

AK Steel 410 Martensitic Stainless steel

Category : Metal , Ferrous Metal , Martensitic , Stainless Steel , T 400 Series Stainless Steel

Material Notes:

AK Steel 410 provides good corrosion resistance plus high strength and hardness. It is magnetic in both annealed and hardened conditions. A wide range of properties can be developed with different heat treatments. Applications requiring moderate corrosion resistance and high mechanical properties are ideal for this alloy. Typical uses include flat springs, knives, kitchen utensils and hand tools. Information provided by AK Steel

Order this product through the following link:

http://www.lookpolymers.com/polymer_AK-Steel-410-Martensitic-Stainless-steel.php

Physical Properties	Metric	English	Comments
Density	7.74 g/cc	0.280 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	80	80	
Tensile Strength, Ultimate	517 MPa	75000 psi	
Tensile Strength, Yield	310 MPa @Strain 0.200 %	45000 psi @Strain 0.200 %	
Elongation at Break	25 %	25 %	in 2 inches
Modulus of Elasticity	200 GPa	29000 ksi	
Fatigue Strength	186 MPa @# of Cycles 1.00e+7 , Temperature 538 °C	27000 psi @# of Cycles 1.00e+7 , Temperature 1000 °F	
	296 MPa @# of Cycles 1.00e+7 , Temperature 454 °C	42900 psi @# of Cycles 1.00e+7 , Temperature 849 °F	
	400 MPa @# of Cycles 1.00e+7 , Temperature 21.0 °C	58000 psi @# of Cycles 1.00e+7 , Temperature 69.8 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	9.90 µm/m-°C @Temperature 0.000 - 100 °C	5.50 µin/in-°F @Temperature 32.0 - 212 °F	
	11.6 µm/m-°C	6.44 µin/in-°F	

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	0.460 J/g-°C	0.110 BTU/lb-°F	
	@Temperature 0.000 - 100 °C	@Temperature 32.0 - 212 °F	
Thermal Conductivity	24.9 W/m-K	173 BTU-in/hr-ft²-°F	
	@Temperature 100 °C	@Temperature 212 °F	
	28.7 W/m-K	199 BTU-in/hr-ft²-°F	
	@Temperature 500 °C	@Temperature 932 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.15 %	<= 0.15 %	
Chromium, Cr	11.5 - 13.5 %	11.5 - 13.5 %	
Iron, Fe	>= 84.28 %	>= 84.28 %	As Remainder
Manganese, Mn	<= 1.0 %	<= 1.0 %	
Phosphorous, P	<= 0.040 %	<= 0.040 %	
Silicon, Si	<= 1.0 %	<= 1.0 %	
Sulfur, S	<= 0.030 %	<= 0.030 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000570 ohm-cm	0.0000570 ohm-cm	

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