

# Alloy 617

A nickel-chromium-cobalt-molybdenum grade, Alloy 617 combines exceptional strength and oxidation resistance at high temperature.

The combination of metallurgical stability, strength and oxidation resistance makes Alloy 617 an excellent choice for high temperature applications.

## PRODUCT FORMS

PRODUCT FORM	SIZE RANGE FROM	SIZE RANGE TO
Alloy 617 sheet & plate	0.8128 mm	1.6002 mm
Alloy 617 welding wire	1.14 mm	-

Can't find the size you need? **Please contact us at [onlinesales@neonickel.com](mailto:onlinesales@neonickel.com)**

## CHEMICAL ANALYSIS

%	NI	CR	MO	CU	CO	C	MN	SI	S	FE	TI	AL	B
Min	44.5	20	8	0	10	0.05	0	0	0	0	0	0.8	0
Max	-	24	10	0.5	15	0.15	1	1	0.015	3	0.6	1.5	0.006

## APPLICATIONS

- Combustion cans and ducting for gas turbines
- Transition liners for gas turbines
- Casing for industrial gas turbines
- Industrial furnace components
- Nitric acid catalyst grids

## ABOUT ALLOY 617

Alloy 617 is a nickel-chromium-cobalt-molybdenum alloy with an exceptional combination of high-temperature strength and oxidation resistance. In addition to high temperature applications in the aerospace and power generation markets, the alloy is also used in high temperature petrochemical plants for applications such as nitric acid catalyst grids where metallurgical stability is critical. **For more information on alloy 617, or to receive a quotation please [contact us](#) today!**

**PROPERTIES**

<b>Density:</b>	8.36 g/cm <sup>3</sup>
<b>Melting Range:</b>	1332-1380 °C
<b>Hardness:</b>	172 HRB
<b>Specific Heat Capacity:</b>	419 J/kg.°C
<b>Electrical Resistivity:</b>	1.22 μΩ.m
<b>Poisson's Ratio:</b>	0.3

**MECHANICAL & PHYSICAL PROPERTIES**

MECHANICAL & PHYSICAL PROPERTIES	21.1°C	93.3°C	148.9°C	204.4°C	315.6°C	371.1°C	426.7°C	537.8°C	595°C	648.9°C	760°C	870°C	982°C	1093°C
Ultimate Tensile Strength /MPa	734	706	669	647	628	625	624	595	-	570	-	-	496	-
0.2% Yield Strength /MPa	322	301	276	258	250	248	244	246	-	260	-	-	109	-
Reduction of area %	56	50	-	-	-	-	-	-	-	-	-	-	-	-
Elongation %	62	60	59	59	61	62	63	63	-	60	-	-	72	-
Minimum Creep 0.0001% per hr	-	-	-	-	-	-	-	-	344.73	275.79	90	27.58	12.4	5.51
10,000 hr Rupture Strength	-	-	-	-	-	-	-	-	344.73	275.79	120.65	39.36	15.7	5.51
Coefficient of Thermal Expansion /μm/m°C	-	11.6	11.6	12.6	13.1	13.6	13.6	13.9	-	14	-	-	16.3	-
Thermal Conductivity /kcal/(hr.m. °C)	11.524	12.642	12.642	14.018	15.22	16.598	16.598	17.974	-	19.35	-	-	24.682	-
Modulus of Elasticity / GPa	211	206	206	201	194	188	188	181	-	173	-	-	129	-

**SPECIFICATIONS**

<b>UNS Number:</b>	N06617
<b>W.Nr.Number:</b>	2.4663
<b>Standards:</b>	ASTM B166, B168, B546, B564, AMS 5887, 5888, 5889