

AK Steel 316L Austenitic Stainless steel

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

Material Notes:

AK Steel 316L is an extra-low carbon version of AK Steel 316 that minimizes harmful carbide precipitation due to welding. Information provided by AK Steel

Order this product through the following link:

http://www.lookpolymers.com/polymer_AK-Steel-316L-Austenitic-Stainless-steel.php

Physical Properties	Metric	English	Comments
Density	7.99 g/cc	0.289 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	79	79	
Tensile Strength, Ultimate	558 MPa	80900 psi	
Tensile Strength, Yield	290 MPa @Strain 0.200 %	42100 psi @Strain 0.200 %	
Elongation at Break	50 %	50 %	in 2 inches
Modulus of Elasticity	193 GPa	28000 ksi	tension
Poissons Ratio	0.25	0.25	Calculated
Shear Modulus	77.0 GPa	11200 ksi	torsion

Thermal Properties	Metric	English	Comments
CTE, linear	16.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	8.89 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 0.000 - 100 °C	@Temperature 32.0 - 212 °F	
	19.9 $\mu\text{m}/\text{m}\cdot\text{°C}$	11.1 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@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	
Thermal Conductivity	16.2 W/m-K	112 BTU-in/hr-ft ² - °F	
	@Temperature 100 °C	@Temperature 212 °F	
	21.4 W/m-K	149 BTU-in/hr-ft ² - °F	

Thermal Properties	@Temperature 500 °C Metric	@Temperature 932 °F English	Comments
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	<= 0.030 %	<= 0.030 %	
Chromium, Cr	16 - 18 %	16 - 18 %	
Iron, Fe	62.045 - 72 %	62.045 - 72 %	As Remainder
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Molybdenum, Mo	2.0 - 3.0 %	2.0 - 3.0 %	
Nickel, Ni	10 - 14 %	10 - 14 %	
Nitrogen, N	<= 0.010 %	<= 0.010 %	
Phosphorous, P	<= 0.045 %	<= 0.045 %	
Silicon, Si	<= 0.75 %	<= 0.75 %	
Sulfur, S	<= 0.030 %	<= 0.030 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000740 ohm-cm	0.0000740 ohm-cm	
Magnetic Permeability	<= 1.02	<= 1.02	H = 200 Oersted, Annealed

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