



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

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.

Form of Delivery

S-COPPER is supplied in the form of wires with dimensions from 0.05 to 8.00 mm \varnothing in bare condition. Enamelled wires are available in dimensions between 0.05 and 1.50 mm \varnothing . S-COPPER can also be supplied in form of stranded wire, ribbon, flat wire and rods. Please contact us for the range of dimensions.

Thermoelectrical and Electrical Values in Soft-Annealed Condition

EMF versus Cu/NIST 175 at +100 °C / mV ¹⁾	EMF versus Pt67/NIST 175 at +100 °C / mV ¹⁾	EMF versus Cu at +200 °C / mV ¹⁾	EMF versus Pt67/NIST 175 at +200 °C / mV ¹⁾	Electrical resistivity in $\mu\Omega \times \text{cm}$ at +20 °C
0.033	0.806	0.178	2,014	12.500

Physical Characteristics (Reference Values)

Density at +20 °C	Melting point	Specific heat at +20 °C	Thermal conducti- vity 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	
8.80	+1,050	0.39	84.00	15.50	no

Mechanical Properties at +20 °C in Annealed Condition²⁾

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

Notes on Treatment // S-COPPER is easy to process. The alloy 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) Reference at 0 °C.

2) The mechanical values considerably depend on dimension. The indicated values refer to a dimension of 1.0 mm diameter.