

Grades

Grade		UF09	UF10N	UF12	UF10	K10	K20
ISO range		K01-K10	K05-K10	K10-K30	K20-K50	K10	K20
WC + other carbides	%	91	90	88	90	94	94
Co	%	9	10	12	10	6	6
WC grain size		Ultrafine	Ultrafine	Ultrafine	Submicron	Fine	Fine
Density	g/cm ³	14.45	14.4	14.1	14.5	14.9	14.95
Hardness	Hv30	1,940	1,860	1,840	1,650	1,840	1,600
	HRA	93.9	93.1	92.5	92	92.5	91.8
Transverse rupture strength	N/mm ²	3,518	3,938	3,622	4,049	2,334	2,754
	kpsi	511	572	526	588	339	400
Fracture toughness	Mpa.m ^{1/2}	11	12.8	13.8	14.7	13.5	14
Young's modulus	kpsi	86,780	85,360	82,860	80,000	90,000	87,000
Compressive strength	kpsi	1,145	1,015	900	870	900	870

Properties & Application of Main Grades

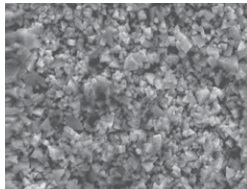
UF09

Properties

- Ultra fine grain WC with 9% Co
- Very high wear resistance and excellent deformation resistance

Application

- High cutting speed milling
- For use on hardened steel, plastics, fibre reinforced materials, aluminum alloys



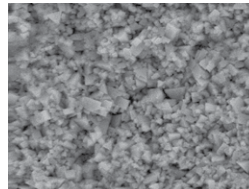
UF10N

Properties

- Ultra fine grain WC with 10% Co
- Very high wear resistance and excellent deformation resistance

Application

- High cutting speed milling & drilling
- For use on wood and paper, titanium alloys, fibre reinforced materials, aluminum alloys



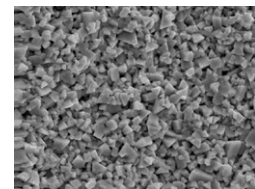
UF10

Properties

- Fine grain WC with 10% Co
- High toughness and wear resistance

Application

- Medium cutting speed and feed
- For use on unalloyed engineering steel, stainless steel, nickel based alloys, titanium alloy, cast iron



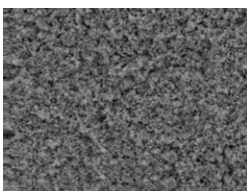
UF12

Properties

- Ultra-fine grain WC with 12% Co
- Very high toughness and high wear resistance

Application

- High cutting speed and medium feed
- For use on unalloyed engineering steel, stainless steel, Nickel based alloy, titanium alloy



K10

Properties

- Fine grain WC with 6% Co
- Very high wear resistance

Application

- High cutting speed milling
- For use on hardened steel, plastics, fibre reinforced materials, aluminum alloys

