

HP Alloys Nitronic® 60 Austenitic Stainless, Annealed

Category : Metal , Ferrous Metal , Heat Resisting , Stainless Steel , T S20000 Series Stainless Steel

Material Notes:

Annealed applies to tensile and/or hardness; other properties are typical of this alloy. Nitronic 60 is truly an all purpose metal. This fully austenitic alloy was originally designed as a high temperature alloy for temperatures around 1800°F. The oxidation resistance of Nitronic 60 is similar to Type 309 S.S., and far superior to Type 304S.S. The additions of silicon and manganese have given the alloy a matrix to inhibit wear, galling, and fretting even in the annealed condition. Higher strengths are attainable through cold working the material and is still fully austenitic after severe cold-working. This working does not enhance the anti-galling properties as is normal for carbon steels and some stainless steels. The benefit to the cold or hot work put into the material is added strength and hardness. The chromium and nickel additions give it comparable corrosion to 304 and 316 stainless steels, while having approximately twice the yield strength. The high mechanical strength in annealed parts permits use of reduced cross sections for weight and cost reductions. Data provided by High Performance Alloys, Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_HP-Alloys-Nitronic-60-Austenitic-Stainless-Annealed.php

Physical Properties	Metric	English	Comments
Density	7.62 g/cc	0.275 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	210	210	Estimated from Rockwell B
Hardness, Knoop	245	245	Estimated from Rockwell B
Hardness, Rockwell A	58	58	Estimated from Rockwell B
Hardness, Rockwell B	95	95	
Hardness, Vickers	215	215	Estimated from Rockwell B
Tensile Strength, Ultimate	710 MPa	103000 psi	
Tensile Strength, Yield	414 MPa @Strain 0.200 %	60000 psi @Strain 0.200 %	
Elongation at Break	64 %	64 %	
Reduction of Area	74 %	74 %	
Modulus of Elasticity	179 GPa	26000 ksi	In Tension
Poissons Ratio	0.30	0.30	Calculated
Shear Modulus	69.0 GPa	10000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	15.8 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	8.78 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	
	@Temperature 20.0 - 95.0 $^\circ\text{C}$	@Temperature 68.0 - 203 $^\circ\text{F}$	

Component Elements Properties	Metric	English	Comments
Chromium, Cr	17 %	17 %	
Iron, Fe	62 %	62 %	As remainder
Manganese, Mn	8.0 %	8.0 %	
Nickel, Ni	8.5 %	8.5 %	
Nitrogen, N	0.14 %	0.14 %	
Silicon, Si	4.0 %	4.0 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000130 ohm-cm	0.000130 ohm-cm	

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