

Sandvik Bioline F562 / Sandvik Bioline F562LTi (Wire)

Sandvik Bioline F562 is a non-magnetic nickel-cobalt base alloy that has a unique combination of properties: ultra high strength, toughness, ductility and excellent corrosion resistance. Sandvik Bioline F562LTi is the low titanium version of Sandvik Bioline F562.

The alloy is cold worked to obtain strength level of 1790-2205 MPa (260 to 320 ksi). It can also be aged in the work hardened condition to achieve higher strengths. A leading material for permanent implants, Sandvik Bioline F562 is vacuum melted in multiple steps for extreme cleanliness.

Sandvik Bioline F562 is resistant to corrosion in hydrogen sulfide, salt water and other chloride solutions as well as mineral acids (nitric, hydrochloric, sulfuric).

In addition, it has exceptional resistance to crevice and stress corrosion cracking having been operationally proven in sea water and hostile environments.

For medical use, Sandvik delivers F562 with the highest surface finish (Medical class) in order to maximize the fatigue strength, which is critical in implant devices such as lead wires for pacemakers and heart valve supports.

STANDARDS

- ASTM F562-02
- ISO 5832/6

Product standards
AMS 2269

CHEMICAL COMPOSITION (NOMINAL) %

Ni	Co	Cr	Mo
35	35	20	10

FORMS OF SUPPLY

Sandvik Bioline F562 can be supplied in round or rectangular wire form in the following size ranges:

- Round wire: 0.018 to 1.422 mm (0.0007 to 0.056 in.)
- Flat wire: 0.0191 mm (0.00075 in.) minimum thickness ; 10:1 maximum aspect ratio ; 3.0 mm (0.118 in.) maximum width.

MECHANICAL PROPERTIES

Typical mechanical properties at 20°C/68°F

Condition	Tensile strength, R _m		Proof strength, R _{p0.2}		Elongation A	Hardness
	MPa	ksi	MPa	ksi	%	typical
	min	min	min	min	in 4D	
Annealed	896	130	379	55	65	90 HRB
Cold worked	1379	200	1310	190	2	43 HRC
Aged 593°C - 4 hours	2034	295	1965	285	2	51 HRC

PHYSICAL PROPERTIES

TYPICAL DATA

Property		
Density (20°C)	8.4 g/cm ³	0.30 lb/in ³
Modulus of elasticity, (20°C)		
annealed	232 10 ³ MPa	33.8 X 10 ³ ksi
cold worked and aged	234 10 ³ MPa	34.0 X 10 ³ ksi
Shear modulus, (20°C)		
annealed	83.8 10 ³ MPa	12.09 X 10 ³ ksi
cold worked and aged	80.9 10 ³ MPa	11.74 X 10 ³ ksi
Thermal conductivity (20°C)	11.2 W /(m°C)	78 Btu/(ft h°F)
Electrical resistivity*	1033 μohm mm	40.67 μohm in.
Thermal expansion, x10 ⁶ (-100-121°C)	11.2 per °C	6.2 per °F

*Note: electrical resistivity lower for cold worked material

APPLICATIONS

Sandvik Bioline F562 are used by customers for applications such as stents, pacemaker leads and ICD leads.

DISCLAIMER:

Recommendations are for guidance only, and the suitability of a material for a specific application can be confirmed only when we know the actual service conditions. Continuous development may necessitate changes in technical data without notice. This datasheet is only valid for Sandvik materials.