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## COPPER TUNGSTEN ALLOYS

**Eagle Alloys Corporation** can supply the below grades of Copper Tungsten metal composite materials as well as custom grades to meet your specific needs. Eagle Alloys can supply various sizes and compositions for **immediate shipping** or we can supply **custom** grades, shapes and **finished parts** with a **short lead time**. These metal composite materials produce dense hard metals with low thermal expansion, good thermal and electrical conductivity, excellent arc resistance, superior wear resistance and strength at elevated temperatures.

### FORMS AVAILABLE

Wire, rod, bar, strip, foil, sheet, plate, tubing, blanks, semi-finished and custom finished parts.

EA Copper Tungsten Alloys are **DFARS Compliant** since they are not listed as a specialty metal and therefore not subject to the qualifying country clause.

Eagle Alloys supplies DRC **Conflict Free** material only.

Please see our chart of standard grades of Copper Tungsten Alloys

EA Copper Tungsten Alloy Grades	Copper %	Tungsten %	ASTM-B-702-93	RWMA
W50/Cu50	48-52%Cu	Balance	Class A	...
W55/Cu45	43-47%Cu	Balance	...	Class 10
W56/Cu44	42-46%Cu	Balance	...	Class 10
W60/Cu40	38-42%Cu	Balance	Class B	...
W65/Cu35	33-37%Cu	Balance	...	....
W68/Cu32	28-32%Cu	Balance	...	Class 10
W68/Cu32HT	30-34%Cu Alloy	Balance	...	...
W70/Cu30	28-32%Cu	Balance	Class C	Class 10
W75/Cu25	23-27%Cu	Balance	Class D	Class 11
W75/Cu25HT	23-27% Cu Alloy	Balance	...	...
W78/Cu22	20-24%Cu	Balance	...	Class 12
W80/Cu20	18-22%Cu	Balance	Class E	Class 12
W85/Cu15	13-17%Cu	Balance	...	...
W90/Cu10	8-12%Cu	Balance	...	...

\*Note: HT = Heat Treated. Copper Tungsten Alloy materials can be fabricated and custom produced to customer's specifications. Above data is for informational purposes only. Eagle Alloys is not liable for accuracy of these contents or applications. Finished part drawings may be forwarded to a third party of outsourcing.

### COPPER TUNGSTEN ALLOYS TYPICAL APPLICATIONS

High temperature furnace components, heat sinks, EDM electrodes, high-voltage discharge tubes, high voltage arc contacts, electrical contacts, vacuum contacts, electrodes for resistance welding and spark erosion, leaders, balance weights, dies for castings, spreaders, microwave carriers, hermetic package bases and housings, ceramic substrate carriers, medical components, heating elements, high speed tools.

## **MACHINING COPPER TUNGSTEN ALLOYS**

Copper Tungsten composites machine like gray cast iron. These alloys can be bored, cut, drilled, ground, sawed, tapped, and turned. Copper Tungsten Alloys use speeds and feeds similar to Gray Cast Iron. Copper Tungsten Alloy become easier to machine as the copper content increases. The more tungsten content present the more care must be taken when machining. Carbide tools are suggested for most cases and a coolant is optional.

### **Cutting and Sawing**

When sawing, use a bi-metal blade; blade pitch should be relative to the thickness of the material. Coarse blades can be run at low speeds, and finer blades run at higher speeds. Coolant can be used. Material can also be cut using high-speed abrasive cutoff wheels.

### **Drilling**

Carbide tooling is suggested. Increased clearance angles and automatic feeds are often used to avoid binding and seizing. Carbide drills will give a better tool life.

Grinding - Use aluminum oxide or silicon carbide wheels of medium hardness.

### **Milling**

Carbide cutters are suggested.

Roughing - Feeds of .007" to .015" per tooth at speeds of 200 to 400 SFM.

Finishing - Feeds of .003" to .010" per tooth at speeds of 300 to 700 SFM.

### **Tapping**

Use high-speed steel or carbide, two flute plug spiral point taps. A light tapping fluid is recommended.

### **Turning and Boring**

Carbide inserted cutters are suggested.

Roughing - Cutting depth of .030" to .125" and .008" to .015" feed, at 200 to 300 SFM.

Finishing - .010" to .015" cutting depth and .004" to .010" feed, at 250 to 400 SFM.

Please feel free to contact us for alloys and sizes available for [same](#) or [next day shipping](#) as well as your custom needs.

## **EAGLE ALLOYS CORPORATION**

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