

ATI Allegheny Ludlum AL 468™ Dual Stabilized- Low Titanium Stainless Steel

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

Material Notes:

Characteristics: good corrosion resistance in a wide range of environments, can be used in annealed cold formed or as-welded conditions.

Applications: used in place of Type 304 in an oxidizing when resistance to stress corrosion cracking is needed, use in place of Type 409 at high temperatures, automotive exhaust system components, residential furnace heat exchangers, shell and tube heat exchangers, nuclear applications. Information provided by Allegheny Ludlum

Order this product through the following link:

http://www.lookpolymers.com/polymer_ATI-Allegheny-Ludlum-AL-468-Dual-Stabilized-Low-Titanium-Stainless-Steel.php

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	75	75	
Tensile Strength, Ultimate	461.9 MPa	66990 psi	
	34.5 MPa	5000 psi	
	@Temperature 871 °C	@Temperature 1600 °F	
	89.6 MPa	13000 psi	
	@Temperature 760 °C	@Temperature 1400 °F	
	206.8 MPa	29990 psi	
	@Temperature 648 °C	@Temperature 1200 °F	
	282.7 MPa	41000 psi	
	@Temperature 537 °C	@Temperature 999 °F	
	324.1 MPa	47010 psi	
@Temperature 426 °C	@Temperature 799 °F		
Tensile Strength, Yield	386.1 MPa	56000 psi	
	@Temperature 204 °C	@Temperature 399 °F	
	27.6 MPa	4000 psi	
	@Temperature 871 °C	@Temperature 1600 °F	
	62.1 MPa	9010 psi	
@Temperature 760 °C	@Temperature 1400 °F		
117.2 MPa	17000 psi		
@Temperature 648 °C	@Temperature 1200 °F		
165.5 MPa	24000 psi		

Mechanical Properties	@Temperature 537 °C Metric	@Temperature 999 °F English	Comments
	186.2 MPa	27010 psi	
	@Temperature 426 °C	@Temperature 799 °F	
	220.6 MPa	32000 psi	
	@Temperature 204 °C	@Temperature 399 °F	
	289.6 MPa	42000 psi	
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	32 %	32 %	
	17 %	17 %	
	@Temperature 537 °C	@Temperature 999 °F	
	18 %	18 %	
	@Temperature 648 °C	@Temperature 1200 °F	
	20 %	20 %	
	@Temperature 426 °C	@Temperature 799 °F	
	26 %	26 %	
	@Temperature 204 °C	@Temperature 399 °F	
	30 %	30 %	
	@Temperature 760 °C	@Temperature 1400 °F	
	55 %	55 %	
	@Temperature 871 °C	@Temperature 1600 °F	
	70 %	70 %	
	@Temperature 924 °C	@Temperature 1700 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	10.2 $\mu\text{m}/\text{m}\cdot\text{°C}$	5.67 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
	11.6 $\mu\text{m}/\text{m}\cdot\text{°C}$	6.44 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 500 °C	@Temperature 68.0 - 932 °F	
	13.6 $\mu\text{m}/\text{m}\cdot\text{°C}$	7.56 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 20.0 - 1000 °C	@Temperature 68.0 - 1830 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.030 %	0.030 %	
Carbon, C	0.0090 %	0.0090 %	
Chromium, Cr	18.25 %	18.25 %	
Iron, Fe	>= 80.15 %	>= 80.15 %	As Remainder
Manganese, Mn	0.40 %	0.40 %	
Nickel, Ni	0.22 %	0.22 %	
Niobium, Nb (Columbium, Cb)	0.25 %	0.25 %	
Nitrogen, N	0.016 %	0.016 %	
Phosphorous, P	0.024 %	0.024 %	
Silicon, Si	0.55 %	0.55 %	
Sulfur, S	0.0010 %	0.0010 %	
Titanium, Ti	0.10 %	0.10 %	

Descriptive Properties	Value	Comments
Corrosion Rate mils per year	324	10% Ferric Chloride, RT (ASTM G-48)
Corrosion Rate mils per year (base metal)	0.12	20% Acetic, Boiling
	0.48	20% Phosphoric, Boiling
	0.6	20% Phosphoric, Boiling
	114 (ASTM A262, Practice C)	65% Nitric, Boiling
	76.8	45% Formic Acid, Boiling
	82.2 (ASTM A262, Practice B)	Ferric Sulfate, Room Temperature; Sulfuric Acid, Boiling
	OK (ASTM A262 Practice E)	Copper-Copper, Boiling; Sulfate-Sulfuric, Boiling
Corrosion Rate mils per year (weld)	0.12	20% Acetic, Boiling
	366	10% Ferric Chloride, RT (ASTM G-48)
	687.6	45% Formic Acid, Boiling
	85.2 (ASTM A262, Practice B)	Ferric Sulfate, Room Temperature; Sulfuric Acid, Boiling
	90 (ASTM A262, Practice C)	65% Nitric, Boiling

Descriptive Properties	OK (ASTM A262 Practice E) Value	Copper-Copper, Boiling; Sulfate-Sulfuric, Boiling Comments
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Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China