

## Combined Metals Material Datasheet

<b>Alloy 321 Stainless Steel</b>							UNS: S32100 EN DIN: 1.4541			
<p><b>Description:</b> Type 321 is a stabilized austenitic stainless steel, similar to type 304, but alloyed with titanium for use in applications involving continuous or intermittent service at 800-1500°F (427-816°C). 321 stainless has excellent resistance to oxidation and intergranular corrosion, while also possessing good creep strength compared to other 300 series stainless steels. The alloy is strengthened only through cold work and can be fabricated, machined, and welded via most conventional processes.</p> <p><b>Applications include:</b> Annealing covers, High-temperature tempering equipment, Diesel &amp; heavy-duty automotive exhaust, Firewalls, Stack liners, Boiler casings, Welded pressure vessels, Aircraft components, Bellows, Oil refinery equipment</p> <p><b>Industries supplied include:</b> Aerospace, Oil &amp; Gas, Chemical Processing, Food Processing, Waste Treatment</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>Ti</b>	<b>N</b>	<b>Fe</b>
<b>min</b>	-	-	-	-	-	17.0	9.0	5*(C+N)	-	BAL
<b>max</b>	.080	2.0	0.045	0.030	0.75	19.0	12.0	0.70	0.10	-
<b>Physical Properties</b>										
	At 70°F					At 20°C				
<b>Density</b>	0.29 lb/in <sup>3</sup>					8.09 g/cm <sup>3</sup>				
<b>Modulus of Elasticity (E)</b>	28.0 x 10 <sup>3</sup> ksi					193 GPa				
<b>Coefficient of Expansion</b>	11.2 μin/in-°F (32-1500°F)					20.2 μm/m-°C (0-871°C)				
<b>Electrical Resistivity</b>	28.4 μohm-in					72 μohm-cm				
<b>Thermal Conductivity</b>	111 Btu-in/ft <sup>2</sup> -hr-°F (212°F)					16.0 W/m-K (100°C)				
<b>Applicable Specifications</b>										
Strip & Sheet	AMS 5510, 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 (586 MPa)	35 ksi (241 MPa)			55%			70 HRBW		
<b>Typical mechanical properties are based on ASTM A240</b>										
For further information combmet.com/contact-us call: (800) 323-0758			Combined Metals of Chicago, LLC One Hawk Drive Hampshire, IL 60140				<a href="http://WWW.COMBMET.COM">WWW.COMBMET.COM</a>			

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