MATERIAL DATA SHEET

17-4PH H1050 plate, 54 mm, ST (NASA experimental)

Measured H1050 short-transverse tensile properties for one 54 mm 17-4PH plate heat.

Field	Value
Material ID	nasa-tm78257-17-4ph-h1050-plate-54mm-st
Category	Metal
Condition	17-4PH heat 690254; H1050; 5.4 cm plate | plate
Unit system	Common SI
Unit contract	Material properties stored in SI engineering units.
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Source and Validity

Field	Value
Quality	Experimental screening
Design release allowed	No
Source family	Government materials report
Confidence	Reference-grade
License	Open
Source note	Condition-specific measured values from an official public-use NASA technical report.
Citation	T. S. Humphries and E. E. Nelson, Stress Corrosion Cracking Evaluation of Martensitic Precipitation Hardening Stainless Steels, NASA-TM-78257, 1980, Table 2, PDF page 14; NASA NTRS 19800007882, https://ntrs.nasa.gov/citations/19800007882.
Valid temperature	Table 2 does not state a test temperature; no temperature extrapolation is allowed.
Valid pressure	Pressure dependence is not represented.
Valid phase / condition	17-4PH heat 690254; H1050; 5.4 cm plate
Uncertainty	Table values are transcribed as reported rounded MPa and customary-unit values. The record represents one heat and one direction; sample dispersion is not supplied in Table 2.
Last reviewed	2026-08-02
Reviewer	scripts/import_nasa_tm78257_public.py
Review status	Checked
Review scope	Checked NTRS public-use status, report/PDF identity and hash, alloy heat, H1050 condition, plate thickness, short-transverse direction, Table 2 values and measured-data semantics.
Notes	Measured values for one identified 17-4PH heat in 5.4 cm H1050 plate; not a thin-sheet value, population minimum, or procurement specification.
License ID	US-GOV-PUBLIC-USE

Field	Value
License URL	https://ntrs.nasa.gov/citations/19800007882
Attribution	National Aeronautics and Space Administration

Material Condition

Field	Value
Condition	17-4PH heat 690254; H1050; 5.4 cm plate
Temper	H1050
Heat treatment	H1050 as reported; detailed schedule is not restated in Table 2
Product form	plate
Thickness / diameter range	5.4 cm (54 mm)
Test direction	ST (short transverse)
Processing route	wrought plate from identified heat 690254
Temperature range	Table 2 does not state a test temperature; no temperature extrapolation is allowed.
Notes	Measured values for one identified 17-4PH heat in 5.4 cm H1050 plate; not a thin-sheet value, population minimum, or procurement specification.

Properties

Mechanical

Property	Value	Unit	Type	Applies to
Ultimate tensile strength, ST	1082.0	MPa	Experimental Measured Screening	17-4PH heat 690254; H1050; 5.4 cm plate; short-transverse direction
Tensile yield strength, ST	1054.0	MPa	Experimental Measured Screening	17-4PH heat 690254; H1050; 5.4 cm plate; short-transverse direction
Elongation, ST	4.0	%	Experimental Measured Screening	17-4PH heat 690254; H1050; 5.4 cm plate; short-transverse direction

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