

## Wieland-M15 Brass (lead-free)

## Extruded/drawn products

**Wieland-M15** has excellent cold working properties due to its high copper content.

This alloy is particularly suitable for stamping, riveting, crimping, flanging, cold extrusion or other cold working operations.

### Chemical composition\*

Cu	85%
Zn	balance

### Material designation

EN	CuZn15, CW502L
UNS	C23000
DIN*	CuZn15, 2.0240
BS*	CZ102
NF*	CuZn15

\* Reference values in % by weight

\* Former national standards

### Physical properties\*

Electrical conductivity	MS/m	21.1
	% IACS	36
Thermal conductivity	W/(m*K)	159
Thermal expansion coefficient (0-300°C)	10 <sup>-6</sup> /K	18.5
Density	g/cm <sup>3</sup>	8.75
Modulus of elasticity	GPa	122

\* Reference values at room temperature

1 GPa = 1 kN/mm<sup>2</sup>

1 MS/m = 1 m/Ω • mm<sup>2</sup>

### Fabrication properties

#### Forming

Machinability (CuZn39Pb3 = 100 %)	20%
Capacity for being cold worked	excellent
Capacity for being hot worked	fair

#### Joining

Resistance welding	good
Inert gas shielded arc welding	good
Hard soldering	excellent
Soft soldering	excellent

### 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.

### Surface treatment

Polishing	mechanical	excellent
	electrolytic	excellent
Electroplating		excellent

### Product standards

Rod	EN 12163
Wire	EN 12166
Tube	EN 12449

### Heat treatment

Melting range	1005 - 1025 °C
Hot working	750 - 900 °C
Soft annealing	450 - 600 °C, 1-3 h
Thermal stress-relieving	200 - 300 °C, 1-3 h

### Mechanical properties (values can be achieved and are a function of size and form)

Reference values	from (soft)	to (hard)
R <sub>m</sub> [MPa]	290	500
R <sub>p0.2</sub> [MPa]	110	480
A <sub>10</sub> [%]	45	5
HB	65	145

## Forms and sizes available

Material										
Wieland	EN designation		Outside diameter		Wall thickness		Circumscribing diameter		Diameter / width across flats	
	Brief designation	Number	from	to	from	to	from*	to	from	to
M15	CuZn15	CW502L	6	220	0.1	11				
Round tubes										
Drawn sections							2.5	100		
Extruded sections								150		
Sectional tubes								165		
Round and polygonal rods									2	250
Round wires									0.3	
Polygonal wires									2	

**Wieland - M15**

All values in mm

\* Depending on the form, cross-sections in the lower size range are also available as wire.

# Wieland

Wieland-Werke AG

89070 Ulm

Germany

Telephone:

+49 (0) 731 944 - 0

Telefax:

+49 (0) 731 944 - 28 79

[info@wieland.de](mailto:info@wieland.de)

[www.wieland.de](http://www.wieland.de)

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