

Carpenter BioDur™ 316LS Stainless Medical Implant Alloy, 48% Cold Worked

Category : Metal , Ferrous Metal , Stainless Steel , T 300 Series Stainless Steel

Material Notes:

Data provided by Carpenter Technology Corporation. Medical Implant Alloy. Vacuum arc remelted (VAR), low carbon version of Type 316 stainless. The secondary premium melting step (VAR) imparts improved cleanliness. The chemistry modifications are designed to maximize the corrosion resistance of this alloy and provide a ferrite free microstructure. The alloy is nonmagnetic even after severe cold forming operations. BioDur™ is a trademark of Carpenter Technology Corporation.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Carpenter-BioDur-316LS-Stainless-Medical-Implant-Alloy-48-Cold-Worked.php

Physical Properties	Metric	English	Comments
Density	7.95 g/cc	0.287 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	304	304	Estimated from Rockwell C for Brinell test with 3000 kg load, 10 mm ball.
Hardness, Knoop	330	330	Estimated from Rockwell C
Hardness, Rockwell C	32	32	
Hardness, Vickers	318	318	Estimated from Rockwell C
Tensile Strength, Ultimate	1000 MPa	145000 psi	
Tensile Strength, Yield	827 MPa @Strain 0.200 %	120000 psi @Strain 0.200 %	
Elongation at Break	16 %	16 %	
Reduction of Area	69 %	69 %	

Thermal Properties	Metric	English	Comments
CTE, linear	18.5 µm/m-°C @Temperature 0.000 - 649 °C	10.3 µin/in-°F @Temperature 32.0 - 1200 °F	
Specific Heat Capacity	0.500 J/g-°C	0.120 BTU/lb-°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.030 %	<= 0.030 %	
Chromium, Cr	17 - 19 %	17 - 19 %	

Copper, Cu Component Elements Properties	<= 0.50 % Metric	<= 0.50 % English	Comments
Iron, Fe	62 %	62 %	as remainder
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Molybdenum, Mo	2.25 - 3.5 %	2.25 - 3.5 %	
Nickel, Ni	13 - 15 %	13 - 15 %	
Nitrogen, N	<= 0.10 %	<= 0.10 %	
Phosphorous, P	<= 0.025 %	<= 0.025 %	
Silicon, Si	<= 0.75 %	<= 0.75 %	
Sulfur, S	<= 0.010 %	<= 0.010 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000740 ohm-cm	0.0000740 ohm-cm	

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