

Brand Name	S-COPPER		
Material Code	2.1356		
Abbreviation	BPC		
Chemical Composition (mass components) in %. Average values of alloy components			
Cu	Mn		
Balance	3		

Form of Delivery

S-COPPER is supplied in the form of wires with dimensions from 0.05 to 8 mm Ø in bare condition. Enamelled wires are available in dimensions between 0.05 and 1.5 mm Ø. S-COPPER can also be supplied in form of

stranded wire, ribbon, flat wire and rods. Please contact us for the range of dimensions.

Features and Application Notes

S-COPPER is used as positive leg for the compensating lead of thermocouple type Pt30Rh-Pt6Rh.

S-COPPER is standardized in the temperature range between 0 and 100 °C. ISABELLENHÜTTE delivers S-COPPER with a tolerance of $\pm 30 \mu\text{V}$ 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 $\mu\Omega \times \text{cm}$ at 20 °C
0.033	0.806	0.178	2.014	12.5

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	$10^{-6}/\text{K}$	
8.8	1050	0.39	84	15.5	no

Mechanical Properties at 20 °C in Annealed Condition ¹⁾

	Tensile strength MPa	Elongation %	Hardness HV10
hard	> 530	2	> 140
soft	290	30	70

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

Notes on Treatment

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