

Nickel 201 Alloy

Heanjia Super Metals Co., Ltd

Nickel 201 alloy is an industrially pure wrought nickel having similar properties as of Nickel 200 alloy though it contains lower concentration of carbon to avoid embrittlement through inter granular carbon at high temperatures.



Properties of Nickel 201 Alloy

1. Excellent resistance to acids and alkalis in the reducing atmospheres.
2. High resistance to caustic alkalis in the molten state
3. Resistance to neutral salts in the highly oxidizing conditions
4. Resistance to intergranular corrosion at temperatures more than 315oC
5. Resistance to dry gases, hydrogen chloride and mineral acids

Chemical composition of Nickel 201

Ni	Mn	C	Si	Fe	Cu	S
99	0.35	0.02	0.35	0.40	0.25	0.01

Physical Properties of Nickel 201

Density	8.9 g/cm cube
Specific Heat	440 J/kg K
Electrical Resistivity	8.5 micro ohms cm
Curie Temperature	358 C
Melting Range	1435-1445 C
Thermal Expansion	(106K) 14.3 (20-300 C)

Hot Processing

Nickel 201 alloy can be hot processed to provide any shape. The processing temperature varies from 1200oF to 2250oF and it should be handled carefully because the processing temperature is the significant factor to receive hot malleability.

Cold Processing

Nickel 201 alloy can be cold processed by following the common methods but as nickel alloys have more hardness than steel so more strength is needed to conduct any operation. Nickel 201 alloy is used in the applications that are conducted at temperatures more than 600oF. With nominal base stiffness and work processing rate, it is suitable for cold forging.

Elevated temperature mechanical properties of Annealed Nickel 201 alloy

Temp, oF	Tensile Strength, Psi	Yield Strength, Psi	Elongation %	Reduction of Area, %
Room	58500	15000	50	73
200	56100	15400	45	74
400	54000	14800	44	72
600	52500	15300	42	72
800	41200	1300	58	80
1000	33100	12100	60	84
1200	22200	10200	74	90

Applications of Nickel 201

1. Production and maintenance of bases such as sodium hydroxide above 300oC
2. Manufacturing viscose rayon and soap
3. Vinyl chloride monomer production
4. Hydrocarbon based reactors

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