition on ingredients and other information

MATERIAL	AMOUNT BY Weight	CAS#	OSHA TLV	ACGIH
Tungsten (Limit is for insoluble tungsten compounds)	4.8 – 12.8% (*)	7440-33-7	5 mg/cubic meter	5 mg/cubic meter
Cobalt (Limit is for dust and fumes)	11.5% (*)	7440-48-4	0.02 mg/cubic meter	0.02 mg/cubic meter
Molybdenum (Limit is for insoluble compounds) (fume/mist)	6.2% (*)	7439-98-7	10 mg/cubic meter	10 mg/cubic meter
Chromium (Limit is for soluble compounds)	3.8 – 4.5% (*)	7440-47-3	0.5 mg/cubic meter	0.5 mg/cubic meter
Carbon (Limit is for dust)	1.0 – 1.65% (*)	1333-86-4	3 mg/cubic meter	3 mg/cubic meter
Manganese (Limit is for fume)	0.2 – 0.4% (*)	7439-96-5	0.2 mg/cubic meter	0.2 mg/cubic meter

Copper (Limit is for dust and mist)	0.25% (*)	7440-50-8	1.0 mg/cubic meter	1.0 mg/cubic meter
Silicon (Limit is for dust) (*) Depends on grade specifications	0.7 - 0.15% (*)	7440-21-3	No data available	No data available

**Chemical properties:** This product is 4 to 13 percent tungsten carbide and 11.5 percent cobalt. Both of these metal products are listed on OSHA and ACGIH as hazardous elements. (Various other metal powders are used in very small amounts as grain growth inhibitors.)

**Appearance:** Shiny silver gray cylindrical shaped metal with varying colors of surface coatings on the cutting edges.

#### **SECTION 4: First aid measures**

(The first aid measures listed here are applicable for dusts and mists. The High Speed Steel products manufactured and sold by YG1 Tool Company do not pose an immediate health hazard to individuals that come in contact with them as provided for their intended use. However, those that have the ability to sharpen used High Speed cutting tools need to also follow the guidelines listed in Section 8 of this document.

**Inhalation:** If symptoms of pulmonary involvement develop (coughing, wheezing, shortness of breath, etc.) remove the affected person from exposure and seek medical attention.

**Skin Contact:** If irritation or rash occurs thoroughly wash the affected area with soap and water and isolate the area from exposure. If the irritation or rash persists, seek medical attention.

**Eye Contact:** If irritation occurs, flush with copious amounts of water. If irritation persists, seek medical attention.

**Ingestion:** If substantial quantities are swallowed, dilute with a large amount of water, induce vomiting and seek medical attention.

#### **SECTION 5: Firefighting measures:**

High Speed cutting tools are not a fire hazards in themselves: ( **FLASH POINT: N/A FLAMMABLE LIMITS: N/A**) The dry dusts generated while grinding them and then allowed to accumulate for a long period of time may ignite if subjected to an ignition source.

**Extinguishing Media:** Smother powder fires with dry sand or dry dolomite. An ABC type fire extinguisher or flooding with water will also work.

**Special Fire Fighting Procedures:** For powder fires confined to a small area, use a respirator approved for toxic dusts and fumes. For a large fire the fire fighters should use self-contained breathing apparatus.

**Unusual Fire and Explosion Hazards:** Accumulated dusts may present a fire or explosion hazard under the rare conditions of: particle size, dispersion, and a strong ignition source. However, this is not expected to be a problem under normal handling conditions.

#### **SECTION 6: Accidental release measures**

(This section does not apply to High Speed steel cutting tools)

## **SECTION 7: Handling and storage measures**

(No special handling or storage measures are needed for High Speed cutting tools).

## **SECTION 8: Exposure control**

**Respiratory Protection Equipment:** Use an appropriate NIOSH approved respirator if airborne carbide dust concentrations exceed the appropriate PEL or TLV listed in Section 3 of this Safety Data Sheet. (Also refer to: 29CFR 1910.134)

**Ventilation:** Use local exhaust ventilation which is adequate to limit personal exposure to airborne dust created when sharpening a High Speed cutting tool. If such equipment is not available, respiratory protection should be used (see above information under Respiratory Protection Equipment).

