

NICKEL DH

RESISTANCE HEATING WIRE AND RESISTANCE WIRE

DATASHEET

Nickel DH is a nickel alloy (Ni alloy) with a minimum nickel content of 99.2 % suitable for use at temperatures up to 600°C (1100°F).

Typical applications for Nickel DH are lamp filaments filters and many industrial and laboratory equipment where there is need for good corrosion resistance. It is also often used as a resistor when high variation of resistance with temperature is required.

CHEMICAL COMPOSITION

	Si %	Fe %	Mn %	Ni %
Nominal composition				
Min				99.2
Max	0.2	0.4	0.3	-

MECHANICAL PROPERTIES

Diameter	Yield strength	Tensile strength	Elongation	Hardness
∅	R _{p0.2}	R _m	A	
mm (in)	MPa (ksi)	MPa (ksi)	%	Hv
0.50 (0.02)	250 (36)	450 (65)	30	100

PHYSICAL PROPERTIES

Density g/cm ³ (lb/in ³)	8.9 (0.322)
Electrical resistivity at 20°C Ω mm ² /m (Ω circ. mil/ft)	0.09 (54.1)

TEMPERATURE FACTOR OF RESISTIVITY

Temperature °C	20	100	200	300	400	500	600
Temperature °F	68	212	392	572	752	932	1112
Ct	1.00	1.40	2.08	2.97	3.81	4.23	4.65

COEFFICIENT OF THERMAL EXPANSION

Temperature °C (°F)	Thermal Expansion x 10 ⁻⁶ / K (10 ⁻⁶ / °F)
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20 - 100 (68-212)	13.3 (7.4)

THERMAL CONDUCTIVITY

Temperature °C (°F)	
	100 (212)
W m ⁻¹ K ⁻¹ (Btu h ⁻¹ ft ⁻¹ °F ⁻¹)	70 (40.5)

SPECIFIC HEAT CAPACITY

Temperature °C (°F)	
	20 (68)
kJ kg ⁻¹ K ⁻¹ (Btu lb ⁻¹ °F ⁻¹)	0.48 (0.11)

Melting point °C (°F)	1450 (2642)
Max continuous operating temperature in air °C (°F)	600 (1112)
Magnetic properties	The material is magnetic up to approx 360°C (680°F)(the Curie point)

Disclaimer: Recommendations are for guidance only, and the suitability of a material for a specific application can be confirmed only when we know the actual service conditions. Continuous development may necessitate changes in technical data without notice. This datasheet is only valid for materials under the trademark Kanthal®.