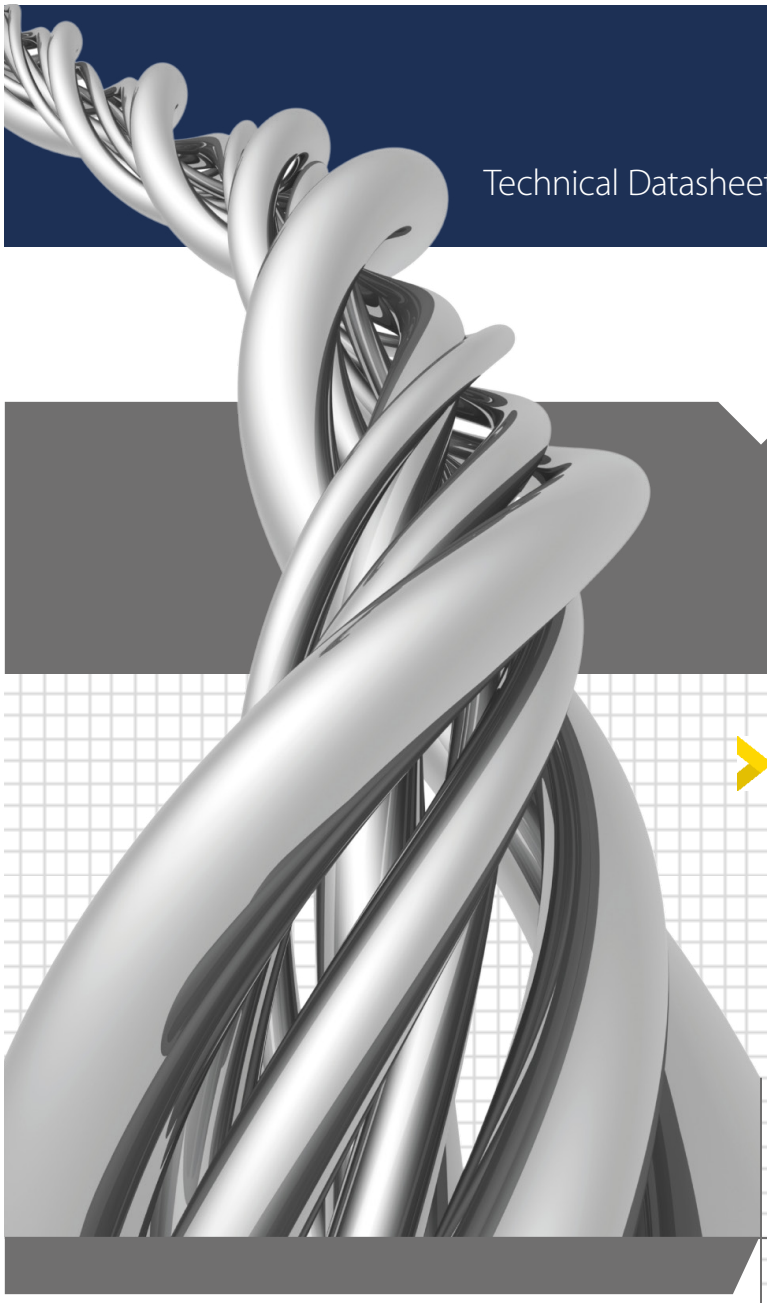

NILO® 36

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*

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

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

DELIVERY 3 WEEKS
Delivery:
within 3 weeks

Wire to your spec

E.M.S available

HOW CAN I HELP?
Technical support

NILO® 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.

Technical Datasheet **AWS 090 Rev.2**

NILO® 36

alloy wire international

Chemical Composition			Specifications	Key Features	Typical Applications
Element	Min %	Max %	-	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		**Designations**		
C	-	0.10	W.Nr. 1.3912 UNS K93600 UNS K93601 AWS 090		
Mn	-	0.60			
P	-	0.025			
S	-	0.03			
Si	-	0.35			
Cr	-	0.50			
Mo	-	0.50			
Co	-	1.00			

Density	8.11 g/cm³	0.293 lb/in³
Melting Point	1430 °C	2610 °F
Inflection Point	220 °C	430 °F
Thermal conductivity	10.0 W/m• °C	69.3 btu•in/ft²•h °F
Coefficient of Expansion	1.5 µm/m °C (20 – 100 °C) 2.6 µm/m °C (20 – 200 °C)	0.83 x 10^{-6} in/in °F (70 – 212 °F) 1.4 x 10^{-6} 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
		830 300 100	1525 570 212	0.5 1 48	Water Water Air

Properties				
Condition	**Approx. tensile strength**		**Approx. operating temperature**	
	N/mm²	**ksi**	**°C**	**°F**
Annealed	<600	<87	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.

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