

AK Steel 420 Martensitic Stainless steel

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

Material Notes:

AK Steel 420 provides corrosion resistance similar to Type 410 martensitic stainless steel plus increased strength and hardness. It is magnetic in both the annealed and hardened conditions. Maximum corrosion resistance is attained only in the fully hardened of fully hardened and stress relieved condition. It is never used in the annealed condition. Typical uses include cutlery, surgical and dental instruments, scissors, tapes and straight edges. The alloy is not normally used at temperatures exceeding 800°F due to rapid softening and loss of corrosion resistance. Information provided by AK Steel

Order this product through the following link:

http://www.lookpolymers.com/polymer_AK-Steel-420-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	88	88	Annealed
Hardness, Rockwell C	55	55	Hardened and Stress Relieved
Tensile Strength, Ultimate	586 MPa	85000 psi	Annealed
	1586 MPa	230000 psi	Hardened and Stress Relieved
Tensile Strength, Yield	276 MPa	40000 psi	Annealed
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	1344 MPa	194900 psi	Hardened and Stress Relieved
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Break	8.0 %	8.0 %	in 2 inches, Hardened and Stress Relieved
	25 %	25 %	in 2 inches, Annealed
Modulus of Elasticity	200 GPa	29000 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	10.2 µm/m-°C	5.67 µin/in-°F	
	@Temperature 0.000 - 100 °C	@Temperature 32.0 - 212 °F	
CTE, linear	12.1 µm/m-°C	6.72 µin/in-°F	
	@Temperature <=649 °C	@Temperature <=1200 °F	

Thermal Properties	Metric $J/g \cdot ^\circ C$	English $TU/lb \cdot ^\circ F$	Comments
Specific Heat Capacity	@Temperature 0.000 - 100 $^\circ C$	@Temperature 32.0 - 212 $^\circ F$	
Thermal Conductivity	24.9 W/m-K	173 BTU-in/hr-ft ² - $^\circ F$	

Component Elements Properties	Metric	English	Comments
Carbon, C	$\geq 0.15 \%$	$\geq 0.15 \%$	
Chromium, Cr	12 - 14 %	12 - 14 %	
Iron, Fe	83.78 - 87.85 %	83.78 - 87.85 %	As Remainder
Manganese, Mn	$\leq 1.0 \%$	$\leq 1.0 \%$	
Phosphorous, P	$\leq 0.040 \%$	$\leq 0.040 \%$	
Silicon, Si	$\leq 1.0 \%$	$\leq 1.0 \%$	
Sulfur, S	$\leq 0.030 \%$	$\leq 0.030 \%$	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000550 ohm-cm	0.0000550 ohm-cm	

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