

## ATI Allegheny Ludlum AL 4466™ Ferritic Stainless Steel

Category : Metal , Ferrous Metal , Ferritic , Stainless Steel , T S40000 Series Stainless Steel

### Material Notes:

Low carbon, low nitrogen ferritic stainless steel alloy. Characteristics: outstanding resistance to chloride pitting and crevice corrosion, improved resistance over austenitic stainless steels to chloride stress corrosion cracking. Applications: condenser tubing, feedwater heat tubing, heat exchanger tubing, and high efficiency gas furnace heat exchangers. Information provided by Allegheny Ludlum

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_ATI-Allegheny-Ludlum-AL-4466-Ferritic-Stainless-Steel.php](http://www.lookpolymers.com/polymer_ATI-Allegheny-Ludlum-AL-4466-Ferritic-Stainless-Steel.php)

Physical Properties	Metric	English	Comments
Density	7.73 g/cc	0.279 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	98	98	
Tensile Strength, Ultimate	676 MPa	98000 psi	
Tensile Strength, Yield	586 MPa @Strain 0.200 %	85000 psi @Strain 0.200 %	
Elongation at Break	20 %	20 %	in 2"

Thermal Properties	Metric	English	Comments
CTE, linear	9.80 μm/m-°C @Temperature 20.0 - 150 °C	5.44 μin/in-°F @Temperature 68.0 - 302 °F	
Specific Heat Capacity	0.500 J/g-°C	0.120 BTU/lb-°F	
Thermal Conductivity	18.1 W/m-K @Temperature 100 °C	126 BTU-in/hr-ft <sup>2</sup> -°F @Temperature 212 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.025 %	0.025 %	
Chromium, Cr	27 %	27 %	
Iron, Fe	>= 65.43 %	>= 65.43 %	As Remainder
Manganese, Mn	0.35 %	0.35 %	
Molybdenum, Mo	3.7 %	3.7 %	

Nickel, Ni Component Elements Properties	Metric	English	Comments
Niobium, Nb (Columbium, Cb)	0.40 %	0.40 %	
Nitrogen, N	0.025 %	0.025 %	
Other	0.55 %	0.55 %	
Phosphorous, P	<= 0.025 %	<= 0.025 %	
Silicon, Si	0.45 %	0.45 %	
Sulfur, S	<= 0.0020 %	<= 0.0020 %	
Titanium, Ti	0.15 %	0.15 %	

Descriptive Properties	Value	Comments
Corrosion Rate mils per year	0.4	100% Acetic Acid, Boiling
	1	45% Formic Acid, Boiling
	1.1	10% Sulfuric Acid, Boiling
	1.2	65% Nitric Acid, Boiling
	1.3	10% Oxalic Acid, Boiling
	1.4	1% Hydrochloric Acid, Boiling
	1.8	50% Phosphoric Acid, Boiling
Critical Crevice Corrosion Temperature, °C	45	
Pitting Potential, Volts vs. Sat. Calomel Electrode	0.85	
Stress Corrosion Cracking Resistance (ASTM G30)	Fail	42% MgCl <sub>2</sub>
	Pass	33% LiCl
	Pass	26% NaCl

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