

28

**Ni**

58.6934

Nickel

# Nickel 201

## Electrical, Electronic Nickel

### DESCRIPTION

Nickel 201 is a commercially pure wrought nickel with a chemical composition similar to Nickel 200 except for the carbon content. Carbon is held to a maximum of 0.02% and is not subject to embrittlement by precipitated carbon or graphite at high temperatures. It is the preferred over Nickel 200 for applications exposed to temperatures above 600°F. Due to its low base hardness and low work-hardening rate, Nickel 201 is suited for spinning and cold forming operations.

### APPLICATIONS

Caustic evaporators; Combustion boats; Plater bars; Electronic parts.

### TYPICAL PHYSICAL PROPERTIES

Density	lb/in. <sup>3</sup> @68 °F	0.321
	g/cm <sup>3</sup> @20 °C	8.88
Curie Temp	°F	680
	°C	360
Melting Point	°F	2635
	°C	1446
Specific Heat	BTU/lb °F @ 70°F	0.106
Thermal Coefficient Expansion	μ in./in · °F (70 to 200°F)	7.4

Source: ASM Specialty Handbook Nickel, Cobalt and Their Alloys, Nickel 201

### TYPICAL MECHANICAL PROPERTIES

Ultimate Tensile Strength	ksi	58.5
	MPa	403
Yield Strength (0.2% offset)	ksi	15.0
	MPa	103
Elongation in 50 mm	% in 2 in.	50
Modulus of Elasticity	psi	30x10 <sup>6</sup>
	GPa	207
Hardness Annealed Sheet	HRB	55

Source: ASM Specialty Handbook Nickel, Cobalt and Their Alloys, Nickel 201; Nickel and Its Alloys, p.42

### TYPICAL TENSILE PROPERTIES - ANNEALED

Temperature		Tensile Strength		Yield Strength (0.2% offset)		Elongation
°C	°F	MPa	ksi	MPa	ksi	%
20	68	403	58.5	103	15.0	50
93	200	387	56.1	106	15.4	45
149	300	372	54.0	99	14.4	46
204	400	372	54.0	102	14.8	44
260	500	372	54.0	101	14.6	41
316	600	362	52.5	105	15.3	42
371	700	325	47.2	97	14.1	53
427	800	284	41.2	93	13.5	58
482	900	259	37.5	89	12.9	58
538	1000	228	33.1	83	12.1	60
593	1100	186	27.0	77	11.2	72
649	1200	153	22.2	70	10.2	74

Source: ASM Specialty Handbook Nickel, Cobalt and Their Alloys, Nickel 201 Table 8

### THERMAL & ELECTRICAL PROPERTIES

Temperature		Thermal Conductivity		Electrical Resistivity
°C	°F	W/m · K	Btu/ft · h · °F	nΩ · m
-196	-320	...	...	16.6
-184	-300	95.5	55.2	...
-73	-100	...	...	48.2
-18	0	90.9	52.5	71.5
27	80	...	...	84.8
38	100	...	...	91.4
93	200	73.8	42.6	118.0
204	400	66.4	38.4	182.9
316	600	58.8	33.9	266.0
427	800	56.5	32.6	347.4
538	1000	59.1	34.1	385.7
649	1200	61.7	35.6	420.6
760	1400	64.2	37.1	455.5
871	1600	66.8	38.6	483.8
982	1800	69.2	40.0	512.0
1093	2000	...	...	523.7

Source: ASM Specialty Handbook Nickel, Cobalt and Their Alloys, Nickel 201 Table 9 p.21

### FORMS | SIZES AVAILABLE

Round Bar   Rod	0.062" - 2.250"
Sheet	0.030" - 0.125"
Strip   Coil	0.010" - 0.0625"

Listed above are our standard stock items. Our inventory fluctuates based on market demands. If you do not see the size or form you require, please call us.

