



Brand Name	ISA®-NICKEL K500				
Material Code	2.4375				
Abbreviation	NiCu30Fe				
Chemical Composition (mass components) in %. Average values of alloy components					
Ni Rem.	Cu 30	Al 2.5	Fe 1	Mn 1	Ti 0.5

Features and Application Notes

ISA®-NICKEL K500 is known for its high resistance to oxidation and chemical corrosion. These features govern the application: Wire cloth, connecting braids for heating elements, welding wires and many more applications.

Form of Delivery

ISA®-NICKEL 400 is supplied in the following versions:

- RODS (Ø 12 – 200 mm // 0.5 – 8")
- hot rolled / forged / extruded
- WIRE (Ø 0.05 – 5.5 mm // 0.002 – 0.217")
- STRIP

Electrical Resistance in Annealed Condition

Temperature coefficient²⁾ of electrical resistance between

Electrical resistivity in: $\mu\Omega \times \text{cm}$ (first line) and Ω / CMF (second line)
Reference Values

+20 °C and +105 °C
10⁻⁹/K

+20 °C
tolerance $\pm 10\%$

+100 °C

+200 °C

+300 °C

+400 °C

+500 °C

+700 to +900

49

52

56

60

63

67

295

313

337

361

379

402

Physical Characteristics (Reference Values)

Density at +20 °C

Melting point

Specific heat
at +20 °C

Thermal conductivity
at +20 °C

Average linear thermal expansion coefficient
between +20 °C and

+100 °C

+400 °C

g/cm³

lb/cub in

°C

J/g K

W/m K

10⁻⁶/K

10⁻⁶/K

8.5

0.31

+1,315

0.42

17.4

13.7

15.3

Mechanical Properties at +20 °C in Annealed Condition

Tensile Strength³⁾

Elongation ($L_0 = 100 \text{ mm}$) % at
nominal diameter in mm

E-Module

MPa

psi

%

GPa

450

85,250

30

180

Notes on Treatment // ISA®-NICKEL K500 is easy to process.

Copper-nickel alloys can be soft and hard soldered as well as welded by the known processes.

1) ISA®-NICKEL is a registered trademark of Isabellenhütte Heusler GmbH & Co. KG.

2) ISA®-NICKEL is not standardized as a resistance alloy.

3) This value applies to wires of 2.0 mm diameter.