

CERAFIL®

CN8



- 1 • Copper / Nickel support
- 2 • Ceramic insulation

Standards and approvals

CGP INNOVATION

CERAFIL®, a ceramic-insulated wire for very high temperatures is the result of several years of research in our laboratory. Our team of engineers has developed ground-breaking technology that deposits ceramic on a lead wire of very small diameter (from 0.07 mm).

These outstanding advantages - **miniature size, weighing far less and resistance to extreme temperatures** - mean that **CERAFIL®** is nowadays used in many highly technical applications and research projects in areas like the aerospace and nuclear industries.

Colour code

Grey

Applications

This very high temperature miniature wire has been designed to constitute extremely reliable windings capable of withstanding any thermal overloads (mechanical heating, short-circuit, location with thermal risk, etc.)

We can also produce on request thermocouple cables with **CERAFIL®** type ceramic insulation to measure the temperature in contained environments subject to extreme heat (range: **COUPLIX®**)

A FEW PRECAUTIONS WHEN USING

Ceramic is very different from traditional insulations. It is a rigid, hydrophilic material that requires special care when using.

CERAFIL® must be stored in a dry environment and handled with care, without mechanical mistreatment (folding, traction, etc.). It must be stripped using fine grain sandpaper. Do not hesitate to contact us for further information.

Characteristics

• Thermal

Continuous operating temperature: **-90°C to +500°C**
+800°C during 240 h minimum

Peak temperature **+1,000°C**

At temperature > 315°C after extended use, **CERAFIL®** can experience migration of the nickel that may cause its max. resistivity to increase

• Chemical

Resistance to chemical environments: ★★★★★
(Inert to usual and organic solvents)

Resistance to humidity: ★☆☆☆☆
(Product sensitive to moisture - hydrophilic)

• Electrical

Test voltage (1 min): 150 AC / 212 V DC

• Radiation Resistance ★★★★★

Withstands prolonged exposure to neutrons and gamma rays without altering the mechanical resistance of the insulation

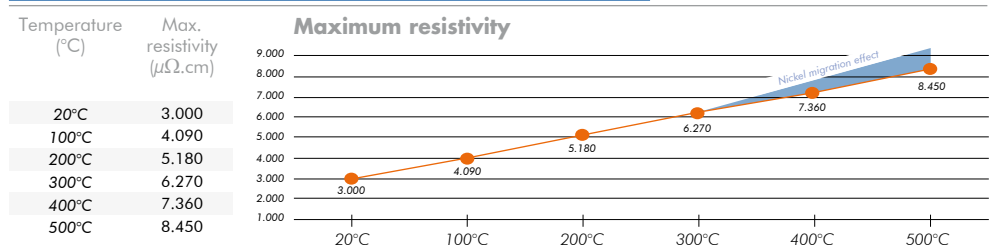
• Fire resistance

Totally non-combustible at temperatures over 1,000°C, **CERAFIL®** may melt but cannot catch fire

CONSTRUCTION AND MAIN PROPERTIES

Core diameter (mm)	AWG	Nominal outer diameter (mm)	Tolerance (mm)	Linear weight (g / km)	Length (m / kg)	Maximum tensile strength (N)	Minimum bending radius (mm)	Maximum linear resistance at 20°C (Ω / m)
07/100	41	0.088	+/- 0.002	34	29,800	0.23	0.45	7.795
10/100	38	0.115	+/- 0.005	71	14,000	0.47	0.6	3.818
12/100	36	0.138	+/- 0.002	101	9,901	0.67	0.7	2.652
15/100	34	0.168	+/- 0.002	161	6,210	1.06	0.85	1.697
17/100	34	0.188	+/- 0.002	202	4,950	1.36	0.93	1.322
20/100	32	0.218	+/- 0.002	286	3,500	1.88	1.1	0.954
25/100	30	0.268	+/- 0.002	446	2,240	2.95	1.35	0.611
30/100	28	0.318	+/- 0.002	637	1,570	4.24	1.6	0.424
35/100	27	0.368	+/- 0.002	862	1,160	5.77	1.85	0.312
40/100	26	0.418	+/- 0.002	1,136	880	7.54	2.1	0.239
45/100	25	0.468	+/- 0.002	1,433	698	9.55	2.35	0.189
50/100	24	0.518	+/- 0.002	1,754	570	11.78	2.6	0.153
55/100	23	0.568	+/- 0.002	2,105	475	14.25	2.85	0.126
60/100	22	0.618	+/- 0.002	2,500	400	16.96	3.1	0.106
65/100	22	0.668	+/- 0.002	2,899	345	19.91	3.35	0.090
70/100	21	0.718	+/- 0.002	3,356	298	23.09	3.6	0.078
80/100	20	0.818	+/- 0.002	4,348	230	30.16	4.1	0.059
90/100	19	0.918	+/- 0.002	5,814	172	38.17	4.6	0.047
100/100	18	1.018	+/- 0.002	7,194	139	47.12	5.1	0.038

CHANGES IN THE ELECTRICAL PROPERTIES OF CERAFIL® BASED ON THE TEMPERATURE



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