

## AK Steel 321 Austenitic Stainless steel

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

### Material Notes:

AK Steel 321 is a stabilized austenitic stainless steel similar to Type 304 but with a titanium addition. This titanium addition reduces or prevents carbide precipitation during welding and in 427 - 816°C service. It also improves the elevated temperature properties of the alloy. AK Steel 321 provides excellent resistance to oxidation and corrosion and possesses good creep strength. It is used primarily in applications involving continuous and intermittent service temperatures within the carbide precipitation range of 427 - 816°C. Information provided by AK Steel

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_AK-Steel-321-Austenitic-Stainless-steel.php](http://www.lookpolymers.com/polymer_AK-Steel-321-Austenitic-Stainless-steel.php)

Physical Properties	Metric	English	Comments
Density	9.01 g/cc	0.326 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	80	80	
Tensile Strength, Ultimate	621 MPa	90100 psi	
Tensile Strength, Yield	276 MPa @Strain 0.200 %	40000 psi @Strain 0.200 %	
Elongation at Break	45 %	45 %	in 2 inches
Modulus of Elasticity	193 GPa	28000 ksi	tension
Poissons Ratio	0.24	0.24	Calculated
Shear Modulus	78.0 GPa	11300 ksi	torsion

Thermal Properties	Metric	English	Comments
CTE, linear	16.6 µm/m-°C	9.22 µin/in-°F	
	@Temperature 0.000 - 100 °C	@Temperature 32.0 - 212 °F	
Specific Heat Capacity	20.2 µm/m-°C	11.2 µin/in-°F	
	@Temperature <=871 °C	@Temperature <=1600 °F	
Specific Heat Capacity	0.500 J/g-°C	0.120 BTU/lb-°F	
	@Temperature 0.000 - 100 °C	@Temperature 32.0 - 212 °F	
	16.0 W/m-K	111 BTU-in/hr-ft <sup>2</sup> -°F	

Thermal Properties	Metric @ Temperature 100 °C	English @ Temperature 212 °F	Comments
	22.0 W/m-K	153 BTU-in/hr-ft <sup>2</sup> -°F	
	@Temperature 500 °C	@Temperature 932 °F	
Melting Point	1371 - 1399 °C	2500 - 2550 °F	
Solidus	1371 °C	2500 °F	
Liquidus	1399 °C	2550 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.080 %	<= 0.080 %	
Chromium, Cr	17 - 19 %	17 - 19 %	
Iron, Fe	65.295 - 74 %	65.295 - 74 %	As Remainder
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Nickel, Ni	9.0 - 12 %	9.0 - 12 %	
Nitrogen, N	<= 0.10 %	<= 0.10 %	
Phosphorous, P	<= 0.045 %	<= 0.045 %	
Silicon, Si	<= 0.75 %	<= 0.75 %	
Sulfur, S	<= 0.030 %	<= 0.030 %	
Titanium, Ti	<= 0.70 %	<= 0.70 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000720 ohm-cm	0.0000720 ohm-cm	
Magnetic Permeability	<= 1.02	<= 1.02	H = 200 Oersted, Annealed

## Contact Songhan Plastic Technology Co.,Ltd.

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