



Properties



tungstencarbide

Sintering parameters

Hardmetal grade	93% WC/0.5% TaC/6.5% Co
Mill	Attritor
Sintering	Vacuum/1450°C/1hr

Sintering results

Representative specific gravity	14.82 g/cm ³
Representative porosity (ISO 4505)	A02 B00 C00
Representative hardness	1650 HV50/92.3 HRa
Representative coercive force	19.0 kA.m ⁻¹ /240 Oe
Representative magnetic saturation	12.4 $\mu\text{T.m}^3.\text{kg}^{-1}$

CW5100	Representative	Guaranteed
Physical analysis		
Fisher size (<i>as delivered</i>) (μm)	1.1	1.0 - 1.2
Scott density (g/cm^3)	2.7	2.2 - 3.2
Chemical analysis		
Total carbon (<i>wt%</i>)	6.14	6.11 - 6.16
Free carbon (<i>wt%</i>)	0.03	< 0.08
Combined Carbon (<i>wt%</i>)	6.11	> 6.05
Oxygen (<i>wt%</i>)	0.13	< 0.16
Al (<i>ppm</i>)	< 3	< 10
Ca (<i>ppm</i>)	< 3	< 10
Cr (<i>ppm</i>)	15	< 40
Fe (<i>ppm</i>)	50	< 200
K (<i>ppm</i>)	< 5	< 15
Mg (<i>ppm</i>)	< 5	< 15
Mo (<i>ppm</i>)	15	< 50
Na (<i>ppm</i>)	< 5	< 15
Ni (<i>ppm</i>)	10	< 25
Si (<i>ppm</i>)	10	< 40

Particle size distribution

Laser diffraction

(*as delivered – representative values*)