### CHEMISTRY %

Nickel 99.0 min., Copper 0.25 max., Iron 0.40 max., Manganese 0.35 max., Carbon 0.02 max., Silicon 0.35 max., Sulfur 0.01 max.  
Source: ASTM B160-05 (2019), Table 2 Nickel UNS N02200; ASTM B162-99 (2019), Table 2 Nickel UNS N02200

### SPECIFICATIONS

AMS 5553 (sheet and strip), ASTM B160 (Bar, Rod) ASTM B162 (Plate, Sheet, Strip) UNS N02201

769 Susquehanna Avenue, Franklin Lakes, NJ 07417  
PH: 201.891.4003 | Toll Free: 800.335.6827



10537 Humbolt Street, Los Alamitos, CA 90720  
PH: 562.431.2568 | Toll Free: 800.782.9657

# Special Purpose Alloys & Metals From Stock

## Controlled Expansion | Glass Sealing

Ed Fagan Inc. supplies the highest quality metals and alloys including materials from Carpenter Technology Corp.

### Kovar® | ASTM F15 Alloy

Forms: Plate, Round Bar/Rod, Sheet, Strip/Coil  
Trade Names: Kovar®, Pernifer® 2918, NILO K®, DilverP1®

### Alloy 42/46/48/52

Forms: Plate, Round Bar/Rod, Sheet, Strip/Coil  
Trade Names: Pernifer®40, 46, 48, 50; NILO® 42, 46, 48, 50;  
Glass Sealing 42, 46, 48, 52

### Free-Cut Invar "36"® Alloy

Forms: Round Bar/Rod

### Invar "36"® Alloy

Forms: Plate, Sheet  
Trade Names: Pernifer® 36, NILO® 36, Invar

### Super Invar 32-5®

Forms: Plate, Round Bar/Rod, Sheet

## Refractory Metals and Alloys

Ed Fagan Inc. is your leading source for quality refractory metals & alloys. We stock DFARS Molybdenum, ML/MLS/MLR, Molybdenum TZM, Tantalum & Tungsten manufactured from Plansee.

### Molybdenum

Forms: Plate, Round Bar/Rod, Sheet/Coiled Sheet, Threaded Rod/Nuts, Wire

### Molybdenum Lanthanum Oxide (ML)

Forms: Sheet – Stress Relieved, Recrystallized

### Molybdenum TZM

Forms: Plate, Round Bar/Rod, Sheet

### Niobium

Forms: Plate, Round Bar/Rod, Sheet, Strip/Coil, Wire

### Rhenium

Forms: Plate, Round Bar/Rod, Sheet, Strip/Coil

### Tantalum

Forms: Plate, Round Bar/Rod, Sheet, Strip/Coil, Wire

### Tungsten

Forms: Plate, Precision Cut Wire, Round Bar/Rod, Sheet

### Tungsten Alloys

Forms: Blanks, Flats, Parts, Plate/Sheet, Rod, Shapes

## Soft Magnetic Alloys | EMI Shielding & Laminations

Ed Fagan Inc. is a distributor of "EMI shielding alloys" for VDM Metals GmbH the world's leading producer of these alloys.

### EFI Alloy 50

Forms: Round Bar/Rod, Square Bar, Strip/Coil, Wire Rod  
Trade Names: High Permeability 49®, Magnifer® 50

### EFI Alloy 79

Forms: Rectangular Bar, Round Bar/Rod, Sheet, Strip/Coil  
Trade Names: Hipernom, HyMu80®, Magnifer® 7904, Molypermalloy, Permalloy 80®

### Hiperco® 50

Forms: Strip/Coil

### Hiperco® 50A

Forms: Plate, Round Bar/Rod, Strip/Coil

### Hiperco® 50 HS

Forms: Strip/Coil

### Carpenter VimVar Core Iron

Forms: Round Bar/Rod

## Electrical & Electronic Nickels

Ed Fagan Inc. supplies select, commercially pure grades of Nickel in various forms and sizes.

### Electronic Nickels

200/201/205/233/270

Forms: Round Bar/Rod, Sheet, Strip/Coil, Wire

## Alloys and Metals We Distribute

Corrosion Resistant Alloys • High-Temperature Alloys • Stainless Steel  
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