

Ultra-met[®]

carbide technologies

SOLID CARBIDE ROD

2023 CATALOG

CUSTOMERSERVICE@ULTRA-MET.COM
PH (800) 543-9952 | FAX (937) 653-4754

PREMIUM CARBIDE MANUFACTURER SINCE 1965



Ultra-met®

carbide technologies

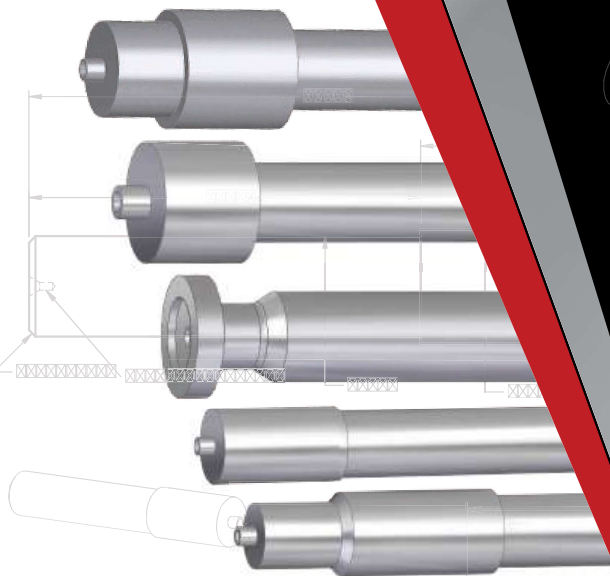
www.ultra-met.com

MADE IN USA

NOW OFFERING ROUND PREFORMS

Call today!

1-800-543-9952



• Offered in Ultra-Met's UF110 Ultra fine grade, 10-15 day Delivery

• Single and multiple diameters:

Multiple hole configurations available. Lead time/capability is based on drill inventory and Ultra-met review.

• Female Centers, Male Centers, Lapped centers available.

• OD grinding is offered for shanks and diameters.

Will add 5-10 working days to delivery.

• Minimum Grind stock: 0.030" on diameters and 0.060' on OAL

• Max T.I.R.: 0.008"-0.010"

*Items that are not covered in this outline will need to be reviewed by Ultra-met

CUSTOMER SERVICE

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720 North Main Street
Urbana, Ohio 43078



MANUFACTURED IN THE USA

ABOUT ULTRA-MET



Founded in 1965, Ultra-Met Carbide Technologies is the leading independent manufacturer of high performance custom-molded carbide products for the most challenging applications. With custom grade development, 35 standard grades, and the latest CNC split-cavity pressing capability, Ultra-met is committed to providing our customers with the highest quality products and exceptional customer service.

Ultra-met is pleased to offer our full line of high quality solid and coolant-through carbide rods highlighted by our American made preform tool blanks made from powder to completed blank in Urbana, Ohio.

Ultra-met strives to make a positive impact on the environment for the benefit of our employees and community. No VOCs are used in our advanced powder manufacturing process, which promotes employee safety and environmental responsibility. If you are looking for a carbide supplier that manufactures in America with state-of-the-art processes and equipment, provides a high-quality product with outstanding service, and cares about the environment, then Ultra-met should be your choice.

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FINISH

- P | **Polished:** Precision Ground h6, Polished
- S | **Satin:** Precision Ground h6, Satin finish
- U | **Unground:** With Ground Stock on Diameter and Length

METALLURGICAL CAPABILITIES

ULTRA-MET IS FULLY EQUIPPED TO PROVIDE COMPLETE CARBIDE GRADE ANALYSIS, CROSS REFERENCE, AND NEW GRADE DEVELOPMENT.

