Product: WK1, WK2 and WK3

Manufacturing: Powder metallurgy (mixing, pressing, sintering), swaging/rolling/drawing, heat treatment and mechanical processing.
Material properties are measured at room temperature on separate test specimens.

1. Chemical Composition

Element		Range (Min. – Max.)	Typical value
Tungsten		99.95 – 99.98 %	99.96 %
Potassium	WK1:	0.0015 – 0.0035 %	0.0025 %
	WK2:	0.0035 – 0.0065 %	0.0050 %
	WK3:	0.0065 – 0.0090 %	0.0075 %
All trace elements		0.02 – 0.05 %	0.04 %

2. Physical and Mechanical Properties

Property	Range (Min. – Max.)	Typical value
Density [g/cm^3]	19.0 – 19.25 (depends on diameter)	19.25
Hardness [HV10]	380 – 480 (depends on diameter)	430
Tensile strength [MPa]	1100 – 2500 (depends on diameter)	1600
Fracture Elongation [%]	< 5 (depends on diameter)	2
Electrical conductivity at 300 K [S/m]	18.1 x 10^6	18.1 x 10^6
Electrical resistance at 300 K [µΩ m]	0.055	0.055
Thermal conductivity at 300 K [W/mK]	173	173
Coeff. of thermal expansion at 300 K [1/K]	4.4 x 10^{-6}	4.4 x 10^{-6}

3. Applications

Electrode material for resistance welding, Electrode material for die-sinking EDM, Electrode material in the TIG welding process, Electrode material for lighting technology, Electrode material for plasma spraying and plasma cutting, Emission cathodes for electronic tubes, Heating elements for the furnace construction industry, Wires and sheets for a wide range of electrical applications

4. Standards and certificates

DIN EN ISO 6848, ASTM F288, ASTM F269 and ASTM B760
Upon request, we are pleased to provide factory certificates in compliance with EN 10204, available as either a 2.2 or 3.1 inspection certificate.

1. Delivery program

Rods, wires, sheets, electrodes, plates, strips and finished parts according to customer drawings.