

# Alloy B-2®

A nickel-molybdenum grade, Alloy B-2® is extremely resistant to hydrochloric acid in a wide range of temperatures.

Alloy B-2® is a solid-solution strengthened nickel alloy which is normally used in extreme reducing conditions. Alloy B2® also exhibits good resistance to hydrogen chloride, sulfuric acid and phosphoric acid.

## PRODUCT FORMS

PRODUCT FORM	SIZE RANGE FROM	SIZE RANGE TO
Alloy B-2® round bar	12.7 mm	190.5 mm

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## CHEMICAL ANALYSIS

%	NI	MO	CR	SI	C	MN	P	S	FE
Min	Balance	26	0	0	0	0	0	0	0
Max	Balance	30	1	0.1	0.3	0.5	0.04	0.03	2

## APPLICATIONS

- Pressure vessels and reactors
- Agitators and mixers
- Pumps and valves
- Gaskets
- Pipe work and pipe spools
- Heat exchangers

## ABOUT ALLOY B-2®

Alloy B-2® is a nickel-molybdenum alloy with significant resistance to reducing environments, such as hydrogen chloride gas and sulfuric, acetic and phosphoric acids. Hastelloy B-2® provides resistance to pure sulfuric acid and a number of non-oxidizing acids. The alloy should not be used in oxidizing media or where oxidizing contaminants are available in reducing media. Premature failure may occur if alloy B-2® is used where ferric iron, cupric ion and free chlorides are present. With a high nickel content, Hastelloy B-2® is immune to chloride-induced stress corrosion cracking.

## PROPERTIES

<b>Density:</b>	9.22 g/cm <sup>3</sup>
<b>Melting Range:</b>	1332-1382°C
<b>Hardness:</b>	HRB
<b>Specific Heat Capacity:</b>	377 J/kg.°C
<b>Electrical Resistivity:</b>	1.37 μΩ.m
<b>Curie Temperature:</b>	°C

## MECHANICAL & PHYSICAL PROPERTIES

MECHANICAL & PHYSICAL PROPERTIES	21.1°C	93.3°C	204.4°C	315.6°C	426.7°C	537.8°C	648.9°C
Ultimate Tensile Strength /MPa	894	-	849	823	806	-	-
0.2% Yield Strength /MPa	412	-	350	328	310	-	-
Elongation %	61	-	59	60	60	-	-
Coefficient of Thermal Expansion /μm/m°C	-	10.3	10.8	11.2	11.5	11.7	-
Thermal Conductivity /kcal/(hr.m.°C) **	9.55	10.49	11.52	12.56	13.76	14.88	16.08
Modulus of Elasticity / GPa	217	-	-	202	196	189	-

## SPECIFICATIONS

**UNS Number:** UNS N10665

**W.Nr.Number:** 2.4617

**Standards:** ASTM B333, B335, B564, B619, B622, B626, B366, B462 , B775