

Elgiloy® Co-Cr-Ni Alloy, Wire, 47% Cold Reduction (Coil Spring Range), Heat Treated

Category : Metal , Nonferrous Metal , Cobalt Alloy , Superalloy

Material Notes:

Heat Treatment 5 hours at 527°C. 45-48% cold reduction is the normal coil spring range. The strength, shear modulus, and hardness values are specific to this heat treatment; other values below are typical of Elgiloy®. General Elgiloy® information: High strength, ductility, fatigue life, and good mechanical properties. Corrosion resistant in numerous environments. Available in strip (currently 0.0015" to 0.075" thickness and 0.023" to 9.00 " width), round wire (0.006" to 0.625" diameter), sheet, cable, ribbon, bar, rod, and some fabricated parts. General Forming Notes: Forming should be done prior to heat treatment since heat treatment strengthens the material and makes it more difficult to form. Bending of strip should take place perpendicular to the rolling direction so that it will be across the elongated grain structure rather than parallel to it. In bending strip, a 90° bend should be at least 8 times the material thickness; in a 360° bend, a diameter of 18 to 25 times the material thickness is usually acceptable. Wire should not be formed beyond a mean diameter of 4 times the wire size.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Elgiloy-Co-Cr-Ni-Alloy-Wire-47-Cold-Reduction-Coil-Spring-Range-Heat-Treated.php

Physical Properties	Metric	English	Comments
Density	8.30 g/cc	0.300 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	476	476	Estimated from Rockwell C
Hardness, Rockwell A	75	75	Estimated from Rockwell C
Hardness, Rockwell C	50	50	
Hardness, Vickers	510	510	Estimated from Rockwell C
Tensile Strength, Ultimate	2190 MPa	318000 psi	
Tensile Strength, Yield	1900 MPa	276000 psi	
Modulus of Elasticity	194 GPa	28100 ksi	Calculated
Poissons Ratio	0.226	0.226	
Fatigue Strength	500 MPa	72500 psi	Zero-to-Torsion Fatigue
	@# of Cycles 1.00e+6	@# of Cycles 1.00e+6	
	1000 MPa	145000 psi	Zero-to-Torsion Fatigue
	@# of Cycles 11000	@# of Cycles 11000	
Shear Modulus	79.0 GPa	11500 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	15.17 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	8.428 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
	@Temperature 0.000 - 500 $^\circ\text{C}$	@Temperature 32.0 - 932 $^\circ\text{F}$	
Specific Heat Capacity	0.430 J/g- $^\circ\text{C}$	0.103 BTU/lb- $^\circ\text{F}$	
Thermal Conductivity	12.5 W/m-K	86.8 BTU-in/hr-ft 2 - $^\circ\text{F}$	
Melting Point	1427 $^\circ\text{C}$	2601 $^\circ\text{F}$	

Component Elements Properties	Metric	English	Comments
Beryllium, Be	<= 0.10 %	<= 0.10 %	
Carbon, C	<= 0.15 %	<= 0.15 %	
Chromium, Cr	19 - 21 %	19 - 21 %	
Cobalt, Co	39 - 41 %	39 - 41 %	
Iron, Fe	11.25 - 20.5 %	11.25 - 20.5 %	As remainder
Manganese, Mn	1.5 - 2.5 %	1.5 - 2.5 %	
Molybdenum, Mo	6.0 - 8.0 %	6.0 - 8.0 %	
Nickel, Ni	14 - 16 %	14 - 16 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000996 ohm-cm	0.0000996 ohm-cm	
Magnetic Permeability	1.0004	1.0004	For all practical purposes, Elgiloy® is nonmagnetic through all temperature ranges.

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China