NICKEL ALLOY

WASPALOY®

SuperiorTube / AMETEK SPECIALTY METAL PRODUCTS

www.superiortube.com

Waspaloy® (UNS N07001)

Waspaloy® is a high-strength, nickel-based superalloy known for its excellent high-temperature mechanical properties and corrosion resistance.

It is widely used in demanding applications that require strength retention and performance at elevated temperatures, such as gas turbine engines, aerospace components, and high-temperature structural applications.

Waspaloy® exhibits impressive mechanical properties, capable of achieving a tensile strength of 1103 MPa (160,000 psi) and a yield strength of 724 MPa (105,000 psi) in the age-hardened condition.

Heat treatment of Waspaloy® typically involves solution annealing at a minimum of 1038°C (1900°F). This treatment optimizes the alloy's mechanical properties and helps eliminate any residual stresses.

Waspaloy® offers excellent resistance to high-temperature oxidation and corrosion. It can withstand aggressive environments, including sulfuric acid, nitric acid, hydrochloric acid, saltwater, and oxidizing/reducing conditions. This corrosion resistance makes it suitable for applications exposed to various corrosive atmospheres.

AVAILABLE TUBE PRODUCT FORMS
STRAIGHT
WELDED & DRAWN

TYPICAL MANUFACTURING SPECIFICATIONS	
AMS 5586	AMS 5828
ASTM B637	
Also individual customer specifications	

TYPICAL APPLICATIONS
TURBINE DISKS
FASTENERS
COMBUSTOR COMPONENTS)

INDUSTRIES PREDOMINANTLY USING THIS GRADE
AEROSPACE
POWER GENERATION
CHEMICAL PROCESSES

Technical Data

MECHANICAL PROPERTIES (ANNEALED)	
Tensile Strength	145,000 psi (1000 MPa) maximum
Yield Strength	85,000 psi (552 MPa) maximum
Elongation	35% minimum (in 2-inch gauge length)
Hardness	HRB 99 maximum

PHYSICAL PROPERTIES	
Density	0.296 lb/in³
Melting Range	2430-2480°F (1330-1360°C)
Thermal Conductivity	79 BTU-in/ft2-h (at 68°F)
Electrical Resistivity	47.2 μΩ-in (at 68°F)
Solution Temperature	Approximately 1825°F (996°C)
Modulus of Elasticity	31 x 10^6 psi

CHEMICAL COMPOSITION (% by weight)		
Element	Min	Max
Ni	Balance	
Cr	18	21
Co	12	15
Mo	3.5	5
Al	1.2	1.6
C	0.02	0.10
Mn	-	0.1
Si	-	0.15
P	-	0.015
S	-	0.015