



N155/ N-155 High temperature strength nickel alloy steel material

Nickel-based N155 alloy has a long history, back to 1950, of high strength at temperatures up to 1500 F and is capable of sustaining moderate loading at temperatures of 2000 F. It has good oxidation resistance at high temperature and also possesses good corrosion resistance to sulfuric acid (at room temperature) and to nitric acid. High temperature strength derives directly from the chemical composition of the alloy and is not dependent upon age hardening.

Application: Oxidation resistance nickel alloy N-155 used in Industrial furnace structural parts and fixtures. High temperature bolts and gas turbine combustion chambers, exhaust manifolds, and turbine blades. N-155 alloy is used in numerous aircraft applications such as tail cones and tailpipes, exhaust manifolds, combustion chambers, afterburners, turbine blades and buckets, and bolts.

Forming by cold working is preferred and the high strength N155 nickel alloy has good ductility. It does work harden and may require a solution heat treatment to restore ductility during cold forming.

Typical Mechanical Properties for N-155 nickel alloy (Tensile Properties)

Test Temperature		Tensile Strength		Yield Strength 0.2% Offset		% Elongation in 2"	% Reduction of Area
F	°C	ksi	MPa	ksi	MPa		
Room	Room	118	314	59	407	40	50
1000	538	93	641	44	303	37	48
1200	649	80	552	42	290	35	47
1400	760	60	414	38	262	35	42
1600	871	38	262	26	179	37	42
1800	982	19	131	18	124	38	50
2000	1093	10	69	--	--	45	60

Typical Mechanical Properties for N155 nickel alloy (Stress Rupture Properties)

Test Temperature		Stress for Rupture in					
F	°C	10 Hours		100 Hours		1000 Hours	
		ksi	MPa	ksi	MPa	ksi	MPa
1200	649	65	448	52	359	38	262
1350	732	38	262	30	207	23	159
1500	816	26	179	18	124	14	97



SHANGHAI KATALOR ENTERPRISES CO., LTD.

Tel:0086-21-61182423 Website:www.katalor.com

1650	899	18	124	10	69	7	48
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Chemical composition for N-155 nickel alloy

Element	Min	Max
Carbon	0.08	0.16
Manganese	1.00	2.00
Silicon	--	1.00
Sulfur	--	0.03
Chromium	20.0	22.5
Nickel	19.0	21.0
Copper	--	0.50
Tungsten	2.00	3.00
Iron	Balance	
Cobalt	18.5	21.0
Columbium*	0.75	1.25
Nitrogen	0.10	0.20
Molybdenum	2.50	3.50
Phosphorus	--	0.04

Nickel-based N155 / N-155 alloy Specifications:

Round bar steel: dia 1mm to 2000mm

Square-shape steel: 50mm to 600mm

Plate steel thickness: 0.1mm to 800mm

Width: 10mm to 1500mm

Length: We can supply any length based on the customer's requirement.

Forging: Shafts with flanks/pipes/tubes/slugs/donuts/cubes/other shapes

Tubing: OD: ϕ 6-219 mm, with wall thickness ranging from 1-35 mm.

Finished goods condition: hot forging/hot rolling + annealing/normalizing + tempering/ quenching + tempering

Surface conditions: scaled (hot working finish)/ground/rough machining/ fine machining

Furnaces for metallurgical processing: electrode arc + LF/VD/VOD/ESR/Vacuum consumable electrode.

Ultrasonic inspection: 100% ultrasonic inspection for any imperfections

ShangHai Katalor have a high quality logistics team who make sure the fast delivery time and shipment. Anyway, if you want to find high strength N155 nickel alloy

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please contact us. We will give you the N155 competitive price, N-155 alloy good quality and best service from us.

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