MATERIAL DATA SHEET

Ti-6Al-4V solution-treated-and-aged sheet/plate, <=6.3 mm (MIL-HDBK-5H)

Historical public-release S-basis solution-treated-and-aged sheet/plate reference through 6.3 mm.

Field	Value
Material ID	milhdbk-ti64-sta-sheet-plate-6-3-mm
Category	Metal
Condition	Ti-6Al-4V; solution treated and aged; sheet, strip or plate; <=6.3 mm | sheet, strip or plate
Unit system	Common SI
Unit contract	Material properties stored in SI engineering units.
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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 5.4.1.0(b), PDF page(s) 913 (handbook page(s) 5-53); 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-4V; solution treated and aged; sheet, strip or plate; <=6.3 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Notes	Historical reference only; design release is explicitly disabled.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-4V; solution treated and aged; sheet, strip or plate; <=6.3 mm
Temper	solution treated and aged
Heat treatment	solution treated and aged per MIL-T-9046 Composition AB-1
Product form	sheet, strip or plate
Thickness / diameter range	<=0.248 in (6.3 mm), within the <=0.750 in table columns
Test direction	L and LT where a value is available across the complete public scope
Processing route	wrought alpha-beta titanium-alloy sheet or plate
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	4429	kg/m^3	Historical Nominal	Ti-6Al-4V; solution treated and aged; sheet, strip or plate; <=6.3 mm; S-basis lower value across <=0.1875 and 0.1875-0.750 in

Mechanical

Property	Value	Unit	Type	Applies to
Ultimate tensile strength, L	1103.161	MPa	Historical Public Release Table Value	Ti-6Al-4V; solution treated and aged; sheet, strip or plate; <=6.3 mm; S-basis lower value across <=0.1875 and 0.1875-0.750 in; L direction
Tensile yield strength, L	999.74	MPa	Historical Public Release Table Value	Ti-6Al-4V; solution treated and aged; sheet, strip or plate; <=6.3 mm; S-basis lower value across <=0.1875 and 0.1875-0.750 in; L direction
Ultimate tensile strength, LT	1103.161	MPa	Historical Public Release Table Value	Ti-6Al-4V; solution treated and aged; sheet, strip or plate; <=6.3 mm; S-basis lower value across <=0.1875 and 0.1875-0.750 in; LT direction
Tensile yield strength, LT	999.74	MPa	Historical Public Release Table Value	Ti-6Al-4V; solution treated and aged; sheet, strip or plate; <=6.3 mm; S-basis lower value across <=0.1875 and 0.1875-0.750 in; LT direction
Compressive yield strength, L	1034.214	MPa	Historical Public Release Table Value	Ti-6Al-4V; solution treated and aged; sheet, strip or plate; <=6.3 mm; S-basis lower value across <=0.1875 and 0.1875-0.750 in; L direction
Ultimate shear strength	641.212	MPa	Historical Public Release Table Value	Ti-6Al-4V; solution treated and aged; sheet, strip or plate; <=6.3 mm; S-basis lower value across <=0.1875 and 0.1875-0.750 in
Elongation, L	3	%	Historical Public Release Table Value	Ti-6Al-4V; solution treated and aged; sheet, strip or plate; <=6.3 mm; S-basis lower value across <=0.1875 and 0.1875-0.750 in; L direction
Elongation, LT	3	%	Historical Public Release Table Value	Ti-6Al-4V; solution treated and aged; sheet, strip or plate; <=6.3 mm; S-basis lower value across <=0.1875 and 0.1875-0.750 in; LT direction

Property	Value	Unit	Type	Applies to
Young's modulus	110.316	GPa	Historical Nominal	Ti-6Al-4V; solution treated and aged; sheet, strip or plate; <=6.3 mm; S-basis lower value across <=0.1875 and 0.1875-0.750 in
Compression modulus	113.074	GPa	Historical Nominal	Ti-6Al-4V; solution treated and aged; sheet, strip or plate; <=6.3 mm; S-basis lower value across <=0.1875 and 0.1875-0.750 in
Shear modulus	42.747	GPa	Historical Nominal	Ti-6Al-4V; solution treated and aged; sheet, strip or plate; <=6.3 mm; S-basis lower value across <=0.1875 and 0.1875-0.750 in
Poisson's ratio	0.31	-	Historical Nominal	Ti-6Al-4V; solution treated and aged; sheet, strip or plate; <=6.3 mm; S-basis lower value across <=0.1875 and 0.1875-0.750 in

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