

## NILO<sup>®</sup> 36

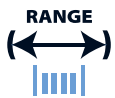
### Key Features

- Low expansion alloy. Maintains near constant dimensions over the range of normal atmospheric temperatures
- Low coefficient of expansion from cryogenic temperatures to about +500 °C (+930 °F)
- Retains strength and toughness at cryogenic temperatures

### IMPORTANT

We will manufacture to your required mechanical properties.

## key advantages to you, *our customer*



0.025mm to 21mm  
(.001" to .827")



Order 3m to 3t  
(10 ft to 6000 Lbs)



Delivery:  
within 3 weeks



Wire to your spec



E.M.S available



Technical support

### NILO<sup>®</sup> 36 available in:-

- Round wire
- Bars or lengths
- Flat wire
- Shaped wire
- Rope/Strand

### Packaging

- Coils
- Spools
- Bars or lengths



\*Trade name of Special Metals Group of Companies.

Chemical Composition			Specifications	Key Features	Typical Applications
Element	Min %	Max %	-  <b>Designations</b> W.Nr. 1.3912 UNS K93600 UNS K93601 AWS 090	Low expansion alloy. Maintains near constant dimensions over the range of normal atmospheric temperatures  Low coefficient of expansion from cryogenic temperatures to about +500 °C (+930 °F)  Retains strength and toughness at cryogenic temperatures	Standards of length (measurement reference)  Thermostat rods  Laser components  Tanks and piping for the storage and transportation of liquefied gasses
Ni	35.00	38.00			
Fe	BAL				
C	-	0.10			
Mn	-	0.60			
P	-	0.025			
S	-	0.03			
Si	-	0.35			
Cr	-	0.50			
Mo	-	0.50			
Co	-	1.00			

<b>Density</b>	8.11 g/cm <sup>3</sup>	0.293 lb/in <sup>3</sup>
<b>Melting Point</b>	1430 °C	2610 °F
<b>Inflection Point</b>	220 °C	430 °F
<b>Thermal conductivity</b>	10.0 W/m* °C	69.3 btu*in/ft <sup>2</sup> *h °F
<b>Coefficient of Expansion</b>	1.5 µm/m °C (20 – 100 °C) 2.6 µm/m °C (20 – 200 °C)	0.83 x 10 <sup>-6</sup> in/in °F (70 – 212 °F) 1.4 x 10 <sup>-6</sup> in/in °F (70 – 392 °F)

**Heat Treatment of Finished Parts**

*The Nilo alloys are usually supplied and used in the annealed condition (residual cold work distorts the coefficients of thermal expansion).  
Annealing times may vary due to section thickness.*

	Type	Temperature		Time (Hr)	Cooling
		°C	°F		
For highest dimensional stability	Anneal	850 – 1000	1560 – 1830	0.5	Air or water
		830	1525	0.5	Water
		300	570	1	Water
		100	212	48	Air

**Properties**

Condition	Approx. tensile strength		Approx. operating temperature	
	N/mm <sup>2</sup>	ksi	°C	°F
Annealed	450 – 550	65 – 80	up to +500	up to +930
Hard Drawn	700 – 900	102 – 131	up to +500	up to +930

The above tensile strength ranges are typical. If you require different please ask.