

Alloy 22

A nickel-chromium-molybdenum grade, Alloy 22 exhibits excellent resistance to both oxidising and reducing environments.

With the addition of tungsten, alloy 22 provides exceptional resistance to pitting and crevice corrosion, in oxidising acid halide environments.

PRODUCT FORMS

PRODUCT FORM	SIZE RANGE FROM	SIZE RANGE TO
Alloy 22 welding wire	0.89 mm	3.175 mm
Alloy 22 sheet & plate	0.96 mm	50.8 mm
Alloy 22 round tubing	6.35 mm	50.8 mm
Alloy 22 round bar	3.175 mm	279.4 mm
Alloy 22 pipe	0.375 in	8 in
Alloy 22 pipe fittings	0.375 in	8 in
Alloy 22 flanges	0.375 in	8 in

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

CHEMICAL ANALYSIS

%	NI	CR	MO	FE	W	CO	C	MN	SI	V	P	S
Min	Balance	20	12.5	2	2.5	-	-	-	-	-	-	-
Max	-	22.5	14.5	6	3.5	2.5	0.015	0.5	0.08	0.35	0.02	0.02

APPLICATIONS

- Reactors and pressure vessels
- Nutsche pressure filters
- Centrifugers and dryers
- Agitators and mixers
- Containment vessels and glove boxes
- Pollution control equipments
- Flue gas desulphurisation (FGD) lined ducts and dampers

ABOUT ALLOY 22

Due to its high nickel content, Alloy 22 is immune to chloride-induced stress corrosion cracking.

The alloy demonstrates outstanding resistance to pitting and crevice corrosion particularly in high chloride containing environments.

Alloy 22 has exceptional resistance to a large range of chemical process environments, including ferric chlorides, chlorine, hot contaminated solutions, acetic acids, seawater and brine solutions. Alloy 22 is the ideal choice when considering alloys for use in extreme corrosive environments.

If you require any additional information on this alloy, then please don't hesitate to [contact us](#).

PROPERTIES

Density:	8.61g/cm ³
Melting Range:	1351-1387°C
Hardness:	89 HRB
Specific Heat Capacity:	381 J/kg.°C
Electrical Resistivity:	1.215μΩ.m
Curie Temperature:	< -196°C
Poisson's Ratio:	0.3

MECHANICAL & PHYSICAL PROPERTIES

MECHANICAL & PHYSICAL PROPERTIES	-196°C	20°C	100°C	200°C	300°C	400°C
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Ultimate Tensile Strength for sheet ≤ 50 mm thick	690-950				
Ultimate Tensile Strength for bar ≤ 90 mm thick	690-951				
0.2% Yield Strength for sheet ≤ 50 mm thick	310	270	225	195	175
0.2% Yield Strength for bar ≤ 90 mm thick	310	290	245	215	195
Elongation, % for sheet ≤ 50 mm thick	45				
Elongation, % for bar ≤ 90 mm thick	45				
Charpy Impact V-notch men value / J	96	120			
Thermal Conductivity	10.1	11.1	13.4	15.5	17.5
Modulus of Elasticity / 10 ⁵ MPA	2.05		1.97		1.85

AQUEOUS CORROSION DATA

MEDIA	COMMON NAME	TEMP. °F (°C)	CORROSION RATE (MPY)
99% C2H4O2	Acetic Acid	Boiling	NIL
10% FeCl3	Ferric Chloride	Boiling	1
88% CH2O2	Formic Acid	Boiling	<1
1% HCl	Hydrochloric Acid	Boiling	3
5% HCl	Hydrochloric Acid	158 (70)	19
10% HCl	Hydrochloric Acid	Boiling	400
5% HCl + 42 g/l Fe2(SO4)3	Mixed Acid	150 (66)	2
5% HCl + 2% HF	Mixed Acid	158 (70)	59
5% HF	Hydrofluoric Acid	158 (70)	14
85% H3PO4	Phosphoric Acid	Boiling	13
44% P2O5	Phosphoric Oxide	240 (116)	21
38% P2O5 + 2000ppm Cl	Mixed Acid	185 (85)	1

38% P2O5 + 0.5% HF	Mixed Acid	185 (85)	7
10% HNO3	Nitric Acid	Boiling	<1
65% HNO3	Nitric Acid	Boiling	134
5% HNO3 + 6% HF	Mixed Acid	140 (60)	67
5% HNO3 + 25% H2SO4 + 4% NaCl	Mixed Acid	Boiling	12
5% HNO3 + 1% HCl	Mixed Acid	Boiling	<1
5% HNO3 + 2.5% HCl	Mixed Acid	Boiling	2
8.8% HNO3 +15.8% HCl	Mixed Acid	126 (52)	4
2% H2SO4	Sulfuric Acid	Boiling	5
10% H2SO4	Sulfuric Acid	Boiling	12
20% H2SO4	Sulfuric Acid	Boiling	33
50% H2SO4	Sulfuric Acid	174 (79)	16
80% H2SO4	Sulfuric Acid	199 (93)	68
10% H2SO4 + 1% HCl	Mixed Acid	194 (90)	94
25% H2SO4 + 200 ppm Cl-	Mixed Acid	158 (70)	11
23% H2SO4 + 1.2% HCl + 1% FeCl3 + 1% CuCl2	ASTM G28B	Boiling	8
50% H2SO4 + 42g/l Fe2(SO4)3	ASTM G28A	Boiling	40

SPECIFICATIONS

UNS Number: N06022

W.Nr.Number: 2.4602

Standards: ASTM B564, B574, B575, B619, B622, B626, B366, B462, B775