

Wieland-M10

CuZn10
Brass (lead free)

Extruded and drawn products



Material designation	
EN	CuZn10/CW501L
UNS	C22000

Chemical composition*	
Cu	90 %
Pb	< 0,05 %
Zn	balance

* Reference values in % by weight

Physical properties*		
Electrical conductivity	MS/m %IACS	24.7 42
Thermal conductivity	W/(m·K)	184
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	18.2
Density	g/cm ³	8.8
Modulus of elasticity	GPa	124

* Reference values at room temperature

Corrosion resistance

Brasses with a high copper content are generally resistant to organic substances and neutral or alkaline compounds. They are virtually unsusceptible to stress corrosion cracking.

Product standards	
Rod	EN 12163
Wire	EN 12166
Tube	EN 12449

Material properties and typical applications

Wieland-M10 has excellent cold working properties due to its very high copper content. It is highly suited for stamping, riveting, crimping, flanging, cold extruding or other cold working operations. It is used, for example, in the jewellery industrie.

Types of delivery

The Extruded and Drawn Products Division supplies bars, wire, sections and tubes. Please get in touch with your contact person regarding the available delivery forms, dimensions and tempers.

Fabrication properties

Forming		Surface treatment	
Machinability (CuZn39Pb3 = 100 %)	20 %	Polishing	
Capacity for being cold worked	excellent	mechanical	excellent
Capacity for being hot worked	fair	electrolytic	excellent
		Electroplating	excellent
Joining		Heat treatment	
Resistance welding (butt weld)	good	Melting range	1025–1045 °C
Inert gas shielded arc welding	good	Hot working	750–900 °C
Gas welding	good	Soft annealing	450–600 °C 1–3 h
Hard soldering	excellent	Thermal stress relieving	200–300 °C 1–3 h
Soft soldering	excellent		

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Mechanical properties according to EN

Round rods / polygonal rods acc. to EN 12163

Temper	Diameter		Width across flat		Tensile strength	Yield strength		Elongation at rupture			Hardness	
	mm from	mm to	mm from	mm to	R _m MPa min.	R _{p0,2} MPa min. MPa max.		A100 %	A11.3 %	A %	HB min. max.	
M	all		all		as manufactured – without specified mechanical properties							
R240	4	80	4	80	240	–	150	–	40	45	–	–
H050	4	80	4	80	–	–	–	–	–	–	50	95
R320	4	40	4	40	320	220	–	–	23	25	–	–
H090	4	40	4	40	–	–	–	–	–	–	90	120
R380	4	10	4	10	380	280	–	–	11	12	–	–
H110	4	10	4	10	–	–	–	–	–	–	110	150

Tubes acc. to EN 12449

Temper	Wallthickness mm max.	Tensile strength	Yield strength		Elongation at rupture	Hardness		HB		
		R _m MPa min.	R _{p0,2} MPa min. MPa max.		A %	HV min. max.		min.	max.	
M	20	as manufactured – without specified mechanical properties								
R240	20	240	–	140	40	–	–	–	–	
H050	20	–	–	–	–	50	80	45	75	
R300	10	300	180	–	20	–	–	–	–	
H075	10	–	–	–	–	75	105	70	100	
R360	5	360	280	–	8	–	–	–	–	
H100	5	–	–	–	–	100	–	95	–	

Round wires acc. to EN 12166

Temper	Diameter		Tensile strength	Yield strength		Elongation at rupture			Hardness		
	mm from	mm to	R _m MPa min.	R _{p0,2} MPa min. MPa max.		A100 %	A11.3 %	A %	HV min. max.		
M	all		as manufactured – without specified mechanical properties								
R240	4	20	240	–	150	43	45	47	–	–	
H050	4	20	–	–	–	–	–	–	50	100	
R320	1.5	20	320	220	–	20	23	25	–	–	
H095	1.5	20	–	–	–	–	–	–	95	125	
R380	0.5	10	380	280	–	10	11	12	–	–	
H115	1.5	10	–	–	–	–	–	–	115	155	
R440	0.5	6	440	330	–	4	5	–	–	–	
H135	1.5	6	–	–	–	–	–	–	135	180	
R530	0.5	4	530	450	–	–	–	–	–	–	
H160	1.5	4	–	–	–	–	–	–	160	–	