



Specialty Metals – Strip Products

Titanium Grade 21s

UNS R58210

Titanium Grade 21s is a metastable beta titanium alloy that offers substantial strength to weight ratios. It offers the high strength of metastable beta titanium alloys along with improved oxidation resistance, elevated temperature strength, and creep resistance. Ti21s is a good choice for metal matrix compositions because it can be rolled to a foil, is compatible with most fibers, and is thermally stable to 816 °C. Grade 21s is known to be extremely resistant aircraft hydraulic fluid, making it perfect for the aerospace industry.

Applications include Aircraft Engine Components and Ductwork

Industries supplied include: Aerospace

Nominal Composition

	C	O	N	H	Mo	Nb	Al	Si	Fe	Ti	Res. Each	Res. Total
min		0.11			14.0	2.4	2.5	0.15		Bal		
max	0.05	0.17	0.050	0.02	16.0	3.2	3.5	0.25	0.400		0.10	0.40

Physical Properties

	At 70°F	At 20°C
Density	0.178 lb/in ³	4.93 g/cm ³
Modulus of Elasticity (E)	15.2 x 10 ³ ksi	105 GPa
Modulus of Rigidity (G)	5.7 x 10 ³ ksi	39.5 GPa
Coefficient of Expansion	3.93 microinches/in.-°F (70-1000°F)	7.07 μm/m-°C (20-538°C)
Electrical Resistivity	53 μ ohm.in	1.35 μ ohm.cm
Thermal Conductivity	4.4 Btu-in./ft.hr.-°F	4.93 W/m-K

Applicable Specifications

Strip and Foil	ASTM B 265
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Typical Mechanical Properties

Condition	Heat Treatment	Tensile Strength	Suggested Operating Conditions
Annealed	Proprietary Continuous Furnace Anneal	115-140 ksi (793-965 MPa)	0-°F to 1100°F (-18°C to 538°C)
Annealed and Aged	1000 °F (538 °C) for 8 hours	170 ksi min (1172 Mpa min)	0-°F to 1100°F (-18°C to 538°C)

Elgiloy Specialty Metals - Strip Products

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