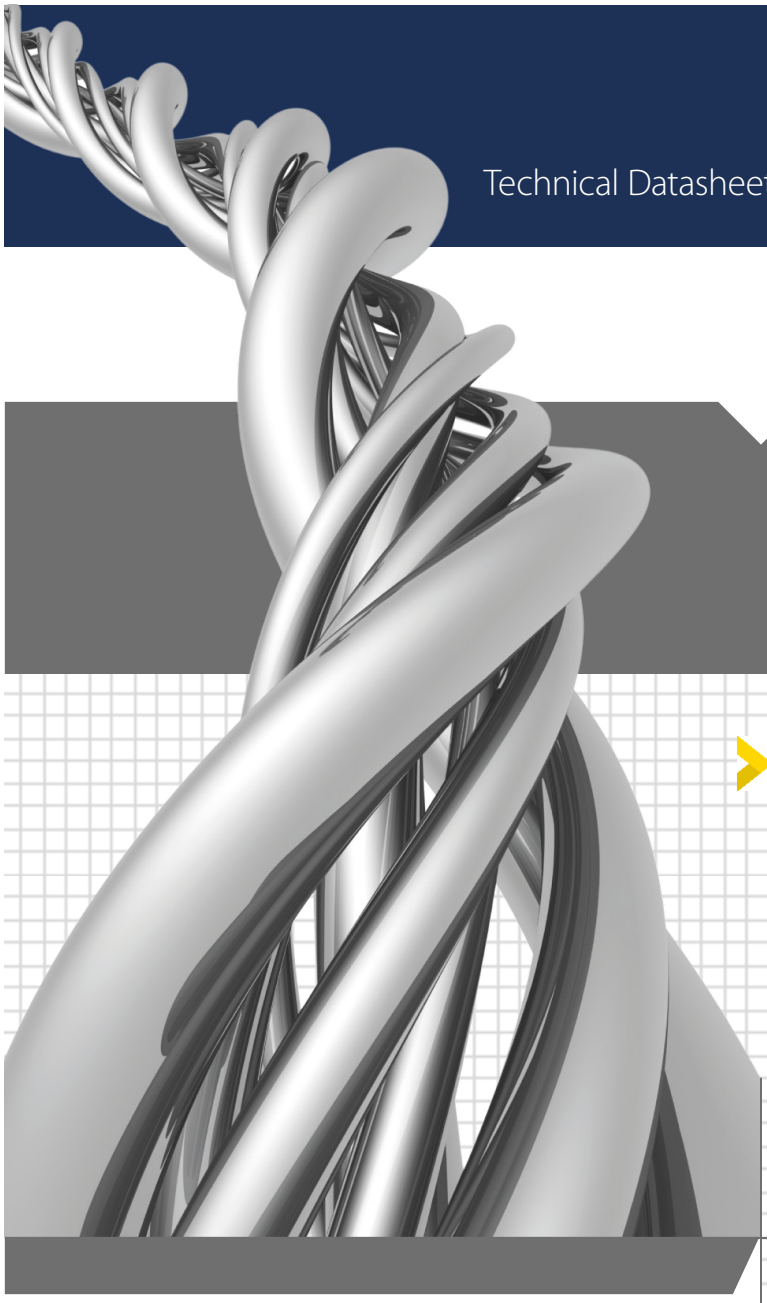

NILO® K

Key Features

Controlled coefficient of expansion (which decreases with rising temperature to the inflection point)

Matches the expansion rate of borosilicate glasses and alumina ceramics

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® K 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 094 Rev.2**

NILO® K

alloy wire international

Chemical Composition		
Element	Min %	Max %
Fe	53.00 nominal	
Ni	29.00 nominal	
Co	17.00 nominal	
Mn	-	0.50
Si	-	0.20
C	-	0.04
Al	-	0.10
Mg	-	0.10
Zr	-	0.10
Ti	-	0.10
Cu	-	0.20
Cr	-	0.20
Mo	-	0.20

Specifications

ASTM F15

Designations

W.Nr. 1.3981
UNS K94610
AWS 094

Key Features

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Typical Applications

Glass to metal seals in applications requiring high reliability or resistance to thermal shock, ie. high power transmitting valves

Density	8.16 g/cm^3	0.295 lb/in^3
Melting Point	1450 °C	2640 °F
Inflection Point	450 °C	840 °F
Thermal Conductivity	16.7 W/m• °C	116 btu•in/ft^2•h °F
Coefficient of Expansion	6.0 µm/m °C (20 – 100 °C) 4.6 – 5.2 µm/m °C (20 – 400 °C)	3.3 x 10^{-6} in/in °F (70 – 212 °F) 2.6 – 2.9 x 10^{-6} in/in °F (70 – 752 °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. Oxidizing time and temperature to be selected depending on required oxide thickness.

	Type	Temperature		Time (Hr)	Cooling
		°C	°F		
	Anneal	850 – 1000	1560 – 1830	0.5	Air or water
To prepare for glass to metal sealing	Decarburization	900 – 1050	1650 – 1920	1	Air or water
If a metal oxide interface is required *(time and temperature depend on required oxide thickness)*	Oxidize	600 – 1000	1110 – 1830	1	Air

Properties				
Condition	**Approx. tensile strength**		**Approx. operating temperature**	
	N/mm²	**ksi**	**°C**	**°F**
Annealed	<600	<87	up to +400	up to +750
Hard Drawn	700 – 900	102 – 131	up to +400	up to +750

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

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