

ATI Allegheny Ludlum AL 29-4C® Stainless Steel, UNS S44735

Category : Metal , Ferrous Metal , Stainless Steel

Material Notes:

AL 29-4C alloy is a superferritic stainless steel designed by Allegheny Ludlum for extreme resistance to chloride ion pitting, crevice corrosion and stress corrosion cracking, as well as general corrosion in oxidizing and moderately reducing environments. The alloy was developed in the early 1980s for welded condenser tubing to be used in seawater and brackish water by the power generation industry. It is this extreme resistance to pitting and crevice corrosion that has led to the installation of over 2000 miles of AL-29-4C tubing in power plant condensers and heat exchangers. The superferritic stainless steel AL 29-4C alloy shows excellent resistance to chloride ion pitting, crevice corrosion and stress corrosion cracking. This resistance makes it an ideal choice for battling the corrosive condensate of partially and fully condensing natural gas and propane burning appliances. Its low alloy content, compared to other high-performance alloys, makes it an economical choice as well. Property data below is typical of annealed samples. Information provided by Allegheny Ludlum.

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http://www.lookpolymers.com/polymer_ATI-Allegheny-Ludlum-AL-29-4C-Stainless-Steel-UNS-S44735.php

Physical Properties	Metric	English	Comments
Density	7.67 g/cc	0.277 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	90	90	
Tensile Strength, Ultimate	655 MPa	95000 psi	
Tensile Strength, Yield	520 MPa @Strain 0.200 %	75400 psi @Strain 0.200 %	
Elongation at Break	22 %	22 %	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.020 %	0.020 %	
Chromium, Cr	29 %	29 %	
Iron, Fe	65 %	65 %	as balance
Manganese, Mn	0.50 %	0.50 %	
Molybdenum, Mo	4.0 %	4.0 %	
Nickel, Ni	0.30 %	0.30 %	
Niobium, Nb (Columbium, Cb)	0.60 %	0.60 %	includes Ti
Nitrogen, N	0.020 %	0.020 %	

Phosphorous P Component Elements Properties	0.030 % Metric	0.030 % English	Comments
Silicon, Si	0.35 %	0.35 %	
Sulfur, S	<= 0.010 %	<= 0.010 %	

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