

Wrought copper-zinc alloy Special brass **CuZn39Sn1** alloy 2792

CuZn39Sn1 is a construction and sliding material with medium strength. It is also known as »NAVAL BRASS« and has good resistance to seawater, atmospheric corrosion, stress corrosion cracking and dezincification. The tendency to seizure in plain bearings made of CuZn39Sn1 is low.

ZOLLERN brand	CuZn39Sn1
EN designation	CuZn39Sn1
EN material no:	CW719R
EN 1653:2000 Plates, circular blanks EN 12163:2016 Bars ASTM B21 Bars ASTM B 171 / ASME B171 Plates	

// National designations / ISO	
DIN	CuZn38Sn1
DIN	2.0530
USA	C 46400
GB	≈ CZ 112

≈ (substantial coherence)

// Composition (weight by per cent in %)					
Cu	Zn	Sn	Fe	Ni	
59.0 – 61.0	Rest	0.5 – 1.0	max 0.1	max. 0.2	
Pb	Other				
max 0.2	max. 0.2				

// Strength properties at room temperature					
(minimum values)					
	R _{p0.2} N/mm ²	R _m N/mm ²	A ₅ %	HB	
[1] EN 1653:2000 [2] EN 12163:2016 min. 200 kg [3] ASTM B21 min. 200 kg [4] ASTM B 171 / ASME B171					
[1] Plates R320	100	320	30	~80	
[1] R340 Plates up to 75 mm thickness	120	340	30	~85	
[2] Bars R400, drawn up to Ø 30 mm	180	400	15	~125	
[3] Bars, drawn and Formats 060 - soft anneal	140	360	30	60-80 HRB	
[4] Plates up to 80 mm	140	345	35	-	
[4] Plates over 80 mm	125	345	35	-	

// Physical properties	
Density at 20 °C	8.4 kg/dm ³
Melting temperature/range	880 – 910 °C
Coefficient of linear expansion from 20° to 100°C	21 x 10 ⁻⁶ °C ⁻¹
Specific heat at 20°C	0.347 J/g x °C
Thermal conductivity at 20°C	1.16 W/cm x°C
Electr. conductivity at 20°C	approx. 15 MS/m approx. 26 % IACS
Electr. resistance at 20°C	approx. 0.067 Ω mm ² /m
Permeability	< 1.01
Young's modulus	110 KN/mm ²
Shear modulus G	38 KN/mm ²

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Areas of application

Due to the improved sliding properties,

CuZn39Sn1 is suitable for

- bearing bushes and sliding strips with medium stress
- screws, nuts, flanges, propeller and pump shafts are made from this material, also in contact with seawater.
- Condenser and heat exchanger plates are used in water treatment and desalination plants

Machinability

CuZn39Sn1 has good hot and limited cold working properties. Machining is easily possible.

The cutting index is 30 where CuZn39Pb3 = 100.

Soft annealing 430 – 530°C

Soft soldering very well suited

Brazing very well suited

Welding Gas-shielded welding are possible. However, smoke is produced in the process due to the evaporation of Zn

