

## Wieland-M36/M46 Brass (lead-free)

## Drawn/extruded products

**Wieland-M36** is a lead-free one-phase brass with excellent cold working properties. It is highly suitable for coining, riveting and crimping.

**Wieland-M46** is a high performance brass with high purity specifically designed for applications such as anode conductors in alkaline batteries.

### Chemical composition\*

Cu	64%
Zn	balance

\* Reference values in weight %

### Material designation

EN	CuZn36, CW507L
UNS	C26800
DIN*	CuZn36, 2.0335
NF*	CuZn36

\* Former national standards

### Physical properties\*

Electrical conductivity	MS/m	15.5
	% IACS	26
Thermal conductivity	W/(m*K)	121
Thermal expansion coefficient (0-300°C)	10 <sup>-6</sup> /K	20.2
Density	g/cm <sup>3</sup>	8.44
Modulus of elasticity	GPa	110

\* 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	30%
(CuZn39Pb3 = 100 %)	
Cold working properties	excellent
Hot working properties	good

#### Joining

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

### Surface treatment

Polishing	mechanical	excellent
	electrolytic	good
Electroplating		excellent

### Heat treatment

Melting range	904-932 °C
Hot working	750-870 °C
Soft annealing	450-650 °C, 1-3 h
Thermal stress relieving	200-300 °C, 1-3 h

### Corrosion resistance

Brass with medium copper content is generally quite resistant to organic substances and neutral or alkaline compounds. It is virtually unsusceptible to stress corrosion cracking.

\*Stress corrosion cracking should be taken into account, especially in an ammoniacal atmosphere and whilst under mechanical stress.

### Product standards

Rod	EN 12163
Wire	EN 12166
Section	EN 12167
Tube	EN 12449

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

Reference values	from (soft/extruded)	to (hard)
R <sub>m</sub> [MPa]	340	750
R <sub>p0.2</sub> [MPa]	120	580
A <sub>5</sub> [%]	60	5

(Values achievable with wire)

## 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
M36/M46	CuZn36	CW507L	6	130	0.15	15				
Round tubes										
Drawn sections										
Extruded sections										
Sectional tubes								120		
Round and polygonal rods										
Round wires									0.3	
Polygonal wires									2	

All values in mm

**Wieland - M36/M46**

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