

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.

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.

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.



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