

AK Steel 304 Austenitic Stainless steel

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

Material Notes:

AK Steel 304 is a variation of the basic 18-8 grade, Type 302. Lower carbon, in Type 304, minimizes chromium carbide precipitation due to welding and its susceptibility to intergranular corrosion. Information provided by AK Steel

Order this product through the following link:

http://www.lookpolymers.com/polymer_AK-Steel-304-Austenitic-Stainless-steel.php

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

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	82	82	
Tensile Strength, Ultimate	621 MPa	90100 psi	
Tensile Strength, Yield	290 MPa @Strain 0.200 %	42100 psi @Strain 0.200 %	
Elongation at Break	55 %	55 %	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	16.9 $\mu\text{m}/\text{m}\cdot\text{°C}$	9.39 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 0.000 - 100 °C	@Temperature 32.0 - 212 °F	
Specific Heat Capacity	18.7 $\mu\text{m}/\text{m}\cdot\text{°C}$	10.4 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature <=649 °C	@Temperature <=1200 °F	
Thermal Conductivity	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	1399 - 1454 °C	2550 - 2649 °F	
Solidus	1399 °C	2550 °F	
Liquidus	1454 °C	2649 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.080 %	<= 0.080 %	
Chromium, Cr	18 - 20 %	18 - 20 %	
Iron, Fe	64.995 - 74 %	64.995 - 74 %	As Remainder
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Nickel, Ni	8.0 - 12 %	8.0 - 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 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000720 ohm-cm	0.0000720 ohm-cm	
	0.000116 ohm-cm	0.000116 ohm-cm	
	@Temperature 659 °C	@Temperature 1220 °F	
Magnetic Permeability	<= 1.02	<= 1.02	H = 200 Oersteds, Annealed

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