

TUNGSTEN CARBIDE (WC) K20 Co BINDER

K20 WC balls are used in applications where extreme hardness and resistance to wear, abrasion, collision and deformation are required. Virgin powder is strictly used into this production.

APPLICATIONS

Special and hydraulic precision valves, special bearings, couplers, flow meters, sprayers, recirculating balls, ball splines, tool machines, sliding rails, ballpoint pens, pin and tips for indicators, precision measurement instruments, medical instruments. They are used in naval, mining, petrol and coining industry..

CHEMICAL COMPOSITION

	WC	Co
min	93,0	5,0
max	95,0	7,0

PHYSICAL / MECHANICL / THERMAL / ELECTRICAL PROPERTIES

Property	Symbol	U.o.M.	Type	Notes	Values
Densitiy	δ	[g/cm ³]	Physical	Room temp.	14,95
Youngs modulus	E	[GPa]	Mechanical	-	650
Spezific Heat	c	[J/kg·K]	Thermal	Room temp.	225
Coefficient lin. thermal expansion	α	[10 ⁻⁶ /°C]	Thermal	($\Delta T=0-100^{\circ}\text{C}$)	5.2
Thermal conductivity	λ	[W/(m·K)]	Thermal	Room temp.	83.0
Electric resistivity	ρ	[$\Omega \cdot \text{m} \cdot 10^{-9}$]	Electrical	-	180
Rel. magnetic permeability	μ	-	Magneticl	Slightly ferrom.	max 12

TECHNICAL DATA

Property	Type	U.o.M.	Values	U.o.M.	Values
Hardness	Mechanical	[HRC]	90,0 – 91,5	HV 10	1550 - 1780
Service Temperatur	Thermal	[°C]	-196 - 500	[°F]	-320,8 - 932

QUALITY AND DIAMETER

DRM mm	U.o.M.	DRM “	U.o.M.	Quality DIN5401 / ISO 3290
0,200 - 127,000	[mm]	1/64 - 5	["]	G5 - 1000

CORRISION RESISTANCE

As a general rule Tungsten Carbides with Cobalt binder show good corrosion resistance into basic solution while they are not resisting into acid solutions.