

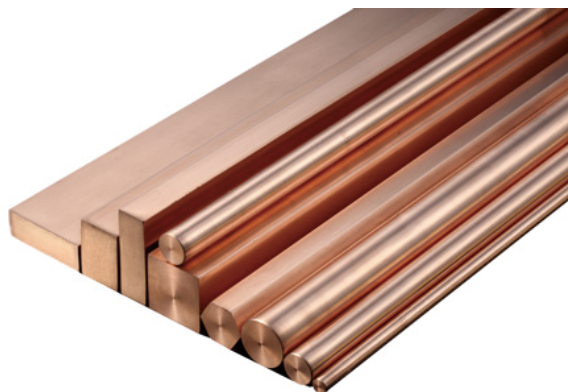
NiBz2.4Si (C18000)

Material Designation *

UNS	C18000
EN	/
JIS	/
GB	TNi2.4-0.6-0.5

Chemical Composition

Cu	Balance	%
Ni	1.8-3.0	%
Si	0.4-0.8	%
Cr	0.1-0.8	%
Fe	≤0.15	%



Characteristics

With the good capacity of welding and wear resistance, it is widely used in motor commutator, electrodes for spot welding, seam welding and butt welding, and other occasions requiring high temperature resistance, high strength, high conductivity and high hardness. This is not suitable for surface hardening and penetration treatment.

Typical Applications

It is widely applied to resistance welding electrode arm, submerged arc welding nozzle, die materials and other fields.

Physical Properties

Density ^①	8.9	g/cm ³
Melting point	1080	°C
Electrical conductivity ^①	45	%IACS
Thermal conductivity ^①	180	W/(m·K)
Coefficiency of thermal expansion ^②	17.3	10 ⁻⁶ /K
Modulus of elasticity	114	GPa

Note①: Temperature for testing is 20°C.

Note②: Temperature range for testing is 20-300°C.

Fabrication Properties

Cold workability	Good
Hot workability	Good
Brazing	Good
Resistance welding	Not recommended
Machinability compared with C36000	20%

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Mechanical Properties

Diameter	Temper	Tensile Strength	Yield Strength	Elongation	Hardness
mm		MPa min.	MPa min.	% min.	HRB min.
5 ≤ Φ ≤ 25	TH04	655	580	9	90
25 < Φ ≤ 50	TH04	635	550	9	90
50 ≤ Φ ≤ 75	TH04	607	520	9	90

Tolerance and Delivery Form

Straight Bar

Diameter	Tolerance ^③	Ovality	Length	Straightness
mm	mm	mm	mm max.	mm/m max.
5 ≤ Φ ≤ 10	0.06	0.03	4000	1.0
10 < Φ ≤ 20	0.10	0.05	4000	1.0
20 < Φ ≤ 25	0.14	0.07	4000	1.0
25 < Φ ≤ 30	0.18	0.09	4000	1.0
30 < Φ ≤ 40	0.20	0.10	4000	1.0
40 < Φ ≤ 45	0.24	0.12	4000	1.0
45 < Φ ≤ 50	0.30	0.15	4000	1.0
50 < Φ ≤ 60	0.34	0.17	4000	1.0
60 < Φ ≤ 80	0.44	0.22	2500	3.0

Diameter	Tolerance ^③	Standard coil weights	Coil ID
mm	mm	kg	mm
1.0 < Φ ≤ 1.6	0.03	18-30	260-300
1.6 < Φ ≤ 2.5	0.03	25-40	320-350
2.5 < Φ ≤ 4.0	0.04	30-45	370-400
2.8 < Φ ≤ 6.5	0.04	100-250	400-650
4.0 < Φ ≤ 6.5	0.05	45-60	370-400
6.5 < Φ ≤ 10.0	0.05	200-400	1000-1200
8.0 < Φ ≤ 12.0	0.06	200-400	1200-1400

Note③: The tolerances listed in the table are specified as all plus or all minus. When tolerances are specified as plus and minus (±), half the values given.

*Composition
Conductivity
Mechanical Properties
Fabrication Properties
Other Physical Properties

CDA
RWMA 18-2003 Class III
RWMA 18-2003 Class III, Yield Strength for reference only.
For reference only
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