wieland

eco SZ2®

CuZn36Si1P | lead-free special brass

Material designation

EN	CW726R
	CuZn36Si1P
UNS	C68370

Chemical composition*

Cu	63 %
Pb	max. 0.100 %
Si	1 %
P	max. 0.10 %
Zn	balance

**Reference values in % by weight*

Physical properties*

Electrical conductivity	MS/m %IACS	9.8 16
Thermal conductivity	W/(m·K)	73
Thermal expansion coefficient (0–300 °C)	10^{-6}/K	19
Density	g/cm³	8.24
Moduls of elasticity	GPa	–

**Reference values at room temperature*

Material properties and typical applications

eco SZ2® is a special brass that can be used as a replacement for leaded brasses. The addition of silicon makes the material very easy to machine.
Its corrosion resistance and usability are comparable to those of CuZn40Pb2. The mechanical strength values are slightly higher.

The material is lead-free in accordance with RoHS and ELV.

Hygienic approval for drinking water applications is being sought.

Types of delivery

The BU Extruded 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 %)	90 %
Capacity for being cold worked	fair
Capacity for being hot worked	excellent

Surface treatment

Polishing	mechanical electrolytic	good poor
Electroplating		excellent

Corrosion resistance

Special brass generally exhibits excellent corrosion resistance due to alloying elements.

The addition of silicon increases the tarnish resistance and reduces the sensitivity to stress corrosion cracking.

Joining

Resistance welding (butt weld)	fair
Inert gas shielded arc welding	fair
Gas welding	poor
Hard soldering	good
Soft soldering	good

Heat treatment

Melting range	865 - 880 °C
Hot working	550 - 650 °C
Soft annealing	450 - 500 °C , 2 - 3 h
Thermal stress-relieving	200 - 300 °C, 1 - 3 h

Product standards

Rod	EN 12164 Draft 2022
	EN 12165 Draft 2022
Wire	EN 12166 Draft 2022
Section	EN 12167 Draft 2022
Hollow rod	EN 12168 Draft 2022

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Dimensions and mechanical properties according to standards

Round rods / polygonal rods												acc. to EN 12164 Draft 2022
Temper	Diameter		Width across flat		Tensile strength	Yield strength		Elongation			Hardness	
					R_m	$R_{p0.2}$		A100	A11.3	A	HB	
	mm	mm	mm	mm	MPa	MPa		%	%	%		
	from	to	from	to	min.	min.	max.	min.	min.	min.	min.	max.
M	all		all		as manufactured							
R450	6	80	5	80	450	–	400	–	–	15	–	–
H090	6	80	5	80	–	–	–	–	–	–	90	180
R480	10	40	15	40	480	260	–	–	–	12	–	–
H120	10	40	15	40	–	–	–	–	–	–	120	210
R540	2	20	2	15	540	400	–	–	2	3	–	–
H150	2	20	2	15	–	–	–	–	–	–	150	220

Wieland-Werke AG | Graf-Arco-Straße 36 | 89079 Ulm | Germany
info@wieland.com | wieland.com

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