



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

TECHNICAL DATA SHEET

HPM® 965

HPM® 965 is a high purity Nickel-Iron alloy that exhibits moderate electrical resistivity and a high temperature coefficient of resistance. This combination of electrical characteristics makes it suitable for use as a self-regulating heating element or temperature sensor.

NOMINAL COMPOSITION:

Iron	35%
Manganese	0.25%
Nickel	Balance

TYPICAL MECHANICAL PROPERTIES:¹

	<u>ANNEALED</u>
Ultimate Tensile Strength	85,000 PSI
Yield Strength (.2% Offset)	35,000 PSI
Elongation in 2" *	35%
Hardness	137 H _v

*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® 965

PHYSICAL PROPERTIES²

Density	-	0.293 lb/in ³
Melting Point (approx.)	-	1425°C
Electrical Resistivity @ R.T.	-	21.2 Microhm-cm
Temperature Coefficient of Resistivity 0° TO 100° C	-	5000 to 5500 ppm/°C
Thermal EMF vs. Cu (approx.) 0° to 100° C	-	-44 Microvolts/°C
Thermal Expansion Coefficient 20° to 100° C	-	15 X 10 ⁻⁶ /°C
Thermal Conductivity @ 100°C (approx.)	-	29 W/m·K
Magnetic Attraction	-	Yes

GENERAL INFORMATION:

The alloy can be readily formed in the annealed temper and can be joined by standard welding methods.

AVAILABILITY:

HPM® 965 is available from Hamilton Precision Metals as foil and strip product in thicknesses from .0005” to .015” and in widths up to 12”. It is also available as thin as .000100” and in widths up to 4” maximum.

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