

ATI Allegheny Ludlum AL 201™ Nickel Alloy, UNS N02201

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy , Pure Element

Material Notes:

Ferromagnetic. Allegheny Ludlum AL 201 alloy is wrought commercially pure nickel. This alloy provides highly ductile mechanical properties across a wide temperature range. Either alloy provides corrosion resistance in neutral to moderately reducing environments. In the annealed condition, either alloy possesses the approximate strength of mild steel. As-rolled material is sometimes furnished to provide higher strength levels. Uses include containers and piping in caustic soda and food processing plants. This nickel alloy is readily fabricated by standard fabricating practices. The material are covered by a variety of specification and are assigned maximum allowable stresses in the ASME Boiler and Pressure Vessel Code. This alloy provides high thermal and electrical conductivity in comparison to nickel base alloys, stainless and low alloy steels. AL 201 Alloy is ferromagnetic. Information provided by Allegheny Ludlum

Order this product through the following link:

http://www.lookpolymers.com/polymer_ATI-Allegheny-Ludlum-AL-201-Nickel-Alloy-UNS-N02201.php

Physical Properties	Metric	English	Comments
Density	8.90 g/cc	0.322 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	45	45	Typical Annealed
Tensile Strength, Ultimate	403 MPa	58500 psi	Typical Annealed
Tensile Strength, Yield	103 MPa @Strain 0.200 %	14900 psi @Strain 0.200 %	Typical; Annealed
Elongation at Break	50 %	50 %	typical in 2"; Annealed
Modulus of Elasticity	207 GPa	30000 ksi	
Poissons Ratio	0.31	0.31	
Shear Modulus	81.0 GPa	11700 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	13.3 µm/m-°C	7.39 µin/in-°F	
	@Temperature 27.0 - 93.0 °C	@Temperature 80.6 - 199 °F	
	14.4 µm/m-°C	8.00 µin/in-°F	
	@Temperature 27.0 - 316 °C	@Temperature 80.6 - 601 °F	
Specific Heat Capacity	0.456 J/g-°C	0.109 BTU/lb-°F	
	67.1 W/m-K	466 BTU-in/hr-ft ² -°F	

Thermal Properties	Metric @ Temperature 100 °C	English @ Temperature 212 °F	Comments
Maximum Service Temperature, Air	427 °C	801 °F	Creep is a concern above this temp

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.020 %	<= 0.020 %	
Copper, Cu	0.020 %	0.020 %	
Iron, Fe	0.050 %	0.050 %	
Manganese, Mn	0.020 %	0.020 %	
Nickel, Ni	99.9 %	99.9 %	as balance; includes Co
Silicon, Si	0.050 %	0.050 %	
Sulfur, S	0.0020 %	0.0020 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00000850 ohm-cm	0.00000850 ohm-cm	

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