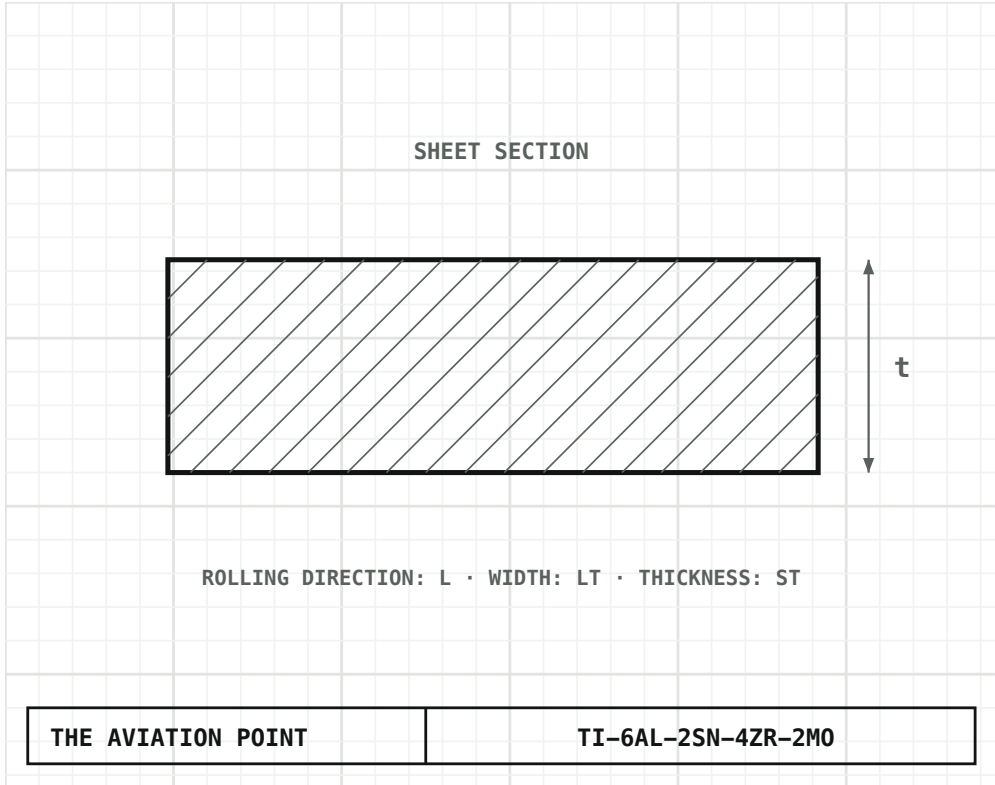
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Ti-6Al-2Sn-4Zr-2Mo — titanium alloy

The titanium for heat: near-alpha, creep resistant and stable to about 1,050 °F.



Schematic

Designation

Item	Value
Designation	Ti-6Al-2Sn-4Zr-2Mo
Class	Titanium
Type	titanium alloy

Properties

Property	Value	Source
Type	Near-alpha titanium with solid-solution strengthening by tin and zirconium; molybdenum improves strength, creep and stability	MIL-HDBK-5J, par. 5.3.3.0
Temperature	Creep resistant and relatively stable to about 1,050 °F	MIL-HDBK-5J, par. 5.3.3.0
Silicon	About 0.08 % silicon improves creep strength	MIL-HDBK-5J, par. 5.3.3.0
Sheet	AMS 4919 (duplex annealed) and AMS-T-9046 Comp. AB-4 (triplex annealed)	MIL-HDBK-5J, Table 5.3.3.0(b)
Forms	Bar, billet, plate, sheet, strip and extrusions	MIL-HDBK-5J, par. 5.3.3.0
Welding	TIG or MIG fusion gives 100 percent joint efficiency, with limited weld-zone ductility	MIL-HDBK-5J, par. 5.3.3.0

Design allowables — Ti-6Al-2Sn-4Zr-2Mo sheet

Property	Duplex annealed, AMS 4919, 0.047–0.093 in, A basis	Triplex annealed, AMS-T-9046 AB-4, to 0.187 in, S basis	Unit
Ftu, L and LT	135	145	ksi
Fty, L and LT	125	135	ksi
Fcy, L and LT	132	—	ksi
E	16.5	16.5	10^3 ksi
G	6.2	6.2	10^3 ksi
Density	0.164	0.164	lb/in³

The table has columns for several thicknesses (to 0.046, 0.047–0.093, 0.094–0.140, 0.141–0.187 in) and A and B bases, with bearing values; only the 0.047–0.093 in A-basis column and the triplex S column are shown. Bearing values are dry-pin values.

Notes

- **Partial table.** Open Table 5.3.3.0(b) for other thicknesses.
- **Engine and nacelle repairs follow the manufacturer's manual.**

SOURCES · FAA AC 43.13-1B CHG 1 · FAA-H-8083-31B, Aviation Maintenance Technician Handbook, Airframe, Volume 1 · MIL-HDBK-5J, Metallic Materials and Elements for Aerospace Vehicle Structures · MMPDS

SCAN · OPEN THIS DATA SHEET
theaviationpoint.com/parts/materials/ti-6al-2sn-4zr-2mo/

Reference data. The aircraft manufacturer's documentation (SRM / IPC) takes precedence.