

# Waspalloy

## DESCRIPTION

WASPALLOY, also identified as UNS N07001 or AMS 5708, is a high-performance nickel-based superalloy known for its excellent mechanical strength and resistance to oxidation and corrosion at elevated temperatures. Its high nickel content, combined with other elements, imparts outstanding strength and stability.

### TYPICAL PHYSICAL PROPERTIES

Density	lb/in <sup>3</sup>	0.296
Modulus of Elasticity	Ksi	30.9 x 10 <sup>3</sup>
Coefficient of Expansion	µin/in-°F	7.7
Electrical Resistivity	µohm-ft	0.37
Thermal Conductivity	Btu-in./ft <sup>2</sup> hr-°F	125

### Chemical Composition (% by weight)

Elements	Min	Max
C	0.02	0.10
Mn	-	1.00
Si	-	0.75
P	-	0.030
S	-	0.030
Cr	18.0	21.0
Co	12.0	15.0
Mo	3.5	5.0
Fe	-	2.0
Al	1.20	1.60
Ti	2.75	3.25
B	0.003	0.010
Zr	0.02	0.12
Cu	-	0.50

## APPLICATIONS

WASPALLOY is widely used in aerospace for its ability to withstand high temperatures and stresses, making it ideal for turbine blades and other critical engine parts.

### TYPICAL MECHANICAL PROPERTIES

Tensile Strength	Mpa	1100
Yield Strength	Mpa	1076
Elongation	%	27
Rockwell Hardness	C	42
Modulus of Elasticity	GPa	213
Density	g/cm <sup>3</sup>	8.19
Thermal Conductivity	W/m·K	11

### AVERAGE LINEAR COEFFICIENT OF THERMAL EXPANSION µm/m.°C

Coefficient of Thermal Expansion	14.3 (at 20°C)
Thermal Conductivity	19.1 W/m·K (at 20°C)
Specific Heat Capacity	0.52 J/kg·K (at 93°C)
Melting Point	1330-1360°C
Electrical Resistivity	0.37 µΩ·m (at 70°C)

## SPECIFICATIONS

- AMS 5760
- AMS 5708
- AMS 7471
- EMS 55388
- LHM 2417
- PWA 1016
- PWA 1057

## Special Purpose Alloys & Metals From Stock

### Controlled Expansion | Glass Sealing

#### Kovar ASTM F 15 Alloy

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### Alloy 32/42/48/49

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### VIM VAR CORE IRON

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### SUPRA 510 (Ni50FeCr10)

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

### TITANIUM ALLOYS

#### TITANIUM TI-6AL-4V GRADE 5

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### TITANIUM GRADE 2

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### TITANIUM 6-2-4-6

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### TITANIUM BT20

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

### PH ALLOYS

#### 17-7PH

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### 15-5PH

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### 17-4PH

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

### ALUMINIUM HARD ALLOYS

#### 7475 AA7475/7449 AA7449

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### 7075 UNS A97075

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### 7050 AMS 4050

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### 7175 UNS A97075

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### 2014 AMS 4121

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### 2024 UNS A92024

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### 2618 UNS A92618

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### 2017 AMS 4037

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### 2011 UNS A92011

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

### NICKEL BASED ALLOYS

#### WASPALLOY

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### INCONEL X750

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### INCONEL 945

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### INCONEL 945X

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### NIMONIC C263

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### NIMONIC 75

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### INCONEL 909

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### INCONEL 718

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### INCONEL 660

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

### HIGH TEMP ALLOYS

#### HAYNES 188

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### L605

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### MP35N

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### MP159

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### RENE41

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### HAYNES 230

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### ELGILOY

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

#### HAYNES 242

- Forms: Plate, sheets, Round Bar, Rod, Strips, Coil

**JUST-IN-TIME DELIVERY:** All of our standard stock items can be delivery as per commitment. All materials are certified with shipment. For special orders and non-stock materials, contact our sales team for our competitive pricing and delivery.