MATERIAL DATA SHEET

# PH13-8Mo H1000 bar (MIL-HDBK-5H)

Historical public-release A-basis bar reference for PH13-8Mo H1000.

| Field | Value |
|---|---|
| Material ID | milhdbk-ph13-8mo-h1000-bar |
| Category | Metal |
| Condition | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm \| bar |
| 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 | 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 2.6.5.0(b), PDF page(s) 207 (handbook page(s) 2-153); 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 | PH13-8Mo H1000; 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| Notes | Historical reference only; design release is explicitly disabled.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 | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm |
| Temper | H1000 |
| Heat treatment | solution treated and aged to H1000; verify AMS 5629 schedule |
| Product form | bar |
| Thickness / diameter range | <8 in (203.2 mm); includes the <=50 mm private-catalog scope |
| Test direction | L and transverse values as tabulated |
| Processing route | VIM plus CEVM 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 | 7723 | kg/m^3 | Historical Nominal | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation |

## Mechanical

| Property | Value | Unit | Type | Applies to |
|---|---|---|---|---|
| Ultimate tensile strength, L | 1385.846 | MPa | Historical Public Release Table Value | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation; L direction |
| Tensile yield strength, L | 1310.004 | MPa | Historical Public Release Table Value | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation; L direction |
| Ultimate tensile strength, LT | 1385.846 | MPa | Historical Public Release Table Value | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation; LT direction |
| Tensile yield strength, LT | 1310.004 | MPa | Historical Public Release Table Value | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation; LT direction |
| Compressive yield strength, L | 1378.951 | MPa | Historical Public Release Table Value | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation; L direction |
| Compressive yield strength, LT | 1378.951 | MPa | Historical Public Release Table Value | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation; LT direction |
| Ultimate shear strength | 806.687 | MPa | Historical Public Release Table Value | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation |
| Elongation, L | 10 | % | Historical Public Release Table Value | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation; L direction |
| Elongation, LT | 10 | % | Historical Public Release Table Value | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation; LT direction |

| Property | Value | Unit | Type | Applies to |
|---|---|---|---|---|
| Ramberg-Osgood exponent, tension L | 17 | - | Historical Public Release Table Value | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation; L direction; typical room-temperature curve; bar thickness 0.750-2.000 in only |
| Ramberg-Osgood exponent, compression L | 17 | - | Historical Public Release Table Value | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation; L direction; typical room-temperature curve; bar thickness 0.875-2.000 in only |
| Young's modulus | 195.122 | GPa | Historical Nominal | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation |
| Compression modulus | 202.706 | GPa | Historical Nominal | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation |
| Shear modulus | 75.842 | GPa | Historical Nominal | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation |
| Poisson's ratio | 0.28 | - | Historical Nominal | PH13-8Mo H1000; bar; thickness/diameter <203.2 mm; A-basis strengths; S-basis elongation |

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