

GWM Material Grade Chart

Cemented tungsten carbide grades in production at Chengdu Golden Wolfran Carbide Co., Ltd.. Composition in percent, hardness in HRA, transverse rupture strength in MPa, density in g/cm3.

Grade	ISO	WC %	Co %	Ni %	Others %	HRA	MPa	g/cm3	Recommended application
GW02U	K05	98	1	/	1	95	2000	15.2	Ultra-fine grain with excellent wear resistance. Applied to wear-resistant blocks, nozzles and water cutters.
GW03U	K05	96	3	/	1	94.5	2500	15.1	Ultra-fine grain with excellent wear resistance. Applied to wear-resistant blocks, nozzles and woodworking cutters.
GW05U	K05	94	5	/	1	94	2800	14.9	Ultra-fine grain with excellent wear resistance. Applied to reamers, carbon cutters and bamboo wood cutters.
GW10U	K10	93	6	/	1	93	3200	14.8	Sub-fine grain with good wear resistance and hardness. Applied to PCB bits, reamers and woodworking cutters.
GW20U	K10	91	8	/	1	92.5	3500	14.6	Sub-fine grain with good wear resistance and hardness. Applied to drill bits, milling cutters, boring cutters and carving cutters.
GW30U	K30	89	10	/	1	92	3800	14.4	Sub-fine grain for hole-cutting tools, milling cutters, drilling bits, taps and revolving graters. Also used on carbon steel, alloy steel, stainless steel, heat-resistant alloy steel, chilled cast iron, non-ferrous alloy, plastics and carbon fibre. An ideal substrate for coated tools.
GW40U	K40	87	12	/	1	92.8	4200	14.1	Ultra-fine grain with excellent structure, high hardness and wear resistance. Specially recommended for end mills, particularly high-speed milling, and for cutters used on hard-to-machine steels, stainless steel, titanium alloy and die steel below 60 HRC.
GW45U	K40	85	14	/	1	92.8	4200	14.1	Ultra-fine grain with excellent structure. Applied to stainless steel, die steel and superalloy machining.
YG6X	K10	93	6	/	1	92	3200	14.9	Fine grain, recommended for solid carbide drill bits, end mills and rotary burrs, and for non-ferrous metals such as cast iron, aluminium and copper, and carbon products (coated).
YG10X	K30	89	10	/	1	91.5	3500	14.5	Fine grain with good generality, recommended for solid carbide drill bits, end mills and rotary burrs. Applied to die steel below 45 HRC, non-ferrous metal, alloy steel, stainless steel and non-metal. An ideal substrate for coated tools.
YG15	K40	84	15	/	1	89.5	3500	13.9	Medium grain with excellent hardness and toughness. Applied to drawing dies, wear-resistant parts, stamping parts and mould cores.
YG20	K40	79	20	/	1	86	3600	13.4	Medium grain, recommended for mould bodies, punch pins, stamping moulds and wear-resistant parts, including press plates for battery shell flushing and hot-rolled twist drills.
YG6	K20	93	6	/	1	90.5	3000	14.9	Medium grain, recommended for wear-resistant parts, rotary burrs, tubes and bars.
YG8	K20	91	8	/	1	89.5	3200	14.7	Medium grain, recommended for wear-resistant parts, tubes and non-ferrous metal cutters.
YN6	/	93	/	6	1	90.5	2800	14.8	Non-magnetic alloy for wear parts that must work in a non-magnetic environment. Good corrosion resistance.
YN10	/	89	/	10	1	89.5	3000	14.4	Non-magnetic alloy for wear parts that must work in a non-magnetic environment. Good corrosion resistance.

Grades and grain sizes are available in both cobalt and nickel binders. For a grade recommendation, email info@gwmtech.com.cn with the duty and what is failing now.