ATI Allegheny Ludlum AL 800™ Nickel-Base Alloy, UNS N08800

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

AL 800 alloy is nickel-iron-chromium alloys designed to resist oxidation and carburization at elevated temperatures. The nickel content makes the alloy highly resistant both to chloride stress-corrosion cracking and to embrittlement form precipitation of sigma phase. The general corrosion resistance is excellent. This alloy has been approved as a material of construction under ASME Boiler and Pressure Vessel Code, Section I-Power Boilers, Section III-Nuclear Vessels, and Section VIII-Unfired Pressure Vessels. Uses include heat exchangers, process piping, heat treatment fixtures, furnace parts, and steam.Information provided by Allegheny Ludlum

Order this product through the following link:
http://www.lookpolymers.com/polymer_ATI-Allegheny-Ludlum-AL-800-Nickel-Base-Alloy-UNS-N08800.php

Physical Properties	Metric	English	Comments
Density	8.08 g/cc	0.292 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	70	70	Typical Annealed
Tensile Strength, Ultimate	600 MPa	87000 psi	Typical; Annealed at 1800°F (982°C)
Tensile Strength, Yield	295 MPa @Strain 0.200 %	42800 psi @Strain 0.200 %	Typical; Annealed at 1800°F (982°C)
Elongation at Break	44 %	44 %	in 2"; Typical; Annealed at 1800°F (982°C)

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	0.500 J/g-°C	0.120 BTU/lb-°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.40 %	0.40 %	
Carbon, C	0.020 %	0.020 %	
Chromium, Cr	21 %	21 %	
Copper, Cu	0.30 %	0.30 %	
Iron, Fe	44.5 %	44.5 %	as balance
Manganese, Mn	1.0 %	1.0 %	
Nickel, Ni	32 %	32 %	
Phosphorous, P	0.020 %	0.020 %	

Component Elements Properties	Metric	English	Comments
Silicon, Si	0.35 %	0.35 %	
Sulfur, S	0.010 %	0.010 %	
Titanium, Ti	0.40 %	0.40 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000990 ohm-cm	0.0000990 ohm-cm	
Magnetic Permeability	<= 1.02	<= 1.02	

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