

## Carpenter BioDur™ 316LS Stainless Medical Implant Alloy, 35% 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-35-Cold-Worked.php](http://www.lookpolymers.com/polymer_Carpenter-BioDur-316LS-Stainless-Medical-Implant-Alloy-35-Cold-Worked.php)

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

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	266	266	Estimated from Rockwell C for Brinell test with 3000 kg load, 10 mm ball.
Hardness, Knoop	289	289	Estimated from Rockwell C
Hardness, Rockwell C	26	26	
Hardness, Vickers	280	280	Estimated from Rockwell C
Tensile Strength, Ultimate	862 MPa	125000 psi	
Tensile Strength, Yield	793 MPa @Strain 0.200 %	115000 psi @Strain 0.200 %	
Elongation at Break	18 %	18 %	
Reduction of Area	72 %	72 %	

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 %	

<b>Copper, Cu</b> Component Elements Properties	<b>&lt;= 0.50 %</b> Metric	<b>&lt;= 0.50 %</b> 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 %	

<b>Electrical Properties</b>	<b>Metric</b>	<b>English</b>	Comments
Electrical Resistivity	0.0000740 ohm-cm	0.0000740 ohm-cm	

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