



Hamilton Precision Metals
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TECHNICAL DATA SHEET

HPM[®] 625

HPM[®] 625 is a nickel-chromium-molybdenum alloy with niobium which is well suited for a wide range of severe corrosive environments. The alloy composition provides a product which performs well at elevated temperatures up to 1800° F. The strength can be increased by cold working.

NOMINAL COMPOSITION:

| | | | | | |
|----------|-------|---------|------|------------|------|
| Chromium | 22.0% | Iron | 4.0% | Molybdenum | 9.0% |
| Nickel | 61.0% | Niobium | 3.5% | | |

TYPICAL MECHANICAL PROPERTIES:¹

| | <u>ANNEALED</u> | <u>COLD ROLLED</u> |
|---------------------------------|--------------------------|--------------------|
| Ultimate Tensile Strength | 135,000 PSI | 180,000 PSI |
| Yield Strength (.2% Offset) | 75,000 PSI | 160,000 PSI |
| Elongation in 2" * | 45% | 2% |
| Modulus of Elasticity (Tension) | 30 x 10 ⁶ PSI | |
| Poisson's Ratio | 0.28 | |

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

HPM 625

PHYSICAL PROPERTIES:²

| | | |
|---|---|-----------------------------|
| Density | - | 0.305 lbs./cu.in. |
| Melting Point (Approx.) | - | 1290°C |
| Electrical Resistivity @ R.T. | - | 129 Microhm· cm |
| Thermal Expansion Coefficient (20° to 100°C) | - | 13.3 x 10 ⁻⁶ /°C |
| Thermal Conductivity @ R.T. | - | 9.8 W/m. K |
| Curie Temperature | - | < - 196°C |
| Magnetic Permeability at 200 Oe | - | 1.0006 |
| Magnetic Attraction | - | None |

GENERAL INFORMATION:

The alloy is readily formed in the annealed temper, and can be joined by the standard welding and brazing processes.

AVAILABILITY:

HPM 625 is available from Hamilton Precision Metals as strip product in thicknesses from .001” to .025” in widths up to 12.0”. The material conforms to ASTM B443, AMS 5599 and UNS N06625.**

**Hamilton Precision Metals can also supply product to AMS 5879 (UNS N06626) for demanding fatigue applications, which incorporates double melting, and restrictive limits for Carbon and Nitrogen.

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