

L-605™



L-605 (UNS R30605)

L-605™ is a nonmagnetic cobalt-based chromium-tungsten-nickel alloy that has excellent corrosion and oxidation resistance, and high strength at both room and elevated temperatures. Through work hardening, high strength levels can be obtained. L-605™ has a minimal heat treatment response, but can be used in the cold worked and aged condition. Applications include medical implant devices, springs, valves, and engine components for the aerospace industry. As a result of its high tungsten content, L-605™ is radiopaque, which is beneficial for implant devices.

GENERAL INFORMATION

Because of the alloy's high work hardening rate, only minimal reductions can be taken before solution annealing will be required. L-605™ is very resistant to oxidation and scaling at elevated temperatures, and is nonmagnetic in all conditions. L-605™ is produced by vacuum induction melting followed by electroslag remelting (VIM-ESR), and as such, has a low nonmetallic inclusion level.

AVAILABILITY

L-605™ is available from Hamilton Precision Metals as strip product. Contact HPM Sales Department for size capability information. The material corresponds to UNS R30605.



Technical Data

TYPICAL MECHANICAL PROPERTIES ¹	
	ANNEALED
Ultimate Tensile Strength	165,000 PSI
Yield Strength (0.2% Offset)	85,000 PSI
Elongation in 2"+	30%
Hardness	91 HRb
Modulus of Elasticity	35.3 X 10 ⁶ PSI

+The measured elongation will be less as thickness decreases to 0.003" and less

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

PHYSICAL PROPERTIES ²	
Density	0.330 lbs/cu.in.
Melting Point (Approx.)	2500°F
Electrical Resistivity @ R.T.	88.7 Microhm · cm
Thermal Expansion Coefficient (RT to 200°C)	12.9 PPM/°C
Thermal Conductivity @ R.T.	12.7 W/m · K

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

NOMINAL COMPOSITION	
Nickel	10%
Tungsten	15%
Chromium	20%
Iron	3.00% Max
Manganese	1.5%
Carbon	0.10%
Silicon	1.00% Max
Cobalt	Balance