- X-Ray Fluorescence Spectrometer (XRF)
Chemical analysis / composition of material samples
- HRA Rockwell Hardness Tester
- Density, g/cc
- Magnetic Saturation, emu
- Coercive Force, Hc, measured in kA/m
- Cross Sectioning, Mount, and Polish for Metallographic Analysis
- Metallurgical Microscope with digital image capability
(1500x magnification)
- Keyence Digital Microscope
- Keyence Optical Measurement



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APPLICATION RECOMMENDATIONS

D: DIAMOND COATING REQUIRED

Cutting Style		UM10	UM12	UM6	UM3D
Drilling		●	●		● + D
Milling	Roughing	●			● + D
	Finishing	●	●	●	● + D
Reaming		●		●	● + D
Hobbing		●	●		

ISO Workpiece Material		UM10	UM12	UM6	UM3D
P	Carbon Steel	●	○		
	Common Alloy Steel	●	○		
	High Alloy Steel HRC<45	●	●		
M	Ferritic Stainless Steel	●	●		
	Austenitic Stainless Steel		●		
	Martensitic Stainless Steel	○	●		
K	Cast Iron	●	○		
	Nodular Cast Iron	●	○		
	CGI, Malleable, Austempered Cast Iron	●	○		
S	Titanium Alloy	○	●		
	Nickel Base Alloy	○	●		
H	Hardened Steel 05-60 HRC		○		
	Hardened Steel >60HRC				
N	Aluminum Alloys	●			
	Copper and Copper Alloys	●		●	
	Graphite			●	●
	Carbon Fiber			●	●
	Acrylic				●
Diamond Coating				○	●

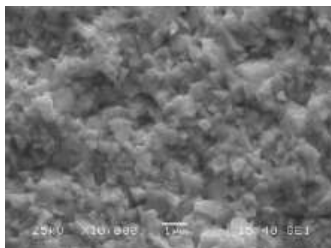
*TOOL GEOMETRY, COATING, AND CUTTING STYLE CAN HAVE INFLUENCE ON THE CUTTING PERFORMANCE
*GRADE RECOMMENDATION IS FOR REFERENCE ONLY

● BEST CHOICE
○ SUITABLE

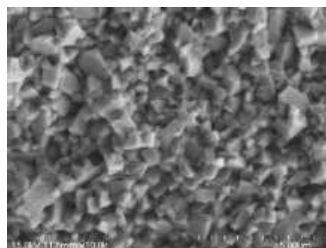
CARBIDE GRADE CHART

Grades	Binder %	Hardness	T.R.S.	Density	Grain Size	ISO Code
		HRA	PSI	g/cc		
UM10	10.0	91.8	551,000	14.45	Submicron	K30
	An excellent high performance grade to cover most of the cutting applications for materials of ISO P, M, K, N. Suitable for drilling, milling, and reaming applications.					
UM12	12.0	92.2	580,000	14.15	Ultrafine	K40
	Gives high impact strength while maintaining excellent wear resistance. A universal grade for cutting Stainless Steel, Titanium Alloys, Nickel base alloys and other difficult to machine materials. Suitable for milling and drilling.					
UM6	6.0	93.1	406,000	14.85	Submicron	K10
	A harder grade for machining aluminum alloys, graphite, composite materials. Suitable for milling, reaming, and diamond coating.					
UM3D	3.0	93.2	261,000	15.25	Fine	K05
	A special composition and process control resulting in an excellent adhesion strength and wear resistance in diamond coating applications.					

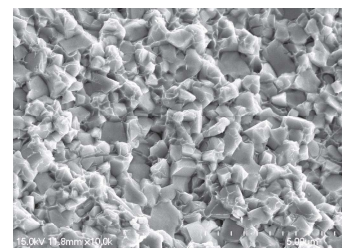
*ABOVE DATA ARE TYPICAL PARAMETERS



ULTRAFINE 0.4~0.6 MICRON



SUBMICRON 0.6~0.8 MICRON



FINE 0.8~1.0 MICRON

YOUR PARTNER FOR HIGH PERFORMANCE CARBIDE

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5 AXIS CNC MACHINING



AUTOMOTIVE



AEROSPACE



COMPOSITE MACHINING



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