

Hastelloy B3 / UNS N10675 / DIN 2.4600

Nickel-Molybdenum Super Alloy

Alloy B3 Data Sheet

Introduction

Hastelloy B3 is Nickel-Molybdenum Alloy similar to Alloy B2 in terms of Resistance to Non Oxidizing agents, resistance to stress corrosion & pittings, non formation of grain boundary but was designed with addition quality of Thermal stability which improves welding preparations.

Chemical Composition (Typical)

Element	Limits	
	min	max
Carbon	0.000	0.010
Manganese	0.000	3.000
Silicon	0.000	0.010
Iron	0.000	0.030
Chromium	0.000	1.500
Cobalt	0.000	3.000
Molybdenum	27.000	32.000
Nickel	65.000	--
Tungsten	0.000	3.000
Titanium	0.000	0.200
Aluminum	0.000	0.500
Copper	0.000	0.200

Mechanical Properties (Typical)

Parameter	Value
Yield 0.2 % (Mpa/Nmm ²), Min	420
Tensile (Mpa/Nmm ²), Min	860
Elongation (% in 50MM), Min	50
Reduction Area(%), Min	--
Hardness (HRC), Max	46*

* Max Hardness by ColdWork

Physical Properties

Parameter	Value
Density (Kg/m ³)	9220
Elastic Modulus (Gpa)	216
*Co-eff of Expansion ($\mu\text{m}/\text{m}/^\circ\text{C}$)	10.6
*Thermal Condc. (W/m.K)	11.2
*Electric Resistivity (n Ω .m)	1370

*Note : @20°C

Corrosion Data

Hastelloy B3 is advanced version of Alloy B2 with equal resistance to acetic acid, phosphoric acid, sulphuric acid, formic acid & other non-oxidizing medium. Alloy B3 can withstand all concentration of Hydrochloric acid and temperatures. Alloy B3 has better average corrosion per year readings as compared to alloy B2/SS 316L/Monel 400 etc. However Unlike B2 Alloy B3 should not be used wherein there is a possibility of developing ferric & cupric salts.

Equivalent Grade Designation

Hastelloy B3
Alloy B3
UNS N10675
W. Nr./EN 2.4600
DIN 2.4600

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Available Product Forms

Round, Square, Hexagon ,Flat Bars & Wires
Seamless / Welded Pipes
Seamless / Welded Tubes
Hot & Cold Rolled Plates & Sheets
Forged Bars
Forged Flanges
Butt-Weld Pipe Fittings
Socket-Weld/Forged Pipe Fittings
Machined Components
Ferrule Compression Fittings
Welding Consumables

Common Manufacturing Specifications

ASTM B333, ASTM B335, ASTM B366, ASTM B564, ASTM B619, ASTM B622, ASTM B626, ASME SB333, ASME SB335, ASME SB366, ASME SB564, ASME SB619, ASME SB622, ASME SB626

Alternate to Alloy

Hastelloy B2 can substitute Alloy B3 with compromise in thermal stability & minor inferiority in weldability.

Applications & Industries

Chemical & Pharmaceutical Industries
Vacuum Furnaces
Manufacturing component for reducing environment
Herbicides, Insecticides, Ethylene glycol and Ethyl benzene production units
Valves, Pumps, Fasteners - Nuts, Bolts, Washer, Anchor Rods
Machine Components
Acetic acid production

Excellence Inherent

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