

# Phynox (Elgiloy)

## Materials Data Sheet

### Description

This Cobalt-Chromium-Nickel alloy gives a combination of high strength, ductility and good mechanical properties and is age hardenable. Phynox also has excellent fatigue life, corrosion resistance in numerous environments and is non-magnetic.

**Uses:** Use where a high resistance to corrosion and / or low relaxation at temperatures up to 380°C (715°F) are required. This alloy is used in medical devices, dental products, surgical implants and orthopedics.

### Chemical Composition

Element	%
C	0.15
Mn	2.50
Si	1.20
P	0.015
S	0.015
Cr	21.00
Ni	16.00
Co	41.00
Mo	8.00
Be	0.10
Fe	Remaining

<b>Density</b>	8.3g/cm <sup>3</sup>	0.300 lb/in <sup>3</sup>
<b>Melting Point</b>	1427°C	2600°F
<b>Coefficient of Expansion</b>	12.5 µm/m °C (20 - 100°C)	7.0 x 10 <sup>-6</sup> in/in °F (70 - 212°F)
<b>Modulus of Rigidity</b>	77 kN/mm <sup>2</sup>	11168 ksi
<b>Modulus of Elasticity</b>	203.4 kN/mm <sup>2</sup>	29501 ksi

### Heat Treatment

Condition	Type	Temperature	
		°C	°F
Spring Temper	Age Harden	520	970

### Properties

Condition	Approximate Tensile Strength		Approximate Operating Temperature	
	N/mm <sup>2</sup>	ksi	°C	°F
Spring Temper and Aged	1900-2200	276-319	-185 to +450	-300 to +840

\*Information compiled using Alloy Wire International as source.

The information and data in this product data sheet are accurate to the best of our knowledge and belief, but are intended for general information only.