

Data Sheet Titanex®136 Dental Blanks

» Composition

Standard	ASTM F 136
Element	Ti6Al4V ELI
C	< 0.08 %
Fe	< 0.25 %
N	< 0.05 %
O	< 0.13%
Al	5.5 - 6.5 %
V	3.5 - 4.5 %
H (sheet)	< 0.015 %
H (bar)	< 0.0125 %
H ₂ (billet)	< 0.0100 %
Ti =	Rem

» Physical Data

	Typical
Density g/cm ³ (lb/cu.in)	4.43 (0.159)
Melting Range °C+/-15°C (°F)	1649 (3000)
Specific Heat J/g/°C	0.56
Volume Electrical Resistivity μohm.cm (μohm.in)	170 (67)
Thermal Conductivity W/mK(Btu/ft h°F)	7.2 (50)
*Mean Thermal Exp. Coeff. 0-100°C/°C	8.8 x 10 ⁻⁶
*Mean Thermal Exp. Coeff. 0-300°C/°C	9.2 x 10 ⁻⁶
Beta Transus °C+/-15°C(°F)	999 (1830)

» Mechanical Data

	Ti6Al4V ELI	Typical
Tensile Strength MPa(ksi)	860 (125)	1000 (145)
0.2% Proof Stress MPa(ksi)	795 (115)	910 (132)
Elongation over 2 Inches %	10	18
Reduction in Area %	20	

	Typical
Elastic Modulus GPa(Msi)	114 (17)
Hardness Rockwell C	36
Specified Bend Radius <0.070" x THK	4.5
Specified Bend Radius >0.070In x THK	5
Welded Bend Radius x Thickness	6
Charpy, V-Notch Impact J(ft lbf)	24 (18)

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	Typical
Bar > 75 mm diameter	
Tensile Strength (Annealed 700°C/2h) MPa(ksi)	980(142)
Tensile Strength (900°C/1h/WQ1500°C/8h) MPa(ksi)	1080(157)
0.2% Proof Stress (Annealed 700°C/2h) MPa (ksi)	890(129)
0.2% Proof Stress (900°C/1h/WQ+500°C/8h) MPa (ksi)	970(141)
Elongation On 50Mm (Annealed 700°C/2h)	17 %
Elongation On 50Mm (900°C/1h/WQ+500°C/8h)	16 %
Reduction In Area (Annealed 700°C/2h)	39 %
Reduction in Area (900°C/1h/WQ+500°C/8h)	42 %
Fracture Toughness (Annealed 700°C/2h) MPa.m ^{1/2} (ksi.in ^{1/2})	84 (76)
Fracture Toughness (900°C/1h/WQ+500°C/8h) MPa.m ^{1/2} (ksi.in ^{1/2})	69 (63)

» Fabrication Information

Weldability	Fair
Forging	Rough 982°C(1800°F), finish ó 968°C (1775°F)
Annealing	732°C(1350°F), --4hr, FC to 566°C(1050°F), AC FC not necessary for bars
Solution Treating	forgings
Ageing	904-954°C (1660-1750°F), 5min-2hr, WQ 538°C (1000°F), 4hr, AC

» General Remarques

Effective Values may slightly differ from the given values above. Please ask for the specific Mill Certificate should you need to know the exact values taken from the Ingot.