**Protective Gloves:** Gloves are recommended when contact with carbide dust or mist is likely.

**Barrier Cream:** Barrier cream may be used wherever skin is exposed to carbide dust or mist.

**Eye Protection:** Safety glasses with side shields or goggles are recommended.

## **SECTION 9: Physical and chemical properties**

Vapor Pressure: N/A

Vapor Density: N/A

Solubility in water: Insoluble

Freezing Point: N/A

Odor Threshold: N/A

Specific Gravity: 7.8 to 8.2 @ 60° F (H<sub>2</sub>O= 1)

Evaporation Rate: N/A

Physical State: Solid

pH: 7.5 – 8.0 @ 60° F

Boiling Point: N/A

How best monitored (as dust): Air samples

## **SECTION 10: Stability and reactivity**

### 10.1. Chemical stability and possibility of hazardous reactions

- Can not be ignited easily.
- Stable in normal pressure and room temperature.
- Non-flammable. But May occur corrosive or toxic gases in fire-emergency.

### 10.2. Conditions to avoid

- Ignition sources : heat, sparks, open flames
- Moisture

### 10.3. Incompatible materials:

- Water reactive materials
- Combustible materials
- Flammable materials
- Reducing materials

### 10.4 Hazardous decomposition:

- Toxic or irritation gases may be occurred in fire-emergency

## **SECTION 11: Toxicology information**

ROUTES OF EXPOSURE: Skin contact, eye contact, acute inhalation, chronic inhalation, and ingestion

EFFECTS OF EXPOSURE: Carcinogenicity by NTP or IARC, Sensitization (Also see Section 11)

**Inhalation:** Dusts or mists can cause irritation of the nose and throat. Inhalation can result in an allergic reaction in individuals previously sensitized, causing difficult breathing. Dusts or mists also have the potential for causing transient or permanent respiratory disease, including occupational asthma and interstitial fibrosis in a small percentage of exposed individuals. Symptoms include productive cough, wheezing, shortness of breath, chest tightness, and weight loss.

**Skin Contact:** The solid product, dust, or mist can cause irritation or an allergic skin rash due to cobalt sensitization in people susceptible to allergic reaction.

**Eye Contact:** Can cause irritation or conjunctivitis.

**Ingestion:** Ingesting large amounts of cobalt over a period of time has the potential for causing blood, heart, and other organ problems.

## **SECTION 12: Ecological Information**

(This section is not regulated by O.S.H.A.)

## **SECTION 13: Disposal**

Follow federal, state, and local regulations

## **SECTION 14: Transportation**

No special transportation or handling is required for solid high speed cutting tools

## **SECTION 15: Regulatory information**

**WARNING: This product contains chemicals known to the State of California to cause cancer!**

Solid carbide cutting tools contain substances listed on Federal and some State regulation lists:

Cobalt (7440-48-4):	USA Toxic Substances Control Act Inventory USA SARA Section 313 California Proposition 65 Carcinogens List
Tungsten (7440-33-7):	USA Toxic Substances Control Act Inventory

**WARNING:** This product can expose you to chemicals including cobalt, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



## **SECTION 16: Other**

**User Responsibilities:** This Safety Data Sheet provides information consistent with recommended applications of these products and anticipated non-routine activities involving the product. It is the user's responsibility to identify and protect against health and safety hazards presented by modification of carbide tools after manufacture. Individuals handling carbide tools should be informed of all relevant hazards and recommended safety precautions, and should have access to the information contained in this SDS.

**Disclaimer:** The information contained herein is based upon data provided by manufacturers and suppliers of raw materials used in the manufacture of our solid carbide cutting tools. (CONTINUED ON NEXT PAGE)  
The information is offered in good faith as accurate and correct as this SDS issue date, but no representations, guarantees, or warranties of any kind are made as to its accuracy or completeness, suitability for particular applications, hazards connected with the use of product, or the results to be obtained from the use thereof. User assumes all risk and liability of any use or handling of any material beyond this manufacturer's control. Variations in methods, conditions, equipment used to store, handle, or process the material, and hazards connected with the use of the product are solely the responsibility of the user and remain at its sole discretion.

When applicable, the tools described in this SDS are considered to be "articles" within the meaning of Title 29 of the Code of Federal Regulations, Section 1910.1200 et seq. This SDS is intended to be used solely for the purpose of satisfying informational requests made pursuant to that requirement. It is not intended to preempt, replace, or expand the terms contained in this manufacturer's Condition of Sale. Compliance with all applicable federal, state, and local laws and regulations remains the responsibility of the user, and the user has the responsibility to provide a safe workplace, to examine all aspects of its operation, and to determine if or where precautions, in addition to those described herein, are required. This manufacturer makes no warranties, expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

**YG1 Tool Company S.D.S. SHEET REVISED: February 22, 2022**