



Hamilton Precision Metals  
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## TECHNICAL DATA SHEET

### RODAR®

Rodar is an Iron-Nickel-Cobalt alloy with a unique linear thermal expansion coefficient. It is also stable to cryogenic temperatures. This combination of characteristics has prompted its application in electrical package sealing of glass/metal and ceramic/metal.

#### NOMINAL COMPOSITION:

Nickel	29.0%	Iron	Balance
Cobalt	17.0%		

#### TYPICAL MECHANICAL PROPERTIES:<sup>1</sup>

	<u>ANNEALED</u>
Ultimate Tensile Strength	75,000 PSI
Yield Strength (.2% Offset)	50,000 PSI
Elongation in 2" *	30%
Modulus of Elasticity (Tension)	20 x 10 <sup>6</sup> PSI
Poisson's Ratio	0.317

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<sup>1</sup> These values may be adjusted by control of process variables – consult HPM for desired values.

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## RODAR

### PHYSICAL PROPERTIES:<sup>2</sup>

Density	-	0.302 lbs/cu.in.
Melting Point (Approx.)	-	1455° C
Electrical Resistivity @ R.T.	-	49 Microhm· cm
Temperature Coefficient of Resistivity (25° to 100° C)	-	3700 PPM/° C
Thermal Expansion Coefficient (30° to 400° C)	-	4.9 x 10 <sup>-6</sup> /°C
Thermal Conductivity @ 100° C	-	16.7 W/m· K
Curie Temperature	-	435° C
Magnetic Attraction	-	Yes

### GENERAL INFORMATION:

Rodar can be formed and deep drawn from the annealed temper. A 1/8 hard temper is optimum for heavy piercing. The material can be joined to other metals by welding, brazing, and soldering. The joint design must consider that Rodar has a lower expansion coefficient than most other metals.

### AVAILABILITY:

Rodar is available from Hamilton Precision Metals as strip product in thicknesses from .001" to .060" and width up to 12.0". The material conforms to ASTM F15, AMS 7728 and UNS K94610.

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<sup>2</sup> Typical values to guide alloy selection but are not a guarantee of minimum or maximum.