Ti-6Al-2Sn-4Zr-2Mo

Ti-6Al-2Sn-4Zr-2Mo is near α titanium alloy with high creeping resistance, which is working at 470℃-550℃ and mainly used for manufacture of discs and blades of high pressure compressor of aero-engine. This alloy was successfully developed in 1974 by foreign and was done a lot of basic and applied research and development. At present, Ti-6242 alloy has been successfully used for aero-engine of F414, F119 and TRENT800 aircrafts.

Table 1

Chemical Composition

Ti	Al	Sn	Zr	Mo	Si	Fe
balance	5.50-6.50	1.80-2.20	3.60-4.40	1.80-2.20	0.06-0.10	≤0.10

O	N	C	H	Y	Residual	
					Each	Total
≤0.15	≤0.05	≤0.05	≤0.01	≤0.005	≤0.1	≤0.30

Table 2

Mechanical Properties

	Diameter	Temperature	σb (MPa)	σ0.2 (MPa)	A (%)	Z (%)
AMS 4976H-2012	20<Φ≤350mm	Room temperature	≥896	≥827	≥10	≥25
		482℃	≥621	≥483	≥15	≥30
		Creep	510℃/35h/241Mpa, ≤0.10%			
		KIc	1170 MPa, ≥5h			

Table 3

Ultrasonic Test as per AMS 2628							
Ultrasonic Classification	Near-Surface Hole Depth Inch	Billet Diameter Inches	Calibration FBH Diameter Inch	Calibration Amplitude	Max Acceptable Amplitude	Max Acceptable Signal-to-Noise Ratio	Data Recording
A	0.20	≤10	2/64	80%	70%	2.5	Digital
		>10	3/64	80%	40%(1)	2.5	
					60%(2)	2.5	

Note 1: Depth less than 4 inches

Note 2: Depth 4 inches and over

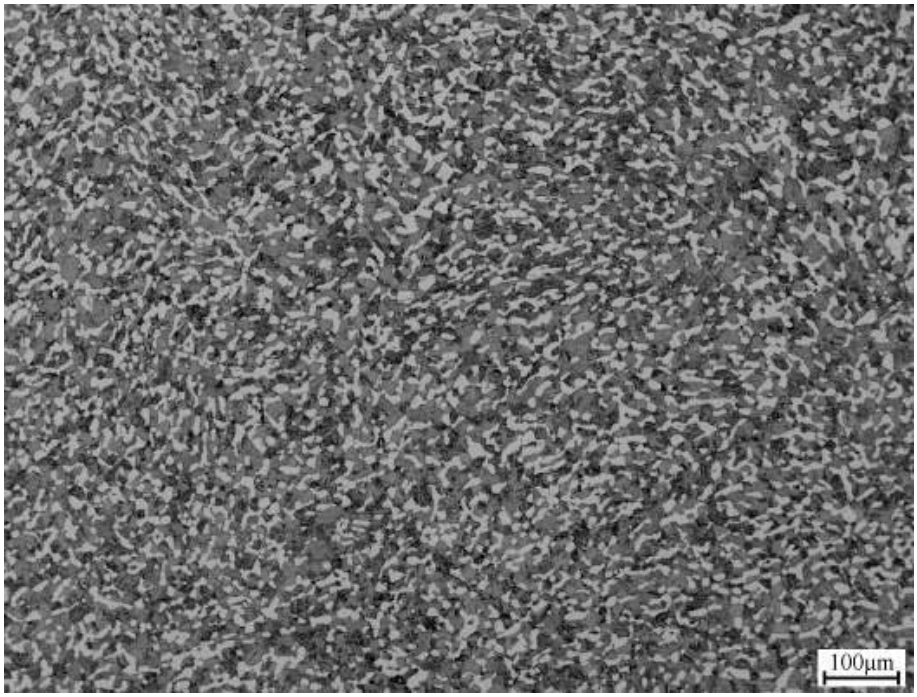

Fig.1 Micrograph 100X