



Brand Name	ISA®-NICKEL 400				
Material Code	2.4360				
Abbreviation	NiCu30Fe				
Chemical Composition (mass components) in %.					
Average values of alloy components					
Ni	Cu	Fe	Mn		
Rem.	31	1	1		

Features and Application Notes

ISA®-NICKEL 400 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. The maximum working temperature in air is +700 °C.

Form of Delivery

ISA®-NICKEL 400 is supplied in the form of round wires in the range 0.03 to 8.00 mm Ø and stranded wires in bare condition.

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 ⁻⁶ /K	+20 °C tolerance $\pm 10\%$	+100 °C	+200 °C	+300 °C	+400 °C	+500 °C
+500 to +700	51.1	53.7	55.9	57.4	58.7	60.3
	307	322	337	346	355	367

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
8.8	0.32	+1,300	0.43	22	14.2	16.1

Mechanical Properties at +20 °C in Annealed Condition

Tensile Strength ³⁾		Elongation (L ₀ = 100 mm) % at nominal diameter in mm	E-Module
MPa	psi	%	GPa
450	85,250	30	180

Notes on Treatment // ISA®-NICKEL 400 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.