

Resistant Alloys

Copper-Nickel Alloys



1. Chemical composition

	Ni	Cr	Fe	Cu	Others
%	44	-	-	Bal.	Mn +

2. Physical properties

- Resistivity ($\Omega \text{ mm}^2/\text{m}$)	: 0.49
- Temperature coefficient ($\text{K} \times 10^{-6}/^\circ\text{C}$) from 20 to 100 °C	: 20/60
- Thermal conductivity at 120 °C ($\text{Wm}^{-1} \text{ } ^\circ\text{C}^{-1}$)	: 21.1
- Coefficient of linear expansion (coeff. $10^{-6}/^\circ\text{C}$) from 20 to 100 °C	: 14
- Density (g/cm^3)	: 8.90
- Melting point ($^\circ\text{C}$)	: 1 210
- Maximal operating temperature ($^\circ\text{C}$)	: 600

Standard mechanical properties

- Tensile Strength (daN/mm^2)	: 50
- Yield Strength (daN/mm^2)	: 30
- Elongation (A% on 100 mm)	: ≥ 25
- Hardness (HV)	: 120

3. Typical Applications

CuNi 44 presents the particularity to have a very low temperature coefficient, which makes it particularly interesting during its utilization in precision measurement testers. This is a very malleable, very ductile alloy, which presents a very good resistance to oxidation.

CuNi 44 has also a very good solderability.

Another field of application is manufacturing of thermocouples because it develops a high electromotive force (EMF) in association with others metals.

April 2012 - The data enclosed in this document are only given as indicative values and correspond to our standard products. Different specific requirements are subject to discussion and formal approval by Aperam Alloys Rescal. For further information or special request, please contact us.