CO-BASE ALLOYS

Application Segments

Engineering

Available Product Variants

Long Products

Product Description

BÖHLER L035 is a 35cobalt-35nickel-20chromium-10molybdenum alloy (UNS R30035) in the form of bar and wire, used for the manufacture of surgical implants. This alloy depends on combinations of work strengthening and aging to attain a variety of combinations of strength and ductility the choice dependent upon the medical device design and its intended application.
The alloy composition covered by this specification has been successfully employed in human implants. Long-term clinical experience has shown an acceptable level of biological response.
BÖHLER L035 is a nickel-cobalt base multiphase alloy system that has a unique combination of properties - ultra high strength, toughness, ductility and outstanding corrosion resistance. The alloy is able to be work-strengthened and aged to obtain strength levels of 260 to 300 ksi (1793-2086 MPa) in its full strength and stress corrosion cracking resistance (SCC) for harsh environments. BÖHLER L035 alloy resists corrosion in hydrogen sulfide, salt water and other chloride solutions, as well as the mineral acids (nitric, hydrochloric, sulphuric). In addition, it has exceptional resistance to crevice cracking in seawater and other hostile environments.
The unique capabilities of BÖHLER L035 are derived from the alloy's chemistry, premium melting technology, cold-working, and heat treatment. It is a vacuum induction melted (VIM), vacuum arc re-melted (VAR) superalloy.

Process Melting

VIM + VAR

Applications

- Medical
- Medical Instruments & Implants
- Medical Industry
- Mechanical Engineering

Technical data

Material designation	
MP35N	Market grade
2.4999	SEL
R30035	UNS

Standards	
ISO 5832-6	EN ISO
F562	ASTM

Chemical composition (wt. %)

C	Si	Mn	P	S	Cr	Mo	Ni	Co	Ti	B	Fe
max. 0.025	max. 0.15	max. 0.15	max. 0.015	max. 0.010	19.0 to 21.0	9.0 to 10.5	33.0 to 37.0	REM	max. 1.0	max. 0.015	max. 1.0

Refers to ASTM F562.

Delivery condition

Solution Annealed + Quenched	
Tensile Strength (MPa | ksi)	793 to 1,069 | 116 to 156
Yield Strength (MPa | ksi)	241 to 586 | 35 to 85 | Wire hot rolled.

Solution annealed + cold worked	
Tensile Strength (MPa | ksi)	min. 1,000 | 146
Yield Strength (MPa | ksi)	min. 655 | 95 | medium hard - Round bars hot rolled and cold worked.

Solution annealed + cold worked	
Tensile Strength (MPa | ksi)	min. 1,207 | 176
Yield Strength (MPa | ksi)	min. 1,000 | 146 | hard - Round bars hot rolled and cold worked.

Round Bars and Wire Rod (if any)

Diameter*					
mm			inch		
ROLLED					
5.00	-	13.50	0.197	-	0.531

* Diameter 5.00 - 13.50 mm available as Wire Rod.

More information regarding MOQ and tolerances upon request.
Round bars upon request. Availabilty depends on delivery condition.

For additional specifications and other sizes please contact BÖHLER Edelstahl - Special Materials Engineering

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ONE STEP AHEAD.