

## Combined Metals Material Datasheet

<b>Alloy 420 Stainless Steel</b>						UNS: S42000 EN DIN: 1.4021			
<p><b>Description:</b> Type 420 is a martensitic stainless steel that has good corrosion resistance with increased strength and hardness compared to Type 410. Maximum corrosion resistance is attained in the fully hardened condition. The alloy is magnetic in both the annealed and hardened conditions.</p> <p><b>Applications include:</b> Dental and surgical instruments, cutlery, scissors, tapes, plastic molds and dies, steel balls and straight edges</p> <p><b>Industries supplied include:</b> Aerospace, Medical, Oil &amp; Gas, General Manufacturing</p>									
<b>Nominal Composition</b>									
	<b>C</b>	<b>Mn</b>	<b>P</b>	<b>S</b>	<b>Si</b>	<b>Cr</b>	<b>Ni</b>	<b>Mo</b>	<b>Fe</b>
<b>min</b>	0.15	-	-	-	-	12.0	-	-	BAL
<b>max</b>	0.40	1.00	0.040	0.030	1.00	14.0	0.75	0.50	-
<b>Physical Properties</b>									
	At 70°F					At 20°C			
<b>Density</b>	0.28 lb/in <sup>3</sup>					7.74 g/cm <sup>3</sup>			
<b>Modulus of Elasticity (E)</b>	29.0 x 10 <sup>3</sup> ksi					200 GPa			
<b>Coefficient of Expansion</b>	5.7 μin/in-°F (32-212°F)					10.2 μm/m-°C (0-100°C)			
<b>Electrical Resistivity</b>	21.71 μohm-in					55 μohm-cm			
<b>Thermal Conductivity</b>	14.4 Btu-in/ft <sup>2</sup> -hr- °F (212°F)					24.9 W/m-K (100°C)			
<b>Applicable Specifications</b>									
Strip & Sheet	AMS 5506, ASTM A240								
<b>Typical Mechanical Properties Typical Room Temperature Mechanical Properties</b>									
<b>Condition</b>	<b>Tensile Strength (UTS)</b>	<b>0.2% Offset Yield</b>			<b>Elongation in 2" (50.8 mm)</b>		<b>Hardness Rockwell</b>		
Annealed	85 ksi (MPa)	45 ksi (MPa)			25%		88 HRBW		
<b>Typical mechanical properties are based on ASTM A240</b>									
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