

Wieland-M41

CuZn38As
Machining brass

Extruded and drawn products



Material designation	
EN	CuZn38As/CW511L
UNS	C27453

Chemical composition*	
Cu	63 %
Zn	balance
Pb	0.2 %
As	0.1 %

* Reference values in % by weight

Physical properties*		
Electrical conductivity	MS/m %IACS	14.7 25.4
Thermal conductivity	W/(m·K)	114
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	21.7
Density	g/cm ³	8.41

* Reference values at room temperature

Corrosion resistance

Brass is generally quite resistant against organic substances as well as neutral or alkaline compounds. After exposure to temperatures > 600 °C a thermal treatment at 500–550 °C / 2–3 h is necessary to ensure optimal dezincification resistance. Stress corrosion cracking should be taken into account, especially in an ammoniacal atmosphere and whilst under mechanical stress.

Product standards	
Rod	EN 12163
	EN 12164
	EN 12165
Section	EN 12167
Hollow rod	EN 12168

Material properties and typical applications

Wieland-M41 is a low leaded material suited for the use in drinking water applications. It can be used for water qualities that require dezincification resistant material. M41 can be used where no high mechanical stresses occur. This alloy meets the requirements for dezincification resistant material according to ISO 6509.

Material accepted for products in contact with drinking water as per 4 MS positive list.

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 %)	50 %	Polishing	
Capacity for being cold worked	good	mechanical	excellent
Capacity for being hot worked	fair*	electrolytic	good
		Electroplating	excellent

Joining		Heat treatment	
Resistance welding (butt weld)	fair*	Melting range	850–900 °C
Inert gas shielded arc welding	fair*	Hot working	600–800 °C
Gas welding	fair*	Soft annealing	450–550 °C 1–3 h
Hard soldering	excellent*	Thermal stress relieving	200–250 °C 1–3 h
Soft soldering	excellent		

* see section „Corrosion resistance“

Trademarks



Further information is provided in the brochures on Ecomerica and on drinking water.

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Mechanical properties according to EN

Round rods/polygonal rods											acc. to EN 12164	
Temper	Diameter		Width across flats		Tensile strength	Yield strength		Elongation			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.	min.	min.	min.	max.
M	all		all		as manufactured – without specified mechanical properties							
R280	6	80	5	60	280	–	200	–	25	30	–	–
H070	6	80	5	60	–	–	–	–	–	–	70	110
R320	6	60	5	50	320	200	–	–	15	20	–	–
H090	6	60	5	50	–	–	–	–	–	–	90	135
R400	4	15	4	13	400	250	–	–	5	8	–	–
H105	4	15	4	13	–	–	–	–	–	–	105	–

Rods					acc. to EN 12165	
Temper	Diameter			Hardness		
	mm from	mm to		min.	max.	
M	all					
H070	8	120		70	150	