

## Wieland-SW1 Lead-free special brass

Wieland-SW1 is a lead-free\* special brass resisting high load and exhibiting good corrosion resistance as well as excellent machinability.

This alloy is suited to the production of machined and drop-forged parts.

ECOBASS® is approved for drinking water applications.

\*according to ELV and RoHS

### Physical properties\*

Electrical conductivity	MS/m	4.5
	% IACS	7.8
Thermal conductivity	W/(m*K)	approx. 35
Density	g/cm <sup>3</sup>	8,25
Modulus of elasticity	GPa	approx. 100

\* Reference values at room temperature  
 1 GPa = 1 kN/mm<sup>2</sup>  
 1 MS/m = 1 m/Ω • mm<sup>2</sup>

## Extruded/drawn products

### Chemical composition\*

Cu	76%
Si	3%
P	0.05%
Zn	balance

\* Reference values in % by weight

### Material designation

EN	CuZn21Si3P
	CW724R
UNS	C69300

### Fabrication properties

<b>Forming</b>	
Machinability	80%
(CuZn39Pb3 = 100 %)	
Capacity for being cold worked	good
Capacity for being hot worked	excellent
<b>Joining</b>	
Resistance welding	fair
Inert gas shielded arc welding	fair
autogenous welding	fair
Hard soldering	fair
Soft soldering	fair

### Corrosion resistance

Special brass generally exhibits good corrosion resistance due to alloying additions.

The addition of silicon improves resistance to tarnishing and reduces the risk to stress corrosion cracking and dezincification.

The material is resistant to seawater.

### Surface treatment

Polishing	mechanical	good
Electroplating		good

### Heat treatment

Melting range	860-925 °C
Hot working	700 - 800°C
Soft annealing	530-650°C
Thermal stress relieving	250 - 300 °C

### Product standards

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

### Standard

Reference values	< 10 mm	≥ 10 - < 20 mm	≥ 20 - < 30 mm	≥ 30 - < 40 mm	≥ 40 mm
R <sub>m</sub> [MPa]	min. 700	min. 650	min. 600	min. 600	min. 530
R <sub>p0,2</sub> [MPa]	min. 450	min. 400	min. 300	min. 300	min. 300
A [%]	10	18	18	20	20

### Special quality with higher strength

Reference values	< 10 mm	≥ 10 - < 20 mm	≥ 20 - < 30 mm	≥ 30 - < 40 mm	≥ 40 mm
R <sub>m</sub> [MPa]	min. 700	min. 650	min. 650	min. 600	min. 530
R <sub>p0,2</sub> [MPa]	min. 450	min. 400	min. 400	min. 350	min. 300
A [%]	10	18	18	20	20

Soft temper / reference values for all dimensions:	R <sub>m</sub> [MPa] > 530	R <sub>p0,2</sub> [MPa] > 300	A [%]: 35
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## 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
SW1	CuZn21Si3P	CW724R	15	155	2	10				
Round tubes										
Drawn sections							6	100		
Extruded sections								130		
Sectional tubes										
Round and polygonal rods									2	70
Round wires									2	
Polygonal wires									2	

All values in mm

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

**Wieland - SW1**

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