

## ATI Allegheny Ludlum AL 13-8™ H 1025 Precipitation Hardening Alloy

Category : Metal , Ferrous Metal , Martensitic , Stainless Steel , Precipitation Hardening Stainless , T S10000 Series Stainless Steel

### Material Notes:

Characteristics: excellent strength, high hardness, superior toughness, good corrosion resistance, good transverse toughness properties, strength and ductility can be tailored by varying the aging temperature. Applications: large air frame structures, injection molding equipment. Information provided by Allegheny Ludlum Heat treated at 1025°F for 4 hrs

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_ATI-Allegheny-Ludlum-AL-13-8-H-1025-Precipitation-Hardening-Alloy.php](http://www.lookpolymers.com/polymer_ATI-Allegheny-Ludlum-AL-13-8-H-1025-Precipitation-Hardening-Alloy.php)

Physical Properties	Metric	English	Comments
Density	7.76 g/cc	0.280 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	1276 MPa	185100 psi	
Tensile Strength, Yield	1207 MPa @Strain 0.200 %	175100 psi @Strain 0.200 %	
Elongation at Break	11 %	11 %	in 2"
Reduction of Area	45 %	45 %	Short-Transverse
	50 %	50 %	Longitudinal
	50 %	50 %	Transverse
Creep Strength	827 MPa @Temperature 260 °C, Time 36000 sec	120000 psi @Temperature 500 °F, Time 10.0 hour	
Rupture Strength	930 MPa @Temperature 260 °C, Time 36000 sec	135000 psi @Temperature 500 °F, Time 10.0 hour	

Thermal Properties	Metric	English	Comments
CTE, linear	10.6 μm/m-°C @Temperature 93.3 °C	5.89 μin/in-°F @Temperature 200 °F	
Melting Point	1405 - 1470 °C	2561 - 2680 °F	
Solidus	1405 °C	2561 °F	
Liquidus	1470 °C	2680 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.90 - 1.35 %	0.90 - 1.35 %	
Carbon, C	<= 0.050 %	<= 0.050 %	
Chromium, Cr	12.25 - 13.25 %	12.25 - 13.25 %	
Iron, Fe	>= 74.032 %	>= 74.032 %	As Remainder
Manganese, Mn	<= 0.20 %	<= 0.20 %	
Molybdenum, Mo	2.0 - 2.5 %	2.0 - 2.5 %	
Nickel, Ni	7.5 - 8.5 %	7.5 - 8.5 %	
Phosphorous, P	<= 0.010 %	<= 0.010 %	
Silicon, Si	<= 0.10 %	<= 0.10 %	
Sulfur, S	<= 0.0080 %	<= 0.0080 %	

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