Hamilton Precision Metals
1780 Rohrerstown Road, Lancaster, PA 17602
Phone: (717) 569-7061 Fax: (717) 569-7642

TECHNICAL DATA SHEET

HPM® Beryllium Nickel

HPM® Beryllium Nickel is a Beryllium-Nickel alloy capable of high strength through precipitation heat treatment. The excellent spring characteristics to 550°F make it suitable for many of the most demanding electromechanical devices.

NOMINAL COMPOSITION:

Beryllium	1.90%	Nickel	Balance
Titanium	.50%		

TYPICAL MECHANICAL: [1]

	ANNEALED	COLD ROLLED	COLD ROLLED HEAT TREATED
Ultimate Tensile Strength	100,000 PSI	190,000 PSI	270,000 PSI
Yield Strength	50,000 PSI	180,000 PSI	250,000 PSI
Elongation in 2" *	30%	1%	2%
Modulus of Elasticity (Tension)	28.5 $X10^6$ PSI		
Poisson's Ratio	0.295		

*****The measured elongation will be less as thickness decreases to .002" and less.

[1] These values may be adjusted by control of process variables – consult HPM for desired values.

HPM BERYLLIUM NICKEL

PHYSICAL PROPERTIES:[2]

Density……..	0.309 lbs/cu.in.
Melting Point (Approx.)……...	1185° C
Electrical Resistivity @ R.T.	
Cold Rolled……...	43.1 Microhm.cm
Heat Treated……..…	28.7 Microhm.cm
Thermal Expansion Coefficient…… (25º to 550º C)	14.4 X 10^{-6}/ºC
Thermal Conductivity @ R.T……	48.4 W/m· K
Magnetic Attraction…….	Yes

GENERAL INFORMATION:

The alloy can be readily formed and even deep drawn from the annealed temper. Cold rolled tempers prior to heat treatment can be blanked and folded provided a radius to thickness ratio approaches 2.0. The optimum heat treatment for highest strength is 925ºF for 2 hours. The material can be joined using conventional TIG methods, silver brazed and soldered.

AVAILABILITY:

HPM Beryllium Nickel is available from Hamilton Precision Metals as strip product in thicknesses from .0005" to .025" in widths up to 7.0". A foil product is available as thin as .000085" and widths of 4.0" maximum. The material conforms to UNS N03360.

[2] Typical values to guide alloy selection but are not a guarantee of minimum or maximum.