

ATI Allegheny Ludlum AL 601™ Nickel-Base Alloy, 1149°C (2100°F) Solution Treated, UNS N06601

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

Allegheny Ludlum's AL 601 alloy is an austenitic nickel-chromium-iron alloy designed for both heat and corrosion resistance. As compared to AL 600 alloy, the AL 601 alloy has, in addition to increased chromium, an aluminum content which together provide outstanding resistance to oxidation. In addition, AL 601 alloy has good resistant to environments containing carbon and sulfur and this alloy resists aqueous corrosion. The AL 601 alloy is used in aerospace applications, for heat and chemical processing equipment, and in power generation, pollution control and heat treating applications. Forming, machining and welding properties are similar to those of stable austenitic stainless steels. Information provided by Allegheny Ludlum

Order this product through the following link:

http://www.lookpolymers.com/polymer_ATI-Allegheny-Ludlum-AL-601-Nickel-Base-Alloy-1149C-2100F-Solution-Treated-UNS-N06601.php

Physical Properties	Metric	English	Comments
Density	8.05 g/cc	0.291 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	70	70	Typical
Tensile Strength, Ultimate	670 MPa	97200 psi	Typical
Tensile Strength, Yield	250 MPa	36300 psi	Typical
Elongation at Break	55 %	55 %	typical in 2"
Reduction of Area	55 %	55 %	Typical
Modulus of Elasticity	205 GPa	29700 ksi	
Charpy Impact	175 J	129 ft-lb	Typical

Thermal Properties	Metric	English	Comments
CTE, linear	11.0 µm/m-°C	6.11 µin/in-°F	
	@Temperature 27.0 °C	@Temperature 80.6 °F	
	14.6 µm/m-°C	8.11 µin/in-°F	
	@Temperature 20.0 - 315 °C	@Temperature 68.0 - 599 °F	
	15.3 µm/m-°C	8.50 µin/in-°F	
	@Temperature 20.0 - 538 °C	@Temperature 68.0 - 1000 °F	

Thermal Properties	18.3 μm/m-°C Metric	10.2 μm/in-°F English	Comments
	@Temperature 20.0 - 1093 °C	@Temperature 68.0 - 1999 °F	
Specific Heat Capacity	0.460 J/g-°C	0.110 BTU/lb-°F	
Maximum Service Temperature, Air	1093 °C	1999 °F	High oxidation resistance due to tenacious oxide film formation.

Component Elements Properties	Metric	English	Comments
Aluminum, Al	1.35 %	1.35 %	
Carbon, C	0.050 %	0.050 %	
Chromium, Cr	23 %	23 %	
Copper, Cu	0.25 %	0.25 %	
Iron, Fe	14.1 %	14.1 %	
Manganese, Mn	0.50 %	0.50 %	
Nickel, Ni	60.5 %	60.5 %	
Silicon, Si	0.25 %	0.25 %	
Sulfur, S	0.0050 %	0.0050 %	

Electrical Properties	Metric	English	Comments
Magnetic Permeability	1.02	1.02	

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