SM7600 (C 19010)

CuNi1.5Si

Alloy characteristics

SM7600 is an alloy with an α-structure and it is predestinated for excellent properties for connectors in the automotive part industry. This alloy has the highest increasing in volume from all coroson (CuNiSi) alloys in the last two decades all over the world. The main request for this alloy is the good relaxation behavior, paired with a fair electrical conductivity and medium tensile strength. SM7600 can be used for formed parts and for contact springs, because of an excellent fatique strength. The spring properties of SM7600 is even very good. Main applications are as well transistor carriers, all kind of car electrics, connector pins (male), but as well leaf springs for switches and relays.

The SM7600 has a good corrosion resistance and is very insensitive for for cracking while stress corrosion. In general this alloy is even able to be hardened by heat precipitation, what SOFIA MED will refer to in late 2017. There is a registering by this alloy at the U.S. EPA as antimicrobial and it respects with Pb and Cd the requirements of the OEKO-TEX Standard 100.

Mechanical properties		Temper conditions				
		0 R360 HV100	H02 R400 HV125	H03 R460 HV135	H06 R520 HV145	H08 R580 HV160
Tensile strength in N/mm²		360 – 430	420 – 480	460 – 520	520 – 580	580 – 660
0,2% yield strength in N/mm²		270	360	420	470	520
Vickers hardness HV (for reference only)		100 – 130	125 – 150	135 – 160	145 – 170	160 – 210
Elongation $A_{L50\%}$		> 12	> 10	> 8	> 5	> 5
Electrical conductivity in % IACS		60	60	60	55	55
Bendability						
0.10 ≤ s ≤ 0.25 mm	Transverse	0 x t	0 x t	0 x t	0.5 x t	1 x t
	Parallel	0 x t	0.5 x t	0.5 x t	1.5 x t	1.5 x t
0.25 < s ≤ 0.5 mm	Transverse	0 x t	0 x t	0.5 x t	1.5 x t	2 x t
	Parallel	0 x t	0.5 x t	1 x t	2.5 x t	4 x t

Physical properties		
Thermal expansion coefficient 20 … 300 °C	17	10^{-6}/K
Density	8.9	g/cm³
Thermal conductivity	430	W/(m·K)
Modulus of elasticity (1 GPa = 1 kN/mm²) cold formed	128	GPa = kN/mm²
Electrical conductivity soft	49	MS/m

Material designation	
DIN EN Symbol	CuNi1.5Si
UNS	C19010
JIS	C1901

Chemical composition	
Cu	Balance
Ni	0.8-1.8 %
Si	0.15-0.35 %
Other	< 0.5 %

This information was given with the best knowledge, but cannot guarantee any characteristics we describe listed above. The contract terms of Sofia Med agreed with any individual customer and our general conditions of sales describe the liability of these conditions.
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