

SM6475 (C64750)

CuNi2SiSn

Alloy characteristics

SM6475 is one important alloy of the CuNiSi (Coroson) family. This alloy is even a α -alloy. Its characteristics are: good fatigue strength, forming and spring properties. Due to the tin content we reach higher matrix strength. The alloy is workable for all pin connectors and for connectors with high tensile strength and good relaxation behavior.

SM6475 alloy is one of the leading Corosons for the development and design of pretinned connectors in the industry in Asia and the USA. It is in compliance to the requirements of the OEKO-TEX Standard 100 in terms of the PB and Cd. The alloy is registered with the U.S. EPA as antimicrobial.

Mechanical properties	Temper condition							
	O HV100-130	H02 HV130-150	H03 HV140-160	H03+ HV175-200	SA00 ** HV170-200	SA10 ** HV190-240	SA03 ** HV200-250	
Tensile strength in N/mm ²	360-430	420-480	460-530	588-657	600-670	650-750	660-760	
0,2% yield strength in N/mm ²	<250	>380	>430	>460	>470	>600	>620	
Vickers hardness HV (ref.value)	100-130	130-150	140-160	175-200	170-200	190-240	200-250	
Elongation A _{L50%}	> 12	> 9	> 7	> 6	> 12	> 7	>2	
Electrical conductivity in % IACS	40	40	40	40	40	38	40	
Bendability								
0.10 ≤ s ≤ 0.25mm	Transverse	0 x t	0 x t	0.5 x t	0.5 x t	0 x t	1 x t	2 x t
	Parallel	0 x t	0.5 x t	1 x t	1 x t	0.5 x t	1.5 x t	5 x t
0.25 < s ≤ 0.5mm	Transverse	0 x t	0 x t	1 x t	1 x t	0.5 x t	2 x t	2 x t
	Parallel	0 x t	0.5 x t	2 x t	2 x t	1 x t	2.5 x t	6 x t

Physical properties (Typical values in annealed temper at 20 °C)

Thermal expansion coefficient 20 ... 300 °C	17	10 ⁻⁶ /K
Specific heat capacity	0.377	J/(g·K)
Density	8.8	g/cm ³
Thermal conductivity	124	W/(m·K)
Thermal coefficient of electrical resistance (0 ... 100 °C)	1.5	10 ⁻³ /K
Modulus of elasticity (1 GPa = 1 kN/mm ²) cold formed	130 max.	GPa
Electrical conductivity (IACS)	40 (SA00: 38)	%

Material designation

DIN EN	
UNS	C64750

Chemical composition

Cu	Rest %
Ni	1.7 – 2.1 %
Zn	0.25-0.50 %
Sn	0.25-0.50 %
Fe	<0.1%
Others	<0.1%

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** solution annealed