

Wrought copper-aluminium alloy EBh-W97 alloy 1570

EBh-W97 (W97 = heat treated) belongs to the group of high-strength aluminium multi-components bronzes. Tempering is possible up to a wall thickness of 100 mm and improves the strength. Bars should not be longer than 500 mm. The strength values are among the highest achievable with copper alloys. The material has a high corrosion resistance.

	ZOLLE	RN brand	EBh-W97			
	EN de	signation	CuAl11Fe6Ni6			
	EN ma	aterial no:	CW308G			
// National	designations	/ ISO				
		DIN	CuAl11Ni6Fe5			
		DIN	2.0978			
		USA	≈ C63020			
		AMS	2020 4440	(500 and a	≈ 4590	
// Composit	(≈s tion (weight b	AMS similar to C6 by per cent	3020, AMS . in %)	4590 see a	≈ 4590 also material VBw)	
// Composit	(≈ s t ion (weight b Al	AMS similar to C6 y per cent	3020, AMS . in %) Mn	:4590 see a	≈ 4590 also material VBw) Ni	
// Composit Cu Rest	(≈ s tion (weight b Al 10.5 – 12.5	AMS similar to C6 by per cent Fe 5.0 –	3020, AMS . in %) Mn 7.0	4590 see a max. 1.5	≈ 4590 also material VBw) Ni 5.0 – 7.0	
// Composit Cu Rest Pb	(≈ s	AMS similar to C6 y per cent Fe 5.0 – Sn	3020, AMS in %) Mn 7.0 Zn	4590 see a max. 1.5	 ≈ 4590 also material VBw) Ni 5.0 - 7.0 Other 	
// Composit Cu Rest Pb max. 0.05	(≈ s tion (weight b AI 10.5 – 12.5 Si max. 0.2	AMS similar to C6 y per cent Fe 5.0 - Sn max.	3020, AMS in %) / Mn 7.0 / Zn 0.1	4590 see a max. 1.5 max. 0.4	 ≈ 4590 also material VBw) Ni 5.0 - 7.0 Other max. 0.2 	

	(no minimum values)			
	R _{p0.2} N/mm²	R _m N/mm²	A₅ %	HB 30
Forgings up to 100 mm thickness	650	850	2-6	270

Minimum values on request. If a higher elongation is desired, then the material VBw(≈ C63020 or AMS ≈ 4590) is recommended. Higher strength values are achieved with VB quenched and tempered = CW308G.

	// Physical properties
7.6 kg/dm³	Density at 20 °C
1060 – 1075 ℃	Melting temperature/range
	Coefficient of linear expansion
15 x 10 ⁻⁶ °C ⁻¹	from - 200° to 20°C
15 x 10 ⁻⁶ °C ⁻¹	from 20° to 100°C
17 x 10 ^{.6} ℃ ¹	from 20° to 300°C
0.452 J/g x ℃	Specific heat at 20°C
0.38 W/cm x°C	Thermal conductivity at 20°C
4 – 6 MS/m	Electr. conductivity at 20°C
0.167 - 0.25 Ω mm²/m	Electr. resistance at 20°C
0.0005 °C-1	Temperature coefficient of the electrical resistance (0 - 100°C)
< 1.6	Permeability
117 KN/mm²	Young's modulus



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Areas of application Relaxation EBh-W97 is a high-strength material with a high load max. 500°C annealing capacity. It is particularly suitable for • Bearings and worm wheels with sliding speeds Soft annealing 800 - 900°C <1m/s. A hardened mating material is necessary. with subsequent furnace cooling Surface pressures of up to more than 25 KN/mm² down to 650°C, then air cooling are possible under suitable conditions. For example, not recommendable for toggle lever bearings, sliding strips, wear strips Soft soldering and wedge gibs in mechanical engineering. Highly stressed applications in plastic injection poor, fluxes containing fluoride and Brazing chloride of type F - SH1 and silver moulds where good thermal conductivity is required at the same time. solders are advantageous · Balls, mandrels and crease smoothers for forming tools. Welding TIG, MIG as well as manual · Bearing bushes, rotary and swivel bearings electrode welding is possible. in aircraft landing gears. Suitable filler materials are e.g. CuAl9Ni4Fe2Mn2 = CF310G or EBh-W97 has good resistance to scaling, S-CuAl8Ni2, material number erosion and cavitation. 2.0922. However, the strength values of the base metal are not Machinability achieved in the weld metal and in Carbide tools are needed for turning and the heat flow zone. milling and sharp tools are needed for drilling and thread cutting. This results in a machinability Surface that is better than that of austenitic stainless steel. treatment polishing, chemical structuring Shorter rolling and flowing chips are formed. and galvanic treatments are Cutting and die-sinking is easily possible, and the possible. With electroplated surface can also be structured decoratively by etching. coatings, a copper backup bar is advisable

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