

# Material Datasheet

## Tungsten-Copper (WCu)

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### Material description

Tungsten-copper composites are commonly used for spot welding electrodes. Our tungsten-copper composites provide superior hardness at equal electrical conductivity than RWMA Class 11 / ISO Grade 5182-2015 Group B type 10.

EPoS' unique and patented eForging production process ensures finer and more homogeneous material microstructures, which in turn yields more welding hits per electrode, reducing cost and waste.

### Mechanical and physical characteristics at room temperature

	<b>W75-Cu</b>	<b>W80-Cu</b>
<b>Chemical composition %</b>	W: 75 ±1 Cu: 25 ±1	W: 80 ±1 Cu: 20 ±1
<b>Mass density</b> [g cm <sup>-3</sup> ]	15.0 ±0.1	15.7 ±0.1
<b>Hardness HV1</b>	300 ±10	320 ±12
<b>Electrical conductivity<sup>†</sup></b> [%IACS] [MS·m <sup>-1</sup> ]	40±1 23 ±1	38±1 22±1

<sup>†</sup>measured by phase-sensitive eddy current test method (DIN EN 2004-1)

### Forms Available

<b>Sizes<sup>‡</sup></b>		
<b>Circular blanks</b>	Diameter from Ø5 to Ø28mm	Height 1 to 15mm
<b>Square blanks</b>	Section from 3x3mm to 25x25mm	
<b>Rectangular blanks</b>	Variable section from 5x3mm to 45x15mm	

<sup>‡</sup>Semi-finished machined products and specific sizes available on request

### Machinability and soldering

These materials can be machined with conventional carbide cutting tools.  
 Solders used for RWMA Group B are recommended.

### Health and Safety

No substances classified under the Annex XVII to REACH are used in this group of materials. Cobalt, Chromium, Nickel, and Beryllium free.