

eco M43

CuZn38As | lead-free brass according to RoHS

Material designation

EN	CuZn38As CW511L
UNS	C27453

Chemical composition*

Cu	63 %
Zn	balance
Pb	≤ 0.100 %
As	0.1 %

*Reference values in % by weight

Physical properties*

Electrical conductivity	MS/m	14.7
	%IACS	25.4
Thermal conductivity	W/(m·K)	114
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	21.7
Density	g/cm ³	8.39

*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
Wire	EN 12167
Tube	EN 12168

Material properties and typical applications

eco M43 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. **eco M43** 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 BU Global Extruded & Cast Products 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

Machinability (CuZn39Pb3 = 100 %)	50 %
Capacity for being cold worked	good
Capacity for being hot worked	fair*

Surface treatment

Polishing	
mechanical	excellent
electrolytic	good
Electroplating	excellent

Joining

Resistance welding (butt weld)	fair*
Inert gas shielded arc welding	fair*
Gas welding	fair*
Hard soldering	excellent*
Soft soldering	excellent

* see section „Corrosion resistance“

Heat treatment

Melting range	850–900 °C
Hot working	600–800 °C
Soft annealing	450–550 °C 1–3 h
Thermal stress relieving	200–250 °C 1–3 h

Trademarks

wieland ecoline

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Mechanical properties according to EN												
Round rods/polygonal rods										acc. to EN 12164		
Temper	Diameter		Width across flats		Tensile strength R _m	Yield strength R _{p0.2}		Elongation %			Hardness	
	mm		mm		MPa	MPa		A100	A11.3	A	HB	
	from	to	from	to	min.	min.	max.	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	–