

WASPALLOY®

A nickel-chromium aged-hardenable superalloy, WASPALLOY® offers excellent high temperature strength and oxidation resistance.

With the addition of aluminium and titanium, WASPALLOY® has excellent strength at temperatures up to 650°C for critical gas turbine engine applications and good oxidation resistance for non-rotating parts in gas turbine applications up to 870°C.

PRODUCT FORMS

PRODUCT FROM	SIZE RANGE FROM	SIZE RANGE TO
WASPALLOY® round bar	19 mm	187 mm
WASPALLOY® sheet & plate	0.3048 mm	19.05 mm
WASPALLOY® welding wire	0.4 mm	1.6 mm

Can't find the size you need? **Please contact us at onlinesales@neonickel.com**

CHEMICAL ANALYSIS

%	CR	NI	MO	CO	AL	TI	B	C	ZR	FE	MN	SI	P	S	CU
Min	18	-	3.50	12	1.20	2.75	0.003	0.02	0.02	-	-	-	-	-	-
Max	21	Balance	5	15	1.60	3.25	0.01	0.10	0.08	2.00	0.10	0.15	0.015	0.015	0.10

APPLICATIONS

- Shafts
- Fasteners
- Compressors and rotor discs
- Spacers, seals, rings and casings
- Airframe assembly and missile systems

ABOUT WASPALOY®

WASPALOY® is an alloy of choice for both rotating and non-rotating parts in aerospace gas turbines due to its high strength and oxidation resistance at elevated temperatures. Welding of WASPALOY® is difficult and best performed on material in the solution annealed condition. Limiting the amperage whilst minimising the fusion zone, combined with rapid cooling from welding, is necessary to minimize aging stresses. After welding, the fabrication should be solution treated, using rapid heating and cooling rates through the aging range. This should be followed by a stabilization and aging treatment.

PROPERTIES

Density:	8.193 g/cm ³
Melting range:	1328-1357°C

MECHANICAL & PHYSICAL PROPERTIES

MECHANICAL & PHYSICAL PROPERTIES	204°C	538°C	649°C	760°C	871°C	982°C
Coefficient of Thermal Expansion $\mu\text{m}/\text{m}\text{C}$	12.6	14	14.6	15.1	16	17.5
Thermal Conductivity /kcal/(hr.m.°C)	10.9	15.5	17.3	19	20.7	-
Modulus of Elasticity/ $\times 10^5$ MPa	2.07	1.86	1.79	1.65	1.59	1.45

TYPICAL RUPTURE STRENGTH, HEAT TREATED, SHEET

TEMPERATURE °C	649°C	704°C	760°C	816°C	871°C
100 hours, ksi	92	75	53	32	18
1,000 hours, ksi	80	57	35	19	10

SPECIFICATIONS

UNS Number:	N07001
W.Nr.Number:	2.4654
Standards:	AMS 5544, 5828, 5708