ISABELLENHÜTTE

Brand Name	ISA®-SIL
Material Code	
Abbreviation	NNC / CPC

Chemical Composition (mass components) in %.
Average values of alloy components

Cu	Ni	Mn	Fe
Balance	44	3	2

Form of Delivery

ISA®-SIL is supplied in the form of wires from 0.05 to 8 mm Ø in bare condition. Enamelled wires are available in dimensions between 0.05 and 1.5 mm Ø. ISA®-SIL can also be supplied in form of stranded wire, flat wire and rods. Please contact us for the range of dimensions.

Features and Application Notes

ISA®-SIL is used as negative leg for the compensating lead of thermocouple type N. ISA®-SIL is standardized in the temperature range between 0 and 150 °C. ISABELLENHÜTTE supplies ISA®-SIL in standardized tolerances up to 200 °C.

Thermoelectrical and Electrical Values in Soft-Annealed Condition

EMF versus Cu/NIST 175 0 – 100 °C / mV	EMF versus Pt67/NIST 175 0 – 100 °C / mV	EMF versus Cu 0 – 200 °C / mV	EMF versus Pt67/NIST 175 0 – 200 °C / mV	Electrical resistivity in µΩ x cm at 20 °C
– 2.77	-2.00	– 5.92	– 4.07	52

Physical Characteristics (Reference Values)

Density at 20 °C	Melting point	Specific heat at 20 °C	Thermal conductivity at 20 °C	Average linear thermal expansion coefficient between 20 °C and 100 °C	Magnetic at room temperature
g/cm^3	°C	J/g K	W/m K	10^{-6}/K	
8.9	1280	0.41	23	13.5	no

Mechanical Properties at 20 °C in Annealed Condition [1)]

	Tensile strength MPa	Elongation %	Hardness HV10
hard	> 840	< 2	> 240
soft	500	30	120

1) The mechanical values considerably depend on dimension. The indicated values refer to a dimension of 1 mm diameter.

Notes on Treatment

ISA®-SIL is easy to process. The alloy can be soldered and brazed without difficulty.
All known welding methods are applicable.

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