

AK Steel 304L Austenitic Stainless steel

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

Material Notes:

AK Steel 304L is an extra low-carbon variation of Type 304, that eliminates carbide precipitation due to welding. AK Steel 304L can be used in the "as-welded" condition, even in severe corrosive conditions. It often eliminates the necessity of annealing weldments except for applications specifying stress relief. It has slightly lower mechanical properties than Type 304. Information provided by AK Steel

Order this product through the following link:

http://www.lookpolymers.com/polymer_AK-Steel-304L-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	80	80	
Tensile Strength, Ultimate	586 MPa	85000 psi	
Tensile Strength, Yield	241 MPa @Strain 0.200 %	35000 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	
	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	
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	

Thermal Properties	21.4 W/m-K Metric	149 BTU-in/hr-ft ² -°F English	Comments
	@Temperature 500 °C	@Temperature 932 °F	
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	<= 0.030 %	<= 0.030 %	
Chromium, Cr	18 - 20 %	18 - 20 %	
Iron, Fe	65.045 - 74 %	65.045 - 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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