

Wieland-S31

CuZn31Si1 | Special brass

Material designation

EN CuZn31Si1
CW708R

UNS –

Chemical composition*

Cu 68 %

Si 1 %

Pb 0.8 %

Zn balance

*Reference values in % by weight

Physical properties*

Electrical conductivity MS/m 8.9
%IACS 15

Thermal conductivity W/(m·K) 71

Thermal expansion coefficient (0–300 °C) 10⁻⁶/K 19.2

Density g/cm³ 8.41

Modulus of elasticity GPa 108

*Reference values at room temperature

Corrosion resistance

Special brass generally exhibits excellent corrosion resistance due to alloying additions. **Wieland-S40** is characterized by good resistance to organic substances and neutral or alkaline compounds.

Product standards

Rod EN 12163

Tube EN 12449

Material properties and typical applications

Wieland-S31 is a special brass exhibiting high resistance to load and wear due to embedded hard silicides and also good high-temperature strength.

Wieland-S31 is primarily used in highload sliding applications (e.g. bearing bushings, sleeves and other sliding elements).

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 40 %
(CuZn39Pb3 = 100 %)

Capacity for being cold worked good

Capacity for being hot worked fair

Joining

Resistance welding (butt weld) good

Inert gas shielded arc welding good

Gas welding good

Hard soldering fair

Soft soldering fair

Surface treatment

Polishing

mechanical electrolytic excellent poor

Electroplating fair

Heat treatment

Melting range 880–915 °C

Hot working 750–800 °C

Soft annealing 500–600 °C
1–3 h

Thermal stress relieving 250–350 °C
1–3 h

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Mechanical properties according to EN

Round rods/polygonal rods											acc. to EN 12163	
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		
					min.	min.	min.	min.	min.	min.	max.	
M	all		all		as manufactured – without specified mechanical properties							
R460	5	40	5	40	460	240	–	18	22	–	–	
H120	5	40	5	40	–	–	–	–	–	120	160	
R530	5	14	5	14	530	350	–	10	12	–	–	
H140	5	14	5	14	–	–	–	–	–	140	–	

Tubes											acc. to EN 12449	
Temper	Wall thickness		Tensile strength R _m		Yield strength R _{p0.2}	Elongation %	Hardness					
	mm		MPa		MPa	A100	HV		HB			
	max.		min.		min.	min.	min.	max.	min.	max.		
M	20		as manufactured – without specified mechanical properties									
R440	8		440		200	20	–	–	–	–		
H115	8		–		–	–	115	115	110	150		
R490	8		490		250	15	–	–	–	–		
H145	8		–		–	–	145	–	140	–		