



## HPM® 80/20 A

HPM® 80/20 A is a resistance alloy used in electric heating applications. It is recommended for use in dry air applications up to 2150°F with good hot strength.

### GENERAL INFORMATION

The alloy forms rather well and has good welding characteristic. Caution should be used to avoid extended exposure to elevated temperature in marginally oxidizing or partially reducing atmospheres as it would be susceptible to "green rot" corrosion, carburization and sulfurization.

### AVAILABILITY

HPM® 80/20 A is available from Hamilton Precision Metals as strip product in thicknesses from 0.0005" to 0.050" (0.0127 mm to 1.27 mm) and width up to 12" (304.8 mm). The material conforms to ASTM B-344.

Foil product may be supplied in thickness to 0.0001" (0.00254 mm) in width up to 4.0" (101.6 mm).



## Technical Data

TYPICAL MECHANICAL PROPERTIES <sup>1</sup>		
	ANNEALED	COLD ROLLED
Ultimate Tensile Strength	105,000 PSI	190,000 PSI
Yield Strength (0.2% Offset)	50,000 PSI	185,000 PSI
Elongation in 2" *	35%	1%
Modulus of Elasticity (Tension)	31 X 10 <sup>6</sup> PSI	-

\*The measured elongation will be less as thickness decreases to 0.002" and less.

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

NOMINAL COMPOSITION	
Chromium	19.5%
Silicon	1.25%
Iron	0.50%
Manganese	0.40%
Nickel	Balance

PHYSICAL PROPERTIES <sup>2</sup>	
Density	0.304 lbs./cu.in.
Melting Point (Approx.)	1400°C
Electrical Resistivity @ R.T.	108 Microhm · cm
Temperature Coefficient of Resistivity (TCR) (25° to 105°C)	100 ppm/°C
Thermal Expansion Coefficient (20° to 100°C)	13.4 x 10 <sup>-6</sup> /°C
Thermal Conductivity @ 100°C	13.4 W/m · K
Magnetic Attraction	None
Specific Heat	0.104 gram · cal./°C

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

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