MATERIAL DATA SHEET

17-4PH H900 bar (MIL-HDBK-5H)

Historical public-release A-basis reference for 17-4PH H900 bar.

Field	Value
Material ID	milhdbk-17-4ph-h900-bar
Category	Metal
Condition	17-4PH H900; bar; thickness/diameter <203.2 mm | bar
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 2.6.8.0(e), PDF page(s) 247 (handbook page(s) 2-193); 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	17-4PH H900; bar; thickness/diameter <203.2 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
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.

Field	Value
Notes	Historical reference only; design release is explicitly disabled.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	17-4PH H900; bar; thickness/diameter <203.2 mm
Temper	H900
Heat treatment	solution treated and aged to H900; verify AMS 5643 schedule
Product form	bar
Thickness / diameter range	<8 in (203.2 mm); includes the <=114 mm private-catalog scope
Test direction	longitudinal
Processing route	wrought precipitation-hardening stainless bar
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	7806	kg/m^3	Historical Nominal	17-4PH H900; bar; thickness/diameter <203.2 mm; A-basis

Mechanical

Property	Value	Unit	Type	Applies to
Ultimate tensile strength, L	1310.004	MPa	Historical Public Release Table Value	17-4PH H900; bar; thickness/diameter <203.2 mm; A-basis; L direction
Tensile yield strength, L	1172.109	MPa	Historical Public Release Table Value	17-4PH H900; bar; thickness/diameter <203.2 mm; A-basis; L direction
Compressive yield strength, L	1172.109	MPa	Historical Public Release Table Value	17-4PH H900; bar; thickness/diameter <203.2 mm; A-basis; L direction
Ultimate shear strength	848.055	MPa	Historical Public Release Table Value	17-4PH H900; bar; thickness/diameter <203.2 mm; A-basis
Elongation, L	10	%	Historical Public Release Table Value	17-4PH H900; bar; thickness/diameter <203.2 mm; A-basis; L direction
Ramberg-Osgood exponent, tension L	11	-	Historical Public Release Table Value	17-4PH H900; bar; thickness/diameter <203.2 mm; A-basis; L direction; typical room-temperature curve; bar thickness 1.000-4.500 in only
Young's modulus	196.501	GPa	Historical Nominal	17-4PH H900; bar; thickness/diameter <203.2 mm; A-basis
Compression modulus	206.843	GPa	Historical Nominal	17-4PH H900; bar; thickness/diameter <203.2 mm; A-basis
Shear modulus	77.221	GPa	Historical Nominal	17-4PH H900; bar; thickness/diameter <203.2 mm; A-basis
Poisson's ratio	0.27	-	Historical Nominal	17-4PH H900; bar; thickness/diameter <203.2 mm; A-basis

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