

Waspaloy® Bar - AMS 5706 is a precipitation hardening, austenitic nickel-based alloy which is used in elevated temperature applications. This alloy has been used for gas turbine engine parts, which require considerable strength and corrosion resistance at temperatures up to 1600°F (871°C). Major applications of Waspaloy® are for highly stressed parts in the turbine section of jet engines, such as blades, vanes, rings and discs.

Nominal Composition %

| | |
|-----------|------------------|
| Ni | Nickel - 58.00 |
| Cr | Chromium - 19.00 |
| Co | Cobalt - 13.00 |
| Mo | Molybdenum - 4 |
| Ti | Titanium - 3.00 |
| Al | Aluminum - 1.5 |

Percent by weight, maximum unless a range is listed.

Standard Inventory Specifications

- AMS 5706, 5704 (capable of), 5707 (capable of)
- UNS N07001
- PWA LCS
- GE Aircraft Engine (GT193)
- GE Aviation S-SPEC-35 AeDMS S-400
- RR SABRe Edition 2
- DFARS Compliant
- EN 2.4654
- Line marked >.500 inch diameter
- Predominantly produced by VIM-VAR melt method. Solution treated, centerless ground or rough turned

Forms Stocked

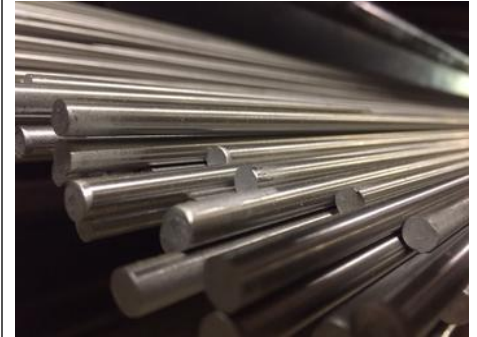
- Bar

Thickness Stocked

- 0.375" - 2.000"

Applications

- Aerospace fasteners
- Compressor discs
- Shafts
- Spacers
- Turbine cases



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Features

- Good strength and corrosion resistance at temperatures up to 1600°F

The technical data provided is for information only and not for design purposes. It is not warranted or guaranteed.

Physical Properties

Non magnetic, maintains high strength, toughness, and excellent rupture properties to 1400°F (760°C). This alloy has good resistance to oxidation and sulfidation to 1600°F (871°C) due to its high chromium content. Waspaloy® Bar - AMS 5706 displays excellent resistance to corrosion by combustion products encountered in gas turbines and aircraft jet engines at temperatures up to 1600°F (871°C). Intergranular oxidation occurs at temperatures above 1600°F (871°C). This alloy has excellent resistance to stress corrosion cracking and adequate hot corrosion resistance.

| Properties | Value |
|------------|---|
| Density | 0.296lb/in ³ (8.19 g/cm ³) |

Mechanical Properties

| Property | Values |
|---------------|---|
| Hardness | Hardness of stock is typically 230 BHN. Supplied in the solution treated condition - 1825-1900°F (996-1038°C) for 1 hour. Waspaloy® Bar - AMS 5706 exhibits best machinability in this condition. After machining, parts are normally stabilized at 1550°F (843°C) for 4 hours, air cooled, followed by precipitation aging at 1400°F (760°C) for 16 hours, air cooled. The hardness of this alloy in the fully heat treated condition ranges from 34 to 44 Rockwell C. |
| Machinability | Rating: 12% of B-1112 Typical stock removal rate: 30-50 surface feet/minute with carbide tooling. |