



CMW NO-CHAT® & NO CHAT® MAX TUNGSTEN BASED SOLUTIONS FOR:
HEAVY METAL BORING BARS

A LOWER COST ALTERNATIVE to Tungsten Carbide Boring Bars. CMW No-Chat® and No-Chat® Max are tungsten based materials developed primarily for heavy metal boring bars. A high modulus of rigidity and better dampening characteristics than steel bars make CMW No-Chat® and No-Chat® Max ideally suited as a tool support material where less rigid and less massive materials chatter or vibrate. This combination of properties allows you to achieve higher metal removal rates with very close tolerances.

Since CMW No-Chat® and No-Chat® Max does not anneal carbide, tool holders and extensions can be brazed directly without affecting the physical properties of the material. The high thermal conductivity of CMW No-Chat® and No-Chat® Max (*three times that of steel*) means the tool will run cooler, last longer with less down time. CMW No-Chat® and No-Chat® Max will allow for longer tool extensions with length-to-diameter ratios of up to 8:1.



BENEFITS

- » More economical than carbide bars
- » Reduce tool chatter
- » Reduce tool vibration
- » Tools run cooler
- » Readily machinable
- » Less prone to chipping and breakage
- » High material density

RESULTS

- » Make heavier cuts
- » Better surface finish
- » Extend tool life
- » Minimize production downtime
- » Optimize material and finishing costs

TYPICAL PROPERTIES OF CMW NO-CHAT® AND NO-CHAT® MAX

MATERIAL PROPERTY	UNITS	CMW NO-CHAT®	CMW NO-CHAT® MAX	AISI 4140 STEEL
DENSITY	g/cm ³	17	17.3	7.7-8
	lb/in ³	0.613	0.628	.278-.290
ELECTRICAL CONDUCTIVITY	% IACS	14	15	N/A
ELECTRICAL RESISTIVITY	nWm	123	158	222
THERMAL CONDUCTIVITY	Btu·h ⁻¹ ·ft ⁻¹ ·°F ⁻¹	55	74	25
	W·m ⁻¹ ·K ⁻¹	95	128	43
COEF. OF LINEAR EXPANSION	in/in °F	3.0 x 10 ⁻⁶	2.5 x 10 ⁻⁶	N/A
	m/m °K	5.4 x 10 ⁻⁶	4.5 x 10 ⁻⁶	N/A
HARDNESS	Rockwell	24 HRC	34 HRC	13 HRC
ULTIMATE TENSILE STRENGTH	psi	112,000	140,000	95,000
	MPa	712	965	655
0.2% YIELD STRENGTH	psi	75,000	120,000	60,495
	MPa	517	827	417
% ELONGATION	-	6	4	26
ELASTIC MODULUS IN TENSION	psi x 10 ⁶	40	53	29
	GPa	280	365	200
MODULUS OF RUPTURE IN BENDING	psi	220,000	250,000	N/A
	MPa	1520	1723	N/A
COMPOSITION	% Element	90W, Ni, Cu Bal	90W, Ni, Fe, Mo Cal	-

AVAILABILITY: CMW No-Chat® and No-Chat® Max materials are available in rough shapes and finished products. Material is stocked in Rough Oversize to Finish (ROTF) round bars 3/16" to 1" diameter x 7" long and 1/2" to 4" diameter x 12" long. Rectangular bars and finished products can be readily manufactured to your specifications.

Other applications for CMW No-Chat® and No-Chat® Max: Grinding Quills, Arbors, End Mill Extensions, Tool Holders, etc.

About the Company » With its roots to 1916 as the Mallory Metallurgical Company, CMW operates in three primary business units dedicated to silver-based electrical contacts, tungsten-based high density metals and copper-based resistance welding consumables. Numerous organizations have repeatedly recognized our company and its associates for safety, quality and continuous improvement programs. With an employment base including over 1,000 years experience in chemistry, metallurgy, manufacturing engineering and other industrial technologies, CMW operates a range of capabilities across the spectrum of manufacturing in its 6+ acre complex in the center of the United States.

We stand ready to assist you!

CMW is ISO 9001:2000 certified.

For more information, please call our office or visit our website at www.cmwinc.com.

HIGH DENSITY METALS

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