Alleima® F562/F562LTi medical wire

Wire

Datasheet

Alleima® 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. Alleima® F562LTi is the low titanium version of Alleima® 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, Alleima® F562 is vacuum melted in multiple steps for extreme cleanliness.

Alleima® 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, Alleima® F562 is delivered 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

Applications

Alleima®F562 is used for applications such as stents, pacemaker leads and ICD leads.

Chemical composition (nominal) %

Ni	Co	Cr	Mo
35	35	20	10

Forms of supply

Alleima® F562 can be supplied in round wire form in the following size ranges:

- 0.018 to 1.422 mm (0.0007 to 0.056 in.)

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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	%	
	min	min	min	min	in 4D	typical
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)		
annealedcold worked and aged	232 10^3 MPa 234 10^3 MPa	33.8 X 10^3 ksi 34.0 X 10^3 ksi
Shear modulus, (20°C)		
annealedcold worked and aged	83.8 10^3 MPa 80.9 10^3 MPa	12.09 X 10^3 ksi 11.74 X 10^3 ksi
Thermal conductivity (20°C)	11.2 W /(m °C)	78 Btu/(ft h°F)
Electrical resistivity*	1033 µΩ mm	40.67 µΩ in.
Thermal expansion, x10^{-6} (-100-121°C)	11.2 per °C	6.2 per °F

*Note: electrical resistivity is lower for cold worked material

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