2.0842 CuNi44

Excellence in Specialty Steel

Material Designation

2.0842	DIN
C72150	UNS
N04401	UNS

Standards

DIN 17471

Chemical Composition Mass-%

	Ni	Cu	Fe	Mn	C	S
min.	43	Rest	-	0,7	-	-
max.	45	(52-56)	1	1,3	0,035	0,005

Properties

CuNi44 has a particularly small temperature coefficient of electrical resistance and is also known under the brand name constantan. The thermoelectric emf is high compared to Cu. The material is scale-resistant and resistant up to 600 °C to oxygen-containing and oxidising sulphurous gases and carburisation, among others.

Application Area

Electrical measuring instruments and low temperature heating elements with application temperatures up to 600 °C.

Typical Applications

- Precision and measuring resistors
- Thermocouples
- Heating wires and cables
- Heating mats

Delivery Condition

- annealed (+A)
- final annealed
- bright drawn

Supply form

Wire (on spool up to 3mm, coils, casks)
Bright bars

Mechanical Properties room temperature

Dimension [mm]	Tensile strength [ksi]	[N/mm²]	Elongation [%]
0,063 ≤ 0,125	≥ 71	≥ 420	≥ 18
0,126 ≤ 0,500	≥ 71	≥ 420	≥ 20
0,5 ≤ 1,00	≥ 71	≥ 420	≥ 20
> 1,00	≥ 71	≥ 420	≥ 25

Physical Properties acc. to DIN 17471

Temperature [°F]	20	200	400
Electrical resistivity [Ω mm²/m]	0,49	0,49	0,49
Thermoelectric emf compared to Cu [µV/K]	- 40		
Thermal conductivity [W/m·K]	23,0		
Specific heat capacity [kJ/kg·K]	0,41		
Melting temperature [°F]	1280		
Density [g/cm³]	8,9		

Temperature [°F]	20-100	20-400
Thermal expansion coeff. x [10^{-6}/K]	13,5	15
Temperature coefficient of electrical resistance [ppm/K]	- 80 ... + 40	

Quality

- ISO 9001
- ISO 14001
- ISO 50001
- Approvals acc. to standards like ABS, BV, DNV ...
- Customer specific approval certificates

Innovation

- Fully automated ultrasonic testing up to dia. 37.4''
- CO_2-reduction by innovative heat treatment solutions

Flexibility

- Product range from fine wire to forging
- Directly from stock close at hand

Individuality

- Dimensions
- Tolerances
- Surface qualities
- Delivery conditions

Your personal contact:

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