

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

Category : Metal , Nonferrous Metal , Cobalt Alloy , Superalloy

### Material Notes:

45-48% cold reduction is the normal coil spring range. The strength, shear modulus, and hardness values are specific to this cold reduction 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.php](http://www.lookpolymers.com/polymer_Elgiloy-Co-Cr-Ni-Alloy-Wire-47-Cold-Reduction-Coil-Spring-Range.php)

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

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	373	373	Estimated from Rockwell C
Hardness, Rockwell A	71	71	Estimated from Rockwell C
Hardness, Rockwell C	41	41	
Hardness, Vickers	393	393	Estimated from Rockwell C
Tensile Strength, Ultimate	1790 MPa	260000 psi	
Tensile Strength, Yield	1450 MPa	210000 psi	
Modulus of Elasticity	169 GPa	24500 ksi	Calculated
Poissons Ratio	0.226	0.226	
Shear Modulus	69.0 GPa	10000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	15.17 µm/m-°C	8.428 µin/in-°F	
	@Temperature 0.000 - 500 °C	@Temperature 32.0 - 932 °F	
Specific Heat Capacity	0.430 J/g-°C	0.103 BTU/lb-°F	
Thermal Conductivity	12.5 W/m-K	86.8 BTU-in/hr-ft <sup>2</sup> -°F	

Thermal Properties	Metric	English	Comments
<b>Component Elements Properties</b>	<b>Metric</b>	<b>English</b>	<b>Comments</b>
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 %	
<b>Electrical Properties</b>	<b>Metric</b>	<b>English</b>	<b>Comments</b>
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.

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