Brand Name	**CENTANIN® 1)**
Material Code	
Abbreviation	**CuMn27Ni5**

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

Cu	Ni	Mn	Al		
67	5	27	1		

Features and Application Notes

CENTANIN® is in the best tradition of Isabellenhütte's precision resistance alloys ZERANIN® 30, MANGANIN®, NOVENTIN® and ISAOHM®. CENTANIN® is especially characterized by a high resistivity and a low temperature coefficient of resistance between +20°C and +60 °C with a parabolic behavior of the R(T) curve. CENTANIN® is excellently suitable for the production of standard resistors with a maximum working temperature in air of +140°C. It is also suitable for heating elements with low conductor temperatures up to 300°C in non-oxidizing atmosphere.
Due to its low melting point, CENTANIN® is also proved successfully for years in thermal spraying applications, e.g. heating layers and heated surfaces.

Form of Delivery

CENTANIN® is supplied in the form of round wires in the range of 1 to 6 mm Ø in bare annealed condition. Also available on request other Diameters, sheets, ribbons, flat wires, stranded wires and rods.

Notes on Treatment

This alloy is in hard drawn condition subject to stress-corrosion-cracking and should be annealed immediately after being processed.

Electrical Resistance in Annealed Condition

Temperature coefficient of the electrical resistance at	Electrical resistivity tolerance +10 %		
+20 °C and +50 °C 10^{-6}/K		+20 °C Nom. value	+100 °C Reference value
±20	**µΩ x cm**	**100**	**100**
	CMF	**602**	**602**

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		Thermal EMF against copper at
				+100 °C	+400 °C	+20 °C
g/cm³	**°C**	**J/g K**	**W/m K**	**10^{-6}/K**	**10^{-6}/K**	**µV/K**
7.8	**+900**	**0.42**	**-**	**20**	**-**	**≤+3**

Strength Properties at +20 °C in Annealed Condition

Tensile Strength **N/mm²**	Elongation (L_0 = 100 mm) % at nominal diameter in mm
[Min.]	Over 1 min.
540	**25**

1) CENTANIN® is a registered trademark of Isabellenhütte Heusler GmbH & Co. KG.

Precision resistance alloys:

	ZERANIN®30	MANGANIN®	ISOTAN®	ISABELLIN® A	NOVENTIN®	CENTANIN®	ISAOHM®
resistivity [µΩ*cm]	29	43	49	50	90	100	132
low TCR	●	●	●	◐	●	◐	●
low thermal EMF	◐	●	○	○	●	○	○
solderability / workability	●	●	●	◐	●	◐	○

very good ●
good ◐
less good ○

ISABELLENHÜTTE
Innovation by Tradition

Issue 10-April-2024