

# HOSOPM CUW

## Technical Data sheet



DIN-Material-No. Code		Chemical Composition (weight %)		Standard-Classification	
		W	Cu		
	-				
	WCu 80/20	80	20	as to ISO 5182	Group B, Class 11
	WCu 75/25	75	25	as to ISO 5182	Group B, Class 10
	WCu 70/30	70	30	as to ISO 5182	

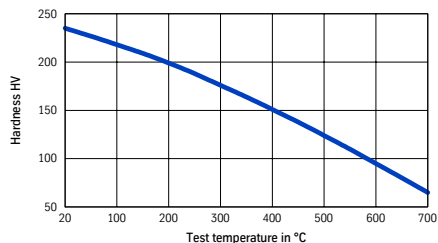
**Material Characteristics** A powdermetallurgically produced tungsten-copper composite material. It combines tungsten's high resistance to arc erosion with the extremely good electrical conductivity of copper in the same material.

- Applications**
- Electrodes for projection- and butt-welding
  - Electrodes for electrical riveting
  - Wear resistant electrodes for sparc erosion
  - High performance contacts for hot upsetting machines

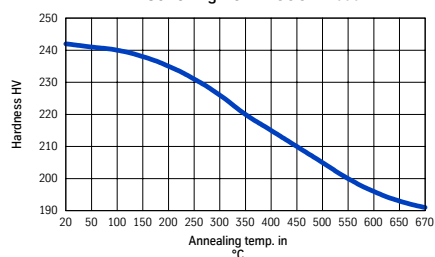
Mechanical Values			HOSOPM080	HOSOPM075	HOSOPM070
Hardness	HV		230	200	170
Tensile strength	N/mm <sup>2</sup>		490	440	390
Modulus of elasticity	kN/mm <sup>2</sup>		230	225	225

Physical Properties			HOSOPM080	HOSOPM075	HOSOPM070
Electrical conductivity 293 K (20 °C)	$\frac{m}{\Omega \cdot mm^2}$		15	22	29
Electrical resistance 293 K (20 °C)	$\frac{\Omega \cdot mm^2}{m}$		0,07	0,04	0,03
Coefficient of electrical resistance	$\frac{1}{K}$		-	-	-
Coefficient of thermal expansion	$\frac{1}{K}$		-	-	-
Thermal conductivity 293 K (20 °C)	$\frac{W}{m \cdot K}$		130	140	150
Density	$\frac{g}{cm^3}$		15,3	14,6	14,0

Hardness at elevated temperatures from HOSOPM080



Softening from HOSOPM080



\*) Vickers hardness at R.T. after 5 hours anneal, air cooling.

### Machining Instructions

<b>Drilling</b>	Tungsten Carbide ISO K 05	Twist drills in acc. with DIN 338
Cutting speed m/min.	40	15 - 20
Lip angle	118 – 120°	like with steel machining
Machining	dry	dry
<b>Turning</b>	Tungsten Carbide ISO K 05	
Cutting speed m/min.	80 – 120	
Rake angle	6 – 10°	
Clearance angle	7 – 10°	
Feed at depth of cut	what ever is choosen	
Machining	dry	
<b>Milling</b>	Tungsten Carbide ISO K 10 or K 05	
Cutting speed m/min.	80 – 100	
Rake angle	10°	
Clearance angle	12°	
Angle of incidence	6°	
Setting angle at main tooth	45°	
Machining	dry	
<b>Grinding</b>	Silicon Carbide Wheels	
Hardness	J, K	
Grain Size	40 - 120	
Structure	medium	
Binder	ceramic	
Cutting speed m/sec.	30	
Infeed	max. 0,02 mm	
Machining	cooling with soluble oil coolant mixtures	

All statements as to the properties or utilization of the materials and products mentioned in this data sheet are only for the purpose of description. Guarantees in respect of the existence of certain properties or utilization at the material mentioned are only valid if agreed upon in writing.