

Invar 42, also known as Alloy 42 or Nilo 42, is a nickel-iron alloy with a low coefficient of thermal expansion. It is an expansion-controlled material that is specifically designed to exhibit a minimal change in dimension with temperature fluctuations. Invar 42 is often used in applications that require precise dimensional stability and reliable performance over a wide temperature range.

Chemical Composition

Element	Maximum Unless Range is Specified
Silicon	.20
Carbon	.02
Phosphorus	.002
Sulfur	.002
Manganese	.35
Nickel	42.00
Iron	Balance

Physical Properties

Property	Maximum Unless Range is Specified
Density,lbs/in3	0.297
Melting Point (Deg°F)	2600
Electrical	
Conductivity ,Btu•ft/ft2 •hr•°F	74.5
Modules of Elasticity ,ksi	21,000

Mechanical Properties

Property	Maximum Unless Range is Specified
Ultimate Tensile Strength,ksi	72
Yield Strength,ksi	37
Hardness, Rb	75

The material properties in this datasheet are provided by one of the manufacturers collaborating with Naxtry. Please note that material properties may slightly vary among different manufacturers. Naxtry can accommodate customer requests for specific materials or brands.