

## ATI Allegheny Ludlum Stainless Steel 334 (UNS S33400)

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

### Material Notes:

Allegheny Ludlum Type 334 is a titanium- and aluminum-bearing austenitic stainless steel offering superior elevated temperature scaling resistance compared to the conventional chromium-nickel stainless steels such as Type 304. The oxidation resistance of Type 334 compares favorably with higher alloyed grades up to 1900°F, making it a good candidate alloy for use in emission control systems, and other applications where resistance to elevated temperature degradation is important. Information provided by Allegheny Ludlum Corporation.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_ATI-Allegheny-Ludlum-Stainless-Steel-334-UNS-S33400.php](http://www.lookpolymers.com/polymer_ATI-Allegheny-Ludlum-Stainless-Steel-334-UNS-S33400.php)

Physical Properties	Metric	English	Comments
Density	8.03 g/cc	0.290 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	82	82	
Tensile Strength, Ultimate	572.4 MPa	83020 psi	
	103.4 MPa	15000 psi	1800°F
	@Temperature 982 °C	@Temperature 1800 °F	
Tensile Strength, Yield	469 MPa	68000 psi	1000°F
	@Temperature 538 °C	@Temperature 1000 °F	
	241.4 MPa	35010 psi	
Elongation at Break	62.8 MPa	9110 psi	
	@Temperature 982 °C	@Temperature 1800 °F	
	172.4 MPa	25000 psi	
Modulus of Elasticity	@Temperature 538 °C	@Temperature 1000 °F	
	200 GPa	29000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	17.04 µm/m-°C	9.467 µin/in-°F	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
	17.48 µm/m-°C	9.711 µin/in-°F	

Thermal Properties	Metric	English	Comments
	@ Temperature 20.0 - 200 °C	@ Temperature 68.0 - 392 °F	
	17.66 µm/m-°C	9.811 µin/in-°F	
	@Temperature 20.0 - 250 °C	@Temperature 68.0 - 482 °F	
	18.31 µm/m-°C	10.17 µin/in-°F	
	@Temperature 20.0 - 400 °C	@Temperature 68.0 - 752 °F	
	18.54 µm/m-°C	10.30 µin/in-°F	
	@Temperature 20.0 - 500 °C	@Temperature 68.0 - 932 °F	
	19.22 µm/m-°C	10.68 µin/in-°F	
	@Temperature 20.0 - 700 °C	@Temperature 68.0 - 1290 °F	
Thermal Conductivity	12.9 W/m-K	89.5 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 20.0 - 50.0 °C	@Temperature 68.0 - 122 °F	
Maximum Service Temperature, Air	1038 °C	1900 °F	oxidation resistance is good

Component Elements Properties	Metric	English	Comments
Aluminum, Al	<= 0.40 %	<= 0.40 %	
Carbon, C	<= 0.030 %	<= 0.030 %	
Chromium, Cr	19 - 19.5 %	19 - 19.5 %	
Copper, Cu	<= 0.20 %	<= 0.20 %	
Iron, Fe	60 %	60 %	as balance
Manganese, Mn	<= 1.0 %	<= 1.0 %	
Nickel, Ni	19 - 20 %	19 - 20 %	
Phosphorous, P	<= 0.020 %	<= 0.020 %	
Silicon, Si	<= 0.75 %	<= 0.75 %	
Sulfur, S	<= 0.015 %	<= 0.015 %	
Titanium, Ti	<= 0.40 %	<= 0.40 %	

Electrical Properties	Metric	English	Comments

Electrical Resistivity Electrical Properties	0.0000891 ohm-cm Metric	0.0000891 ohm-cm English	Comments
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