MATERIAL DATA SHEET

Titanium 6Al-4V annealed sheet (NASA historical reference)

Historical room-temperature tensile observation for annealed Ti-6Al-4V sheet plus handbook elastic and density references.

Field	Value
Material ID	nasa-ti6al4v-annealed-sheet-reference
Category	Metal
Condition	Ti-6Al-4V annealed 0.060 in sheet; historical room-temperature observation | sheet
Unit system	Common SI
Unit contract	Material properties stored in SI engineering units.
Generated	2026-11-15 23:02

Source and Validity

Field	Value
Quality	Catalog record
Design release allowed	No
Source family	Government materials handbook
Confidence	Reference-grade
License	Open
Source note	Named historical alloy reference transcribed from an official public-use NASA handbook.
Citation	NASA-CR-123775, Materials Data Handbook: Titanium 6Al-4V, 1972, NASA Technical Reports Server record 19720022814; property locations: PDF page 47 (handbook page 39), Chapter 7.2; PDF page 52 (handbook page 45), Table 7.4137; PDF page 88 (handbook page 81), Chapter 9; https://ntrs.nasa.gov/citations/19720022814. NTRS marks the document 'Work of the US Gov. Public Use Permitted.'
Valid temperature	21 ... 21 degC (Tensile row is at 70 degF (21 degC); elastic and density references are near room temperature.)
Valid pressure	Pressure dependence is not represented by these solid reference values.
Valid phase / condition	Ti-6Al-4V annealed 0.060 in sheet; historical room-temperature observation
Uncertainty	Historical reference data transcribed with the stated property semantics and SI conversions. Confirm against the official PDF, a current procurement specification, the actual product form and thickness, and a material test report before engineering use.
Last reviewed	2026-08-01
Reviewer	scripts/import_nasa_public_metals.py
Review status	Checked

Field	Value
Review scope	Checked official NTRS public-use status, report identity and PDF hash, cited tables, minimum/nominal semantics, condition text, and SI conversions. No claim of current specification validity or design release is made.
Notes	Historical reference only; not a current supplier certificate or procurement allowable.
License ID	US-GOV-PUBLIC-USE
License URL	https://ntrs.nasa.gov/citations/19720022814
Attribution	National Aeronautics and Space Administration

Material Condition

Field	Value
Condition	Ti-6Al-4V annealed 0.060 in sheet; historical room-temperature observation
Temper	annealed
Heat treatment	annealed; exact schedule not stated in the cited row
Product form	sheet
Thickness / diameter range	0.060 in (1.52 mm) cited tensile specimen
Test direction	not stated for the cited 21 degC row
Processing route	wrought titanium alloy sheet
Temperature range	21 ... 21 degC
Notes	Historical reference data transcribed with the stated property semantics and SI conversions. Confirm against the official PDF, a current procurement specification, the actual product form and thickness, and a material test report before engineering use.

Properties

Physical

Property	Value	Unit	Type	Applies to
Density	4424	kg/m^3	Nominal	Room temperature.

Mechanical

Property	Value	Unit	Type	Applies to
Ultimate tensile strength	1041.108	MPa	Historical Test Value	Annealed 0.060 in sheet at 21 degC; converted from 151 ksi.
Tensile yield strength	972.161	MPa	Historical Test Value	Annealed 0.060 in sheet at 21 degC; converted from 141 ksi.
Elongation	13	%	Historical Test Value	Annealed 0.060 in sheet at 21 degC, handbook first elongation column.
Young's modulus	110.316	GPa	Historical Design Reference	Handbook design value for all forms; converted from 16.0 x 10^3 ksi.
Shear modulus	42.747	GPa	Historical Design Reference	Handbook design value for all forms; converted from 6.2 x 10^3 ksi.
Poisson's ratio	0.342	-	Nominal	Handbook alloy reference.

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