

PRODUCT DATASHEET

ALLOY 200

Grade

Alloy 200, UNS N02200, 2.4066 (ASTM B160, BS 3076 NA11, ASTM B564) It is possible for the grade to be dual certified as grade 200/201 compliant.

Type

Wrought commercially pure nickel. Annealed condition. Rod and Bar. Can be supplied hot finished or cold drawn.

Overview

Superior resistance to chloride stress corrosion cracking. High electrical conductivity

Composition	
Element	Weight%
Carbon	0.15 max
Silicon	0.35 max
Manganese	0.35 max
Sulphur	0.01 max
Nickel (plus Cobalt)	99 min
Manganese	0.35 max
Copper	0.25 max

Application

Food production, specialist gas handling (fluorine), storage and transportation of hazardous liquid and others (phenol, sodium hydroxide). Product types include: heat exchangers, tube sheets, piping, shell plate, tanks and tank heads, storage vessels, mixers and valves.

Property	Values
0.2% Yield Strength	15 KSI min (103 MPA min)
Ultimate Tensile Strength	55 KSI min (379 MPA min)
Elongation	35

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ALLOY 400

Grade

Alloy 400, Tradename Monel 400, UNS N04400, 2.4360, 2.4361, ASTM B164, ASTM B564, BS 3076 NA13, QQ-N-281, NACE MRO175/ISO15156

Type

Copper-nickel alloy. Supplied in the annealed condition. Stress relieved option available. Can be supplied hot or cold worked depending on the application.

Property	Values
0.2% Yield Strength	25 KSI min (172 MPA min)
Ultimate Tensile Strength	70 KSI min (483 MPA min)
Elongation	35
Hardness	35 HRC max

Composition

Element	Weight%
Carbon	0.3 max
Silicon	0.5 max
Manganese	2 max
Sulphur	0.024 max
Nickel	63 min
Manganese	2 max
Copper	28 - 34

Grade Selection

High strength and toughness. Excellent corrosion resistance in a wide range of environments, including seawater. Resistant to chloride stress corrosion cracking. Good cryogenic performance.

Application

Used in chemical, marine, aerospace, nuclear and oil and gas industries

Product types: Heat exchangers, pumps and valves, reboiler tubes and control lines, electrical and electronic components

PRODUCT DATASHEET

ALLOY 600

Grade

Alloy 600, UNS N06600, WN 2.4816, BS NA14, ASTM B166, B564

Type

Nickel-base high temperature alloy. Can be supplied cold drawn/annealed, hot rolled/annealed or solution annealed.

Composition

Element	Weight%
Carbon	0.15 max
Silicon	0.5 max
Manganese	1 max
Sulphur	0.015 max
Chromium	14 - 17
Nickel	72 min
Manganese	1 max
Copper	0.5 max

Application

Heat treating muffles and retorts, condensers and evaporation tubes, vacuum furnace fixtures, exhaust liners for aircraft, chemical and food processing, chlorination equipment and parts for titanium dioxide plants.

Mechanical Properties

Typical properties below for annealed condition

Property	Values
0.2% Yield Strength	30 KSI min (207 MPA min)
Ultimate Tensile Strength	80 KSI min (552 MPA min)
Elongation	30
Hardness	195 HBW max

Notes: Virtually immune to chloride ion stress corrosion cracking. Good caustic corrosion resistance. Has proven oxidation and carburisation resistance. Suitable for both cryogenic and high temperature use.

ALLOY 800

Grade

Alloy 800, UNS N08800, WN 1.4876, ASTM B408

Type

Nickel-iron-chromium alloy. Conditions: hot-rolled, annealed. Extruded. Can also be supplied cold drawn.

Overview

Alloy 800, 800H, and 800HT are nickel-iron-chromium alloys with good strength and excellent resistance to oxidation and carburization in high-temperature exposure. These nickel steel alloys are identical except for the higher level of carbon in alloy 800H/HT and the addition of up to 1.20 percent aluminium and titanium in Alloy 800HT. Alloy 800 was the first of these alloys and it was slightly modified into Alloy 800H. The nickel content makes the alloys highly

resistant to both carburisation and to embrittlement from precipitation of sigma phase. 800H+800T the grain size is controlled for improved creep strength properties.

Composition

Element	Weight%
Carbon	0.1 max
Silicon	1 max
Manganese	1.5 max
Sulphur	0.015 max
Chromium	19 - 23
Nickel	30 - 35
Aluminium	0.15 - 0.6
Titanium	0.15 - 0.6
Manganese	1.5 max
Copper	0.75 max

Application

Furnace components, Steam / hydrocarbon reforming components, Petrochemical furnace cracker tubes, Electrical heating elements, Heat exchangers, Power generation, Pressure Vessels, Hydrocarbon plants

Mechanical Properties

Typical Properties

Property	Values
0.2% Yield Strength	22 KSI min (152 MPA min)
Ultimate Tensile Strength	75 KSI min (517 MPA min)

Notes: Three alloys are available - Alloy 800, 800H & 800HT