ASTM B344 Ni80Cr20 (Cr20Ni80)

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Ni80Cr20 Nickel-Chromium Austenitic Resistance Heating Alloy Wire

ASTM B344 / DIN 17470 · Up to 690 V AC · −60…+1200 °C industrial Ni80Cr20 construction

ASTM B344 / DIN 17470 | **Up to 690 V AC** | **−60…+1200 °C**



Application

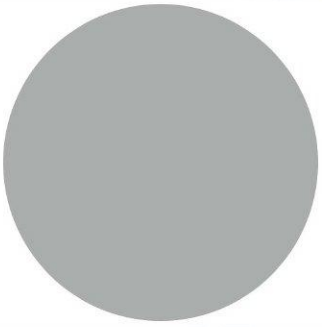
Ni80Cr20 Nickel-Chromium Austenitic Resistance Heating Alloy Wire (Ni80Cr20 (Cr20Ni80)) engineered to ASTM B344 / DIN 17470 (1.4861 / CrNi 80 20) for Up to 690 V AC service across −60…+1200 °C, featuring austenitic 80ni-20cr resistance alloy core and

Typical uses: Metallurgical, Glass & Ceramic Furnaces, High-Temperature Thermal Processing, Heavy Industrial Kilns & Ovens, Power Generation & Petrochemical Heaters, Automated Assembly & Packaging Lines

Construction



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Cross-section, not to scale

1	Austenitic 80Ni-20Cr resistance alloy core	ASTM B344 / DIN 17470 (1.4861 / CrNi 80 20)
2	Self-healing Cr_2O_3 protective oxide surface	ASTM B344 / DIN 17470 (1.4861 / CrNi 80 20)

Technical data

Typical values

Rated voltage / duty	Up to 690 V AC (ASTM B344 / DIN 17470 (1.4861 / CrNi 80 20))	**Conductor construction**	Austenitic 80Ni-20Cr resistance alloy core — Solid drawn Ni80Cr20 (Cr20Ni80 / 1.4861) nickel-chromium resistance heating alloy
Primary insulation / dielectric	Self-healing Cr_2O_3 protective oxide surface — Adherent chromium-oxide (Cr_2O_3) high-temperature surface passivation layer (+1200 °C)	**Continuous operating temperature**	−60…+1200 °C per ASTM B344 / DIN 17470 (1.4861 / CrNi 80 20)
Short-circuit / peak thermal limit	+160 °C to +250 °C (5 s adiabatic limit depending on dielectric class)	**Minimum installation temperature**	−5 °C (thermoplastic) / −25 °C (cross-linked or elastomer) / −40 °C (metallic)
Outer protection / covering	Self-healing Cr_2O_3 protective oxide surface — Adherent chromium-oxide (Cr_2O_3) high-temperature surface passivation layer (+1200 °C)	**Minimum bending radius**	3 × OD (installed / static routing)
Layer count & geometry	2 concentric/structural layers verified by cross-section inspection	**Environmental & chemical durability**	Engineered for industrial service in accordance with ASTM B344 / DIN 17470 (1.4861 / CrNi 80 20)
RoHS & REACH compliance	RoHS 2 (2011/65/EU + 2015/863) & REACH SVHC compliant	**Standards**	ASTM B344 / DIN 17470 (1.4861 / CrNi 80 20)

Sizes

10 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	Nominal conductor	Max. overall Ø mm	Weight ≈ kg/km	Min. mandrel R mm
Ni80Cr20 (Cr20Ni80) Standard Precision Winding Schedule (−60…+1200 °C) 10 sizes				
☐ Ni80Cr20 (Cr20Ni80) Ø 0.25 mm	Ø 0.25 mm (AWG 30)	0.29	0.45	2
☐ Ni80Cr20 (Cr20Ni80) Ø 0.40 mm	Ø 0.40 mm (AWG 26)	0.45	1.14	2
☐ Ni80Cr20 (Cr20Ni80) Ø 0.63 mm	Ø 0.63 mm (AWG 22)	0.69	2.82	3
☐ Ni80Cr20 (Cr20Ni80) Ø 0.80 mm	Ø 0.80 mm (AWG 20)	0.87	4.54	4
☐ Ni80Cr20 (Cr20Ni80) Ø 1.00 mm	Ø 1.00 mm (AWG 18)	1.08	7.08	5
☐ Ni80Cr20 (Cr20Ni80) Ø 1.25 mm	Ø 1.25 mm (AWG 16)	1.34	11.00	6
☐ Ni80Cr20 (Cr20Ni80) Ø 1.60 mm	Ø 1.60 mm (AWG 14)	1.70	18.10	8
☐ Ni80Cr20 (Cr20Ni80) Ø 2.00 mm	Ø 2.00 mm (AWG 12)	2.11	28.20	10
☐ Ni80Cr20 (Cr20Ni80) Ø 2.50 mm	Ø 2.50 mm (AWG 10)	2.62	44.10	13
☐ Ni80Cr20 (Cr20Ni80) Ø 3.15 mm	Ø 3.15 mm (AWG 8)	3.28	70.00	16

– Supplied on precision PT25 / PT45 / PT90 / Din 355 conical and cylindrical winding spools per ASTM B344 / DIN 17470 (1.4861 / CrNi 80 20).

DC resistance & dielectric breakdown voltage

5 sizes

Conductor size	Nominal R_{20} Ω/km	Min. breakdown VAC	Thermal class
Ø 0.25 mm (0.049 mm²)	351.00	4,200	−60…+1200 °C
Ø 0.63 mm (0.312 mm²)	55.30	5,000	−60…+1200 °C
Ø 1.00 mm (0.785 mm²)	21.90	5,500	−60…+1200 °C
Ø 1.60 mm (2.011 mm²)	8.57	5,800	−60…+1200 °C
Ø 2.50 mm (4.909 mm²)	3.51	6,000	−60…+1200 °C

– Tested in accordance with IEC 60851-5 / ASTM B344 / DIN 17470 (1.4861 / CrNi 80 20) routine dielectric and elongation test methods.

Standards and approvals

- ASTM B344 Compliant
- EN 10204 3.1 Routine Test Certificate
- CE, RoHS 2 (2011/65/EU) & REACH

Certifications

Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone
+86 185 9591 3361

Email
info@tebaoflex.com

Web
tebaoflex.com/cables/ni80cr20-cr20ni80-nickel-chromium-resistance-heating-alloy-wire

Typical values for this cable type, based on ASTM B344 / DIN 17470 (1.4861 / CrNi 80 20). Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.