Brand Name	**A-COPPER 11**
Material Code	
Abbreviation	**SNCA / SNCB / RNCA / RNCB**

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

Cu	Ni	Mn			
Balance	3	2			

Features and Application Notes
A-COPPER 11 is used as negative leg for the compensating lead for thermocouple types Pt10Rh-Pt and Pt13Rh-Pt. A-COPPER 11 is standardized in the temperature range between 0 and +200 °C.

Form of Delivery
A-COPPER 11 is supplied in the form of wires with dimensions from 0.05 to 13.50 mm Ø in bare condition. Enamelled wires are available in dimensions between 0.05 and 1.50 mm Ø. A-COPPER 11 can also be supplied in form of stranded wire, ribbon, flat wire and rods. Please contact us for the range of dimensions.

Thermoelectrical[1] and Electrical Values in Soft-Annealed Condition

EMF versus Cu/NIST 175 at +100 °C / mV[3]	EMF versus Pt67/NIST 175 at +100 °C / mV[3]	EMF versus Cu at +200 °C / mV[3]	EMF versus Pt67/NIST 175 at +200 °C / mV[3]	Electrical resistivity in µΩ x cm at +20 °C
-0.646 / -0.647	**0.127 / 0.126**	**-1.441 / -1.469**	**0.396 / 0.368**	**12.000**
SC/RC	**SC/RC**	**SC/RC**	**SC/RC**	

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/cm³	**°C**	**J/g K**	**W/m K**	**10^{-6}/K**	
8.90	**+1,080**	**0.38**	**≈100**	**18**	**no**

Mechanical Properties at +20 °C in Annealed Condition[3]

	Tensile strength MPa	Elongation %	Hardness HV10
hard	**> 500**	**2**	**> 170**
soft	**320**	**33**	**90**

Notes on Treatment // A-COPPER 11 is easy to process. Copper-nickel alloys can be soft and hard soldered as well as welded by the known processes. On request we supply material tested according to DIN EN 60068-2-20.

1) The exact EMF values can be calculated with a "EMF-Software", which can be downloaded from our homepage.
2) Reference at 0 °C.
3) The mechanical values considerably depend on dimension. The indicated values refer to a dimension of 1.0 mm diameter.

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