

Tungsten Carbide Rods & Blanks

Nano Grain

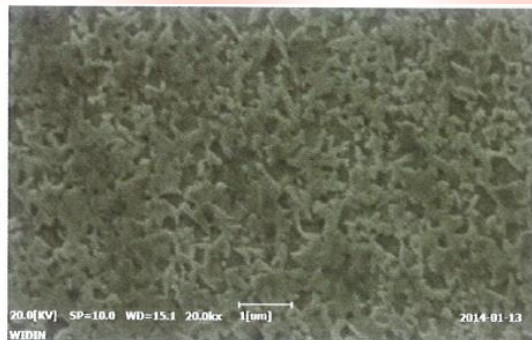
0.2 μm

Best Quality

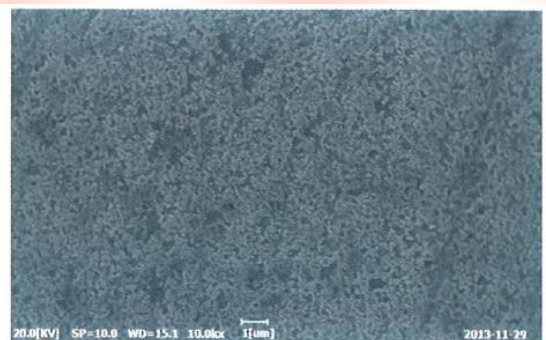
9 % Cobalt

Excellent Hardness

94.5 HRA



WF 12



WU 08

Carbide Grades

Grade (재종)		WN09	WU08	WF08	WF12	
ISO-Range		K05-K10	K05-K10	K10-K20	K20-K30	
Diameter (외경)	mm	3.0~25.0	3.0~25.0	3.0~32.0	3.0~32.0	
Length (길이)	mm	320	320	330	330	
Chemical Data	Co	wt%	9	8	8	12
	WC+Dopant	wt%	91	92	92	88
Physical Data	Density (밀도)	g/cm ³	14.30	14.30	14.40	14.10
	Hv10	kg/mm ²	2120	2080	2000	1730
	HRA (경도)	ISO3738	94.5	94.2	93.5	92.0
	TRS (항절력)	N/mm ²	3,800 ≥	3,200 ≥	3,200 ≥	3,500 ≥
Porosity	A <10 μ m		≤ 02	≤ 02	≤ 02	≤ 02
	B >10 μ m		00	00	00	00
	C (F.C)		00	00	00	00
WC grain size	μ m	0.2	0.3	0.5	0.5	
Application	Products/ Material Areas	Drill, Endmill	Drill, Endmill, Reamer	Drill, Endmill, Reamer	Drill, Endmill, Tap	
	Material Areas	High speed cutting, CFRP or Kevlar, composite materials, high wear resistant materials	Hardened steels, graphite, aluminium alloys. Composite materials, CFRP	Hard Materials, hardened and tempered steels, high speed cutting and dry cutting	Titanium alloys, stainless steels, grey cast iron, composite Materials nickel alloys	

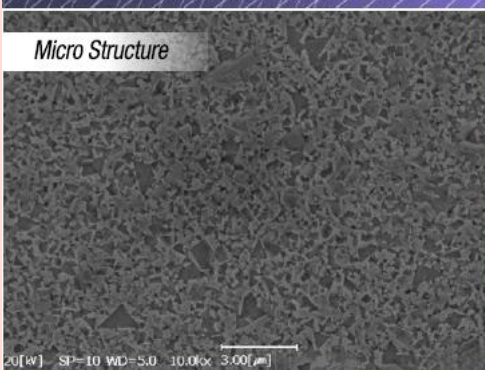
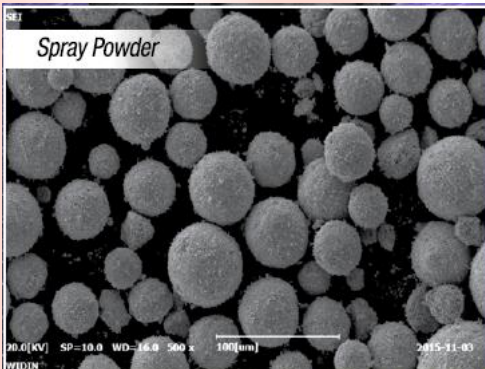
• TRS Test specimen : 4 X 8 X 25mm or Ø4 X 30mm, Span. 20mm

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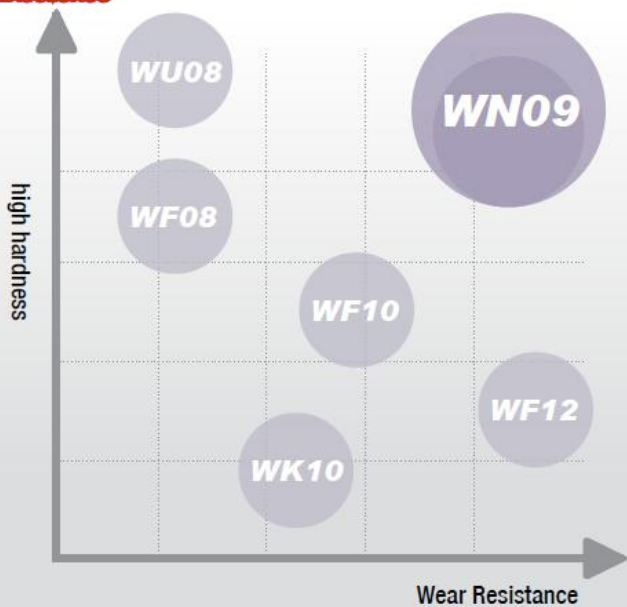
초경 환봉 소재

- **WF12** E/M Series
- **WF08** Winner Series
- **WU08** 0.3 μ m Series 

Carbide Grades



Grade		WN09	WU08	WF08	WF10	WF12	WK10
ISO-Range		K01-K05	K05-K10	K10	K15	K20	K30
Diameter	mm	3.0 ~ 25.0					
Length	mm	330					
Co	wt%	9	8	8	10	12	10
Density	g/cm ³	14.25	14.30	14.40	14.20	14.10	14.10
Hv10	kg/mm ²	2130 ↑	2080	2000	1850	1730	1650
HRA	ISO3738	94.5 ↑	94.2	93.5	92.5	92.0	91.0
TRS	N/mm ²	4200 ↑	3,800 ≥	3,800 ≥	4,000 ≥	4,100 ≥	3,900 ≥
A (<10 μ m)		≤ 02	≤ 02	≤ 02	≤ 02	≤ 02	≤ 02
B (>10 μ m)		00	00	00	00	00	00
C (F.C)		00	00	00	00	00	00
WC grain size (μ m)		≤ 0.2	0.3	0.5	0.5	0.5	0.8



Provide the best grade for customer demand.

Product	Unground & Cutting	Ground & Polished Rods
Shape		
Grinding		
Size		
Tolerance		h6
Grade		



mm (ΦD)	ΦD Tolerance	(L) mm	L Tolerance	Grade
3.0 ~ 10.0	0.2 ~ 0.4	330	0.1 ~ 6.0	K10 : WK10
11.0 ~ 15.0	0.3 ~ 0.6			K10, K15, K20 : WF08, WF10, WF12
16.0 ~ 25.0	0.3 ~ 0.8			K05~K10 : WU08

Besides Standard Item, Customized Item(Size, Shape) is available.

ALICON s.r.o. Váš partner v třískovém obrábění

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