MATERIAL DATA SHEET

Ti-6Al-2Sn-4Zr-2Mo duplex-annealed sheet, <=2.2 mm (MIL-HDBK-5H)

Historical public-release A-basis duplex-annealed sheet reference through 2.2 mm.

Field	Value
Material ID	milhdbk-ti6242-duplex-annealed-sheet-2-2-mm
Category	Metal
Condition	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm | sheet
Unit system	Common SI
Unit contract	Material properties stored in SI engineering units.
Generated	2026-11-15 23:15

Source and Validity

Field	Value
Quality	Catalog record
Design release allowed	No
Source family	Government materials handbook
Confidence	Reference-grade
License	Open
Source note	Independent transcription from an official public-release U.S. government handbook.
Citation	U.S. Department of Defense, MIL-HDBK-5H, Metallic Materials and Elements for Aerospace Vehicle Structures, 1 December 1998, Table 5.3.3.0(b), PDF page(s) 905 (handbook page(s) 5-45); official DLA document record https://quicksearch.dla.mil/qsDocDetails.aspx?ident_number=53876. The official PDF carries Distribution Statement A: Approved for public release; distribution is unlimited.
Valid temperature	21 ... 21 degC (Room-temperature historical handbook values. Applicability is limited to the exact alloy, temper/condition, product form, size band, material axis, statistical basis, and specification identified by the cited table.)
Valid pressure	Pressure dependence is not represented by these solid-material reference values.
Valid phase / condition	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm
Uncertainty	Values are historical handbook table transcriptions with explicit SI conversion. They are not a substitute for a current material specification, supplier certificate, drawing allowable, or project approval.
Last reviewed	2026-08-02
Reviewer	scripts/import_milhdbk5h_public_metals.py
Review status	Checked

Field	Value
Review scope	Checked official DLA document identity, Distribution Statement A, PDF hash, table/page location, alloy/condition/form/size scope, basis semantics, and SI conversions.
Notes	Historical reference only; design release is explicitly disabled.
License ID	US-DOD-DISTRIBUTION-STATEMENT-A
License URL	https://www.dodcui.mil/Distribution-Statements/
Attribution	U.S. Department of Defense

Material Condition

Field	Value
Condition	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm
Temper	duplex annealed
Heat treatment	duplex anneal per AMS 4919 and handbook section 5.3.3
Product form	sheet
Thickness / diameter range	<=0.0866 in (2.2 mm), within the <=0.093 in table columns
Test direction	L and LT
Processing route	wrought alpha-beta titanium-alloy sheet
Temperature range	21 ... 21 degC
Notes	Room-temperature historical handbook values. Applicability is limited to the exact alloy, temper/condition, product form, size band, material axis, statistical basis, and specification identified by the cited table. Historical reference only; confirm the current procurement specification and material test report.

Properties

Physical

Property	Value	Unit	Type	Applies to
Density	4540	kg/m^3	Historical Nominal	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm; A-basis; S-basis elongation; <=0.093 in table columns

Mechanical

Property	Value	Unit	Type	Applies to
Ultimate tensile strength, L	930.792	MPa	Historical Public Release Table Value	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm; A-basis; S-basis elongation; <=0.093 in table columns; L direction
Tensile yield strength, L	861.845	MPa	Historical Public Release Table Value	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm; A-basis; S-basis elongation; <=0.093 in table columns; L direction
Ultimate tensile strength, LT	930.792	MPa	Historical Public Release Table Value	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm; A-basis; S-basis elongation; <=0.093 in table columns; LT direction
Tensile yield strength, LT	861.845	MPa	Historical Public Release Table Value	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm; A-basis; S-basis elongation; <=0.093 in table columns; LT direction
Compressive yield strength, L	910.108	MPa	Historical Public Release Table Value	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm; A-basis; S-basis elongation; <=0.093 in table columns; L direction
Compressive yield strength, LT	910.108	MPa	Historical Public Release Table Value	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm; A-basis; S-basis elongation; <=0.093 in table columns; LT direction
Elongation, L	8	%	Historical Public Release Table Value	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm; A-basis; S-basis elongation; <=0.093 in table columns; L direction; applies from 0.025 through 0.062 in; 10 percent above 0.062 in
Elongation, LT	8	%	Historical Public Release Table Value	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm; A-basis; S-basis elongation; <=0.093 in table columns; LT direction; applies from 0.025 through 0.062 in; 10 percent above 0.062 in
Young's modulus	113.763	GPa	Historical Nominal	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm; A-basis; S-basis elongation; <=0.093 in table columns

Property	Value	Unit	Type	Applies to
Compression modulus	124.106	GPa	Historical Nominal	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm; A-basis; S-basis elongation; <=0.093 in table columns
Shear modulus	42.747	GPa	Historical Nominal	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm; A-basis; S-basis elongation; <=0.093 in table columns
Poisson's ratio	0.32	-	Historical Nominal	Ti-6Al-2Sn-4Zr-2Mo; duplex annealed; sheet; <=2.2 mm; A-basis; S-basis elongation; <=0.093 in table columns

Engineering note: seed solid-material values are reference values only. Verify against the project material specification or supplier data sheet before release.