

This page is mainly introduced the NICKEL 201 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of NICKEL 201, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

Datasheet for Steel Grades Superalloys NICKEL 201

NICKEL 201 Standard Number:		
ITEM	Standard Number	Descriptions
1	UNS N02201	Pipe, tube, sheet, strip, plate, round bar, flat bar, forging stock, hexagon and wire.
2	ASME Code Case 2249	Pipe, tube, sheet, strip, plate, round bar, flat bar, forging stock, hexagon and wire.
3	BS 3072 - 3074 (NA12)	Pipe, tube, sheet, strip, plate, round bar, flat bar, forging stock, hexagon and wire.
4	ASTM B 160 - B 163, B 366, B 725, B 730, B 751, B 775, B 829	Pipe, tube, sheet, strip, plate, round bar, flat bar, forging stock, hexagon and wire.
5	DIN 17740, 17750 - 17754	Pipe, tube, sheet, strip, plate, round bar, flat bar, forging stock, hexagon and wire.
6	ASME SB-160 - SB-163, SB-366, SB-725, SB-730, SB-751, SB-775, SB-829	Pipe, tube, sheet, strip, plate, round bar, flat bar, forging stock, hexagon and wire.
7	ISO 6207, 6208, 9723 - 9725	Pipe, tube, sheet, strip, plate, round bar, flat bar, forging stock, hexagon and wire.

NICKEL 201 Chemical composition (mass fraction) (wt.%)									
Chemical				Min.(%)			Max.(%)		
C							0.02		
S							0.01		
Si							0.35		
Cu							0.25		
Ni				99					
Fe							0.4		
C	Si	Mn	P	S	Cr	Ni	Mo	V	Ta
W	N	Cu	Co	Pb	B	Nb	Al	Ti	Other

Commercially pure (99.6%) wrought nickel essentially the same as

Nickel 200 but with a lower carbon content to prevent embrittlement by intergranular carbon at temperatures over 600°F (315°C). Lower carbon content also reduces hardness, making Nickel 201 particularly suitable for cold-formed items.

STANDARD PRODUCT FORMS

Pipe, tube, sheet, strip, plate, round bar, flat bar, forging stock, hexagon and wire.

PHYSICAL CONSTANTS AND THERMAL PROPERTIES

Density, lb/in ³	0.321
g/cm ³	8.89
Melting Range, °F	2615 – 2635
°C	1435 – 1446
Specific Heat, Btu/lb•°F	0.109
J/kg•°C.....	456
Curie Temperature, °F	680
°C	360
Permeability	Ferromagnetic
Coefficient of Expansion, 70 – 200°F, 10 ⁻⁶ in/in •°F.....	7.3
21 – 93°C, µm/m• °C.....	13.1
Thermal Conductivity, Btu • in/ft ² •h•°F	550
W/m• °C.....	79.3
Electrical Resistivity, ohm• circ mil/ft.....	51
µΩ•m.....	0.085

TYPICAL MECHANICAL PROPERTIES

(Annealed)

Tensile Strength, ksi.....	58.5
MPa.....	403
Yield Strength (0.2% Offset), ksi.....	15
MPa.....	103
Elongation, %	50

NICKEL 201 Physical Properties

Tensile strength	115-234	σ_b /MPa
Yield Strength	23	$\sigma_{0.2} \geq$ /MPa
Elongation	65	$\delta 5 \geq$ (%)
ψ	-	$\psi \geq$ (%)
Akv	-	Akv $\geq$ /J
HBS	123-321	-
HRC	30	-

NICKEL 201 Mechanical Properties

Tensile strength	231-231	σ_b /MPa
Yield Strength	154	$\sigma_{0.2} \geq$ /MPa
Elongation	56	$\delta 5 \geq$ (%)
ψ	-	$\psi \geq$ (%)
Akv	-	Akv $\geq$ /J
HBS	235-268	-
HRC	30	-

NICKEL 201 Heat Treatment Regime

Annealing	Quenching	Tempering	Normalizing	Q & T
√	√	√	√	√

NICKEL 201 Range of products

Product type	Products	Dimension	Processes	Deliver Status
Plates / Sheets	Plates / Sheets	0.08-200mm(T)*W*L	Forging, hot rolling and cold rolling	Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting
Steel Bar	Round Bar, Flat Bar, Square Bar	Φ8-1200mm*L	Forging, hot rolling and cold rolling, Cast	Black, Rough Turning, Shot Blasting,
Coil / Strip	Steel Coil /Steel Strip	0.03-16.0x1200mm	Cold-Rolled & Hot-Rolled	Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting

Pipes / Tubes	Seamless Pipes/Tubes, Welded Pipes/Tubes	OD:6-219mm x WT:0.5-20.0mm	Hot extrusion, Cold Drawn, Welded	Annealed, Solution and Aging, Q+T, ACID- WASHED
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We can produce Superalloys the specifications follows: