Ti-4.5Al-3V-2Fe-2Mo

Ti-4.5Al-3V-2Fe-2Mo (SP700) is a kind of α+β titanium alloy of rich beta phase through adding beta stable elements of Mo and Fe based on Ti-6Al-4V alloy. Compare to Ti-6Al-4V alloy, SP700 is of better cold and hot process formability, higher strength, plasticity, fracture toughness and fatigue strength. The most prominent is that SP700 titanium alloy can get excellent mechanical properties through choosing suitable heat treatment condition and controlling microstructure.

Table 1

Chemical Composition

Ti	Al	V	Mo	Fe	C	N	H	O	Y	Residual	
										Each	Total
balance	4.00-5.00	2.50-3.50	1.80-2.20	1.70-2.30	≤0.08	≤0.05	≤0.015	≤0.18	≤0.005	≤0.1	≤0.40

Table 2

Mechanical Properties

AMS 4964	Diameter(mm)	Direction	σb (MPa)	σ0.2 (MPa)	A (%)	Z (%)
	≤50.8	L	≥931	≥862	≥10	≥25
		LT			≥10	≥20
		ST			-	-
	>50.8～101.6	L	≥896	≥827	≥10	≥25
		LT			≥10	≥20
		ST			≥10	≥15
	>101.6～152.4	L	≥896	≥827	≥10	≥25
		LT			≥10	≥20
		ST			≥8	≥15

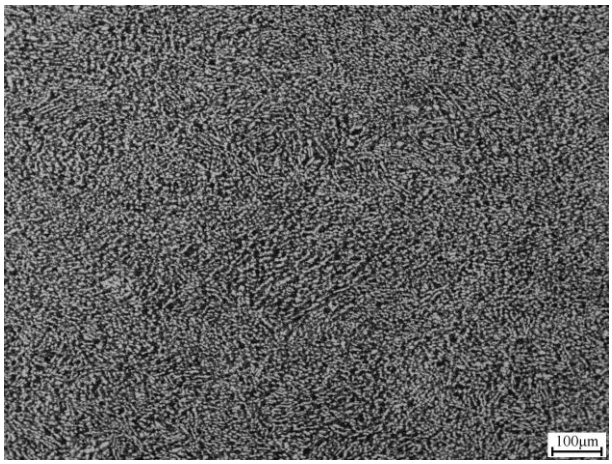

Fig.1 Micrograph 100X

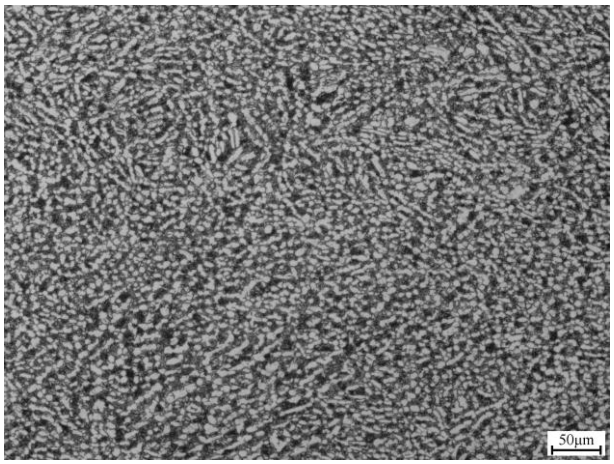

Fig.2 Micrograph 200X

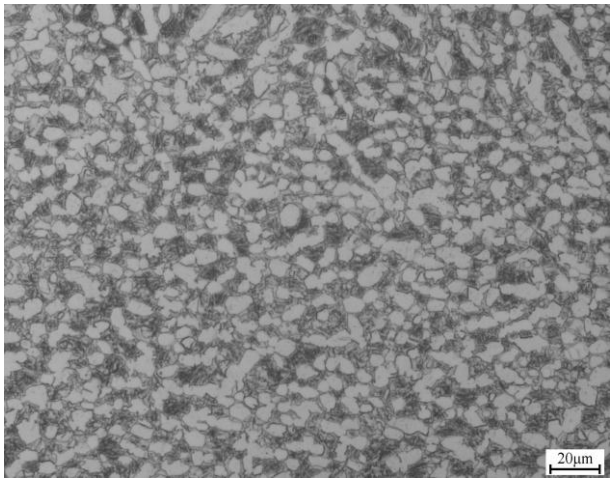

Fig.3 Micrograph 500X