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CuNi44

Designation	EN / CuNi44Mn1	Material # / 2.0842	UNS / C72150

This copper-nickel resistance alloy, also known as constantan, is characterized by a high electrical resistance coupled with a fairly small temperature coefficient of the resistance. This alloy also shows high tensile strength and resistance towards corrosion. It can be used at temperatures of up to 600°C in air.

COMPOSITION OF MATERIAL

• Ni: 43 - 45 % • Cu: balance • Mn: ≤ 1,2 %

PHYSICAL PROPERTIES

· Density	8,9 g/cm³
· Melting point	1230 - 1290 °C
· Electrical conductivity	2 m/Ω mm² (at 20 °C R330)
· Electrical resistivity	0,49 Ω mm²/m (at 20 °C R330)
· Temperature coefficient of electrical resistance	-80 to +40·10^{-6}/K (at 20 to 105 °C R330)
· Thermal conductivity	23 W/K m (at 20 °C)
· Thermal capacity	0,41 J/g K (at 20 °C)
· Coefficient of thermal expansion (linear)	14,5·10^{-6}/K (at 20 to 300 °C)
· Modulus of elasticity (tensile)	165 GPa (at 20 °C R330)

MANUFACTURING PROGRAM	THICKNESS	WIDTH
Rolls, spools, sheets	0,01 - 0,15 mm	1 - 640 mm

not all combinations of thickness and width are available
or different dimensions please contact our technical service

TYPICAL TEMPER VALUES (information only)

	Tensile strength Rm in MPa	Yield strength $Rp_{0,2}$ in MPa	Elongation in % L_0 = 100 mm
R330	≥ 550	< 450	> 10
R560	≥ 560	> 450	< 3

The values in the table are valid only for foils with thickness > 0,1 mm.

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