



ASM Aerospace Specification Metals Inc.



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Waspaloy® Nickel Superalloy, Heat Treatment: 1010°C (1850°F) + Age

**Subcategory:** Metal; Nickel Base; Superalloy

**Key Words:** Allvac, an Allegheny Teledyne Company, UNS N07001; AMS 5704, 5706, 5707, 5708. ASTM B 637

| Component | Wt. % | Component | Wt. % | Component | Wt. % |
|-----------|-------|-----------|-------|-----------|-------|
| Al        | 1.4   | Cr        | 19.5  | Ni        | 57    |
| B         | 0.01  | Fe        | 1     | Ti        | 3     |
| C         | 0.05  | Mo        | 4.3   | Zr        | 0.7   |
| Co        | 13    |           |       |           |       |

#### Material Notes:

Nickel content calculated as remainder. Data provided by Allvac.

**Applications:** Turbine compressor blades and discs, shafts, spacers, fasteners, miscellaneous jet engine hardware; space shuttle turbo pump seals.

Waspaloy is a registered trademark of Pratt & Whitney Aircraft.

| Physical Properties | Metric           | English                  | Comments |
|---------------------|------------------|--------------------------|----------|
| Density             | <u>8.19 g/cc</u> | 0.296 lb/in <sup>3</sup> |          |

#### Mechanical Properties

|                            |                 |            |  |
|----------------------------|-----------------|------------|--|
| Hardness, Brinell          | 351             | 351        | Estimated from Rockwell C value for Brinell test with 3000 kg load/10 mm diameter ball |
| Hardness, Knoop            | 382             | 382        | Estimated from Rockwell C value.   |
| Hardness, Rockwell C       | 38              | 38         |  |
| Hardness, Vickers          | 367             | 367        | Estimated from Rockwell C value.   |
| Tensile Strength, Ultimate | <u>1276 MPa</u> | 185000 psi |  |
| Tensile Strength, Yield    | <u>897 MPa</u>  | 130000 psi | 0.2% Offset  |

|                     |                      |      |
|---------------------|----------------------|------|
| Elongation at Break | <a href="#">23 %</a> | 23 % |
|---------------------|----------------------|------|

|                   |                      |      |
|-------------------|----------------------|------|
| Reduction of Area | <a href="#">25 %</a> | 25 % |
|-------------------|----------------------|------|

Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations can click on the property value to see the original value as well as raw conversions to equivalent units. We advise that you only use the original value or one of its raw conversions in your calculations to minimize rounding error.