

Nickel 270 (UNS N02270/W. Nr. 2.4050) is a high-purity grade of nickel made by powder metallurgy. It has a low base hardness and high ductility. Its extreme purity is useful for components of hydrogen thyratrons. It is also used for electrical resistance thermometers.

Physical Constants & Thermal Properties

Table 2 - Physical Constants & Thermal Properties

Density, lb/in ³	0.322
g/cm ³	8.91
Melting Point, °F.....	2650
°C.....	1454
Specific Heat, Btu/lb•°F.....	0.110
J/kg•°K.....	460
Permeability.....	Ferromagnetic
Coefficient of Expansion, 70-200°F, 10 ⁻⁶ in/in•°F.....	7.4
20-95°C, μm/m•°C.....	13.3
Thermal Conductivity, Btu•in/ft ² •h•°F.....	595
W/m•°C.....	86
Electrical Resistivity, ohm•circ mil/ft.....	45
μohm•m.....	0.075

Table 1 - Limiting Chemical Composition, %

Nickel (Plus Cobalt).....	99.9 min.
Copper.....	0.01 max.
Iron.....	0.05 max.
Manganese.....	0.003 max.
Carbon.....	0.02 max.
Sulfur.....	0.003 max.
Titanium.....	0.005 max.
Magnesium.....	0.005 max.
Silicon.....	0.005 max.

Typical Mechanical Properties

Table 3 - Typical Mechanical Properties of Annealed Nickel 270

Tensile Strength, ksi.....	50
MPa.....	345
Yield Strength (0.2% Offset), ksi.....	16
MPa.....	110
Elongation, %.....	50

Available Products and Specifications

Nickel 270 is designated UNS N02270 and W.Nr. 2.4050 and is available as strip, round bar and wire.

Major specifications:

ASTM F 3

Nickel 270

