ATI Allegheny Ludlum Stainless Steel Chromium-Nickel-Molybdenum 317LXN™ (UNS S31726)

Category : Metal , Ferrous Metal , Stainless Steel , T 300 Series Stainless Steel

Material Notes:

Allegheny Ludlum's 317LXN™ is molybdenum-bearing austenitic stainless steel with greatly increased resistance to chemical attack as compared to the conventional chromium-nickel austenitic stainless steels such as Type 304. AL 317LXN™ alloy also offers higher creep, stress-to-rupture, and tensile strength at elevated temperatures than conventional stainless steels. The alloy has low carbon to provide resistance to sensitization during welding and other thermal processes. The combination of increased levels of molybdenum and nitrogen enhance resistance to pitting and crevice corrosion especially in process steams containing acids, chlorides and sulfur compounds at elevated temperatures. Nitrogen also serves to increase the strength of this alloy. This alloy is intended for severe service conditions such as flue gas desulfurization (FGD) systems.Information provided by Allegheny Ludlum Corporation.

Order this product through the following link:
http://www.lookpolymers.com/polymer_ATI-Allegheny-Ludlum-Stainless-Steel-Chromium-Nickel-Molybdenum-317LXN-UNS-S31726.php

Physical Properties	Metric	English	Comments
Density	8.00 g/cc	0.289 lb/in³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	>= 550 MPa	>= 79800 psi	ASTM A240
Tensile Strength, Yield	>= 240 MPa	>= 34800 psi	ASTM A240
Elongation at Break	>= 40 %	>= 40 %	ASTM A240
Modulus of Elasticity	200 GPa	29000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	16.5 µm/m-°C @Temperature 25.0 - 100 °C	9.17 µin/in-°F @Temperature 77.0 - 212 °F	
	18.2 µm/m-°C @Temperature 25.0 - 500 °C	10.1 µin/in-°F @Temperature 77.0 - 932 °F	
	19.5 µm/m-°C @Temperature 25.0 - 1000 °C	10.8 µin/in-°F @Temperature 77.0 - 1830 °F	
Specific Heat Capacity	0.460 J/g-°C	0.110 BTU/lb-°F	
Thermal Conductivity	14.6 W/m-K	101 BTU-in/hr-ft²-°F	

Thermal Properties	Metric	English	Comments
Melting Point	1320 - 1400 °C	2410 - 2550 °F	
Solidus	1320 °C	2410 °F	
Liquidus	1400 °C	2550 °F	
Maximum Service Temperature, Air	899 °C	1650 °F	oxidation resistance is excellent and low scaling rate at this temp

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.030 %	<= 0.030 %	
Chromium, Cr	17 - 20 %	17 - 20 %	
Iron, Fe	60 %	60 %	as balance
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Molybdenum, Mo	4.0 - 5.0 %	4.0 - 5.0 %	
Nickel, Ni	13.5 - 17.5 %	13.5 - 17.5 %	
Nitrogen, N	0.10 - 0.20 %	0.10 - 0.20 %	
Phosphorous, P	<= 0.040 %	<= 0.040 %	
Silicon, Si	<= 0.75 %	<= 0.75 %	
Sulfur, S	<= 0.030 %	<= 0.030 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000790 ohm-cm	0.0000790 ohm-cm	
Magnetic Permeability	1.0028	1.0028	fully annealed 0.5" plate; 1.0028 65% cold-worked 0.5" plate

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