

ATI Allegheny Ludlum Allcorr® Nickel-Based, Corrosion Resistant Alloy

Category : Metal , Nonferrous Metal , Nickel Alloy

Material Notes:

Characteristics: non-age hardenable; outstanding resistance to general corrosion, pitting corrosion, crevice corrosion, intergranular corrosion, and stress corrosion cracking; high strength; high ductility, good weldability; good hot and cold workability; good machinability

Information provided by Allegheny Ludlum

Order this product through the following link:

http://www.lookpolymers.com/polymer_ATI-Allegheny-Ludlum-Allcorr-Nickel-Based-Corrosion-Resistant-Alloy.php

Physical Properties	Metric	English	Comments
Density	8.327 g/cc	0.3008 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	310 MPa	45000 psi	Annealed
	1010 MPa	146000 psi	40% Cold Worked
	207 MPa	30000 psi	Annealed
	@Temperature 427 °C	@Temperature 801 °F	
	827 MPa	120000 psi	40% Cold Worked
	@Temperature 427 °C	@Temperature 801 °F	
	20 %	20 %	Annealed
	@Temperature 427 °C	@Temperature 801 °F	
Elongation at Break	20 %	20 %	Annealed
	70 %	70 %	40% Cold Worked
	20 %	20 %	Annealed
	@Temperature 427 °C	@Temperature 801 °F	
	79 %	79 %	40% Cold Worked
	@Temperature 427 °C	@Temperature 801 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	12.0 µm/m-°C	6.67 µin/in-°F	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
	13.0 µm/m-°C	7.22 µin/in-°F	
	@Temperature 20.0 - 400 °C	@Temperature 68.0 - 752 °F	
	15.1 µm/m-°C	8.39 µin/in-°F	

Thermal Properties	Metric	English	Comments
	@ Temperature 20.0 - 800 °C	@ Temperature 68.0 - 1470 °F	
Specific Heat Capacity	0.421 J/g-°C	0.101 BTU/lb-°F	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	0.478 J/g-°C	0.114 BTU/lb-°F	
	@Temperature 300 °C	@Temperature 572 °F	
	0.530 J/g-°C	0.127 BTU/lb-°F	
	@Temperature 600 °C	@Temperature 1110 °F	
	0.582 J/g-°C	0.139 BTU/lb-°F	
	@Temperature 1000 °C	@Temperature 1830 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.25 %	0.25 %	
Carbon, C	0.010 %	0.010 %	
Chromium, Cr	30 %	30 %	
Molybdenum, Mo	11 %	11 %	
Nickel, Ni	>= 56.39 %	>= 56.39 %	
Niobium, Nb (Columbium, Cb)	0.10 %	0.10 %	
Titanium, Ti	0.25 %	0.25 %	
Tungsten, W	2.0 %	2.0 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000122 ohm-cm	0.000122 ohm-cm	
	@Temperature 20.0 °C	@Temperature 68.0 °F	

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