

## Copper-tin-zinc casting alloy **Rg 6** alloy 2960

**Rg 6** is a construction material with good strength and elongation. It is easy to cast and resistant to seawater.

Rg 6 is suitable for thin-walled valves and pump housings and other parts made of gunmetal whereby pressure tightness is the priority. The lead content is lower than 4 %. In contrast to Rg 5 and Rg 7, which have a higher lead content, Rg 6 is approved as a copper material in accordance with the RoHS and REACH directives as of 2021.

ZOLLERN brand	Rg 6
EN designation	CuSn7Zn2Pb3-C
EN material no:	CC492K

EN 1982

### // National designations

DIN	G-CuSn6ZnPb
DIN	2.1093
USA	≈ C92410
GB	LG4

≈ (substantial coherence)

### // Composition (mass fraction in %)

Cu	Ni	P	Sn	Pb	Zn
85.0 – 89.0	max. 2.0	max. 0.10	6.0 – 8.0	2.5 – 3.5	1.5 – 3.0
Al	Fe	S	Sb	Si	
max. 0.01	max. 0.2	max. 0.10	max. 0.25	max. 0.01	

### // Strength properties at room temperature

(minimum values)

	[1] EN 1982 [2] BS 1400	$R_m$ N/mm <sup>2</sup>	$R_{p0.2}$ N/mm <sup>2</sup>	$A_5$ %	HB
[1] Sand casting		230	130	14	65
[1] Mask mould casting		230	130	14	65
[1] Centrifugal casting		260	130	12	70
[2] Sand casting		250	~ 130	16	-
[2] Centrifugal casting		250	~ 130	6	-

### // Strength properties

at elevated temperatures (reference values)

Temperature	°C	20	150	200	250	300
Tensile strength	$R_m$ N/mm <sup>2</sup>	270	250	245	214	208
0.2% limit	$R_{p0.2}$ N/mm <sup>2</sup>	140	118	115	114	115
Elongation	$A_5$ %	15	12	11	10	9

### // Physical properties (reference values)

Density at 20°C	8.7 kg/dm <sup>3</sup>
Melting temperature/range	830 – 1030 °C
Shrinkage	approx. 1.5 %
Coefficient of linear expansion in the range from 20°C to 200°C	$18.5 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$
Electrical conductivity at 20°C	7 – 8 MS/m 12 – 14 % IACS
Electrical resistance at 20°C	0.125 – 0.143 $\Omega$ mm <sup>2</sup> /m
Young's modulus	96 KN/mm <sup>2</sup>
Permeability	< 1.01
Thermal conductivity	0.69 W/cm °C

### // Dynamic strength values

at room temperature (reference values)

Bending fatigue strength $R_{bw}$ at 10 <sup>8</sup> load cycles	80 N/mm <sup>2</sup>
Notched impact energy (ISO - V/KV)	17 joules

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### Areas of application

- Fittings and pump housings, manifolds and parts for heat exchangers, including those in contact with seawater

### Machinability

**Rg 6** is easy to machine. Short chips are formed.

**Machinability index** approx. 75 (CuZn39Pb3 = 100)

**Relaxation annealing** 400 – 600 °C

**Soft soldering** good

**Brazing** possible

**Welding** Rg 6 can only be welded to a limited extent. TIG welding is preferable. Suitable filler material e.g. CuSn8 = CF453K or CuSn12 = CF461K

**Galvanisability** good, but denser casting necessary

**Surface treatment** blasting, grinding and polishing are easily possible

