

NISIL NNX STRIP

DATASHEET

Nisil is an austenitic nickel-silicon alloy (NiSi alloy) used for the negative leg of thermocouple type N. It offers better oxidation resistance than type E, J and K thermocouples.

Nisil alloy cannot be exposed to sulphur-containing gases. This thermocouple alloy is the most recent one among the different types covered by the international standards.

CHEMICAL COMPOSITION (NOMINAL)

CHEMICAL COMPOSITION (NOMINAL) %

Si	Mg
4.3	0.1

Balance nickel.

MECHANICAL PROPERTIES

Yield strength	Tensile strength	Elongation
R _{p0.2}	R _m	A
MPa	MPa	%
300	680	33

Properties are measured on wire Ø 2 mm

PHYSICAL PROPERTIES

Density g/cm ³	8.59
Electrical resistivity at 20°C Ω mm ² /m	0.36

Coefficient of thermal expansion

Temperature °C	Thermal Expansion x 10 ⁻⁶ / K
20 - 100	17

Thermal Conductivity

Temperature °C	20
W m ⁻¹ K ⁻¹	17

Thermoelectric properties
NOMINAL EMF VALUES VS NICROSIL

Temperature °C	mV
100	2.774
200	5.913

Size range

Standard sizes for thermocouple strip range from thickness 0.10 to 3.0 mm (0.0039 to 0.181 inch) and width from 4 to 195 mm (0.157 to 7.68 inch).

Melting point °C	1420
Magnetic properties	The material is non- magnetic.

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