

## Copper-tin-zinc casting alloy Rg 10 alloy 3010

**Rg 10** is a corrosion and seawater-resistant construction material. It has similar sliding properties and strength values as GBz 12 Pb = CuSn11Pb2-C. The toughness of Rg 10 is higher due to the lower tin content. Some of the tin was replaced by zinc.

ZOLLERN brand	Rg 10	
EN designation not standar	rdised	
EN material no: not standar	rdised	
DIN	1705	
/ national designations		
DIN G-CuSm	G-CuSn10Zn	
DIN 2	2.1086	
Composition (mass fraction in %) DIN 1705         Lu       Ni       P       Sn       Pb*       Zn		
Composition (mass fraction in %) DIN 1705           Cu         Ni         P         Sn         Pb*         Zn           86 – 89         max. 2.0         max. 0.05         9.0 – 11.0         max 1.5         1.0	- 3.0	
Ni         P         Sn         Pb*         Zn           86 – 89         max. 2.0         max. 0.05         9.0 – 11.0         max 1.5         1.0           •e         S         Sb         Sb         Sb         Sb         Sb         Sb	) – 3.0	
V Composition (mass fraction in %) DIN 1705           Cu         Ni         P         Sn         Pb*         Zn           86 – 89         max. 2.0         max. 0.05         9.0 – 11.0         max 1.5         1.0           Se         S         Sb         standard standard         standard standard         standard standard         standard standard         standard standard         standard	) - 3.0	

// Physical properties (reference values)	
Density at 20°C	8.7 kg/dm³
Melting temperature/range	830 – 1030°C
Shrinkage	approx. 1.5 %
Coefficient of linear expansion in the range from 20°C to 200°C	18.5 x 10 <sup>-6</sup> °C <sup>-1</sup>
Electrical conductivity at 20°C	6 – 9 MS/m 10 – 16 % IACS
Electrical resistance at 20°C 0	.11 – 0.17 Ω mm²/m
Young's modulus	90 KN/mm <sup>2</sup>
Permeability	< 1.01
Thermal conductivity	0.71 W/cm °C

// Dynamic strength values at room temperature (reference values)	
Bending fatigue strength R <sub>bw</sub> at 10 <sup>8</sup> load cycles	75 N/mm²
Notched impact energy (ISO - V/KV)	17 joules

// Strength properties at room temperature					
(minimum values)					
[1] DIN 1705	R <sub>m</sub> N/mm²	R <sub>p0.2</sub> N/mm²	A₅ %	НВ	
[1] Sand casting	260	130	15	75	



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<ul> <li>Areas of application</li> <li>Rg 10 is used for</li> <li>Bearing shells and bushes</li> <li>Manifolds, flanges, covers, housings, parts for pumps</li> </ul>	Machinability index	approx. 80 (CuZn39Pb3 = 100)	
	Relaxation annealing	400 – 600 °C	
	Soft soldering	good	
Machinability <b>Rg 10</b> is easy to machine.	Brazing	good	
Short chips are formed.	Welding	Rg 10 can only be welded to a limited extent. The material tends to form hot cracks. Larger parts must be preheated and cooled in the oven. Suitable filler material e.g. CuSn8 = CF453K.	
	Galvanisability	good, but denser casting is necessary	



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