



Brand Name	ISOTAN®¹⁾			
Material Code	2.0842			
Abbreviation	JN / LN / TN / UN / EN / JNX / LNX / TNX / UNX / ENX / KNCB / CNC			
Chemical Composition (mass components) in %.				
Average values of alloy components				
Cu	Ni	Mn		
Rem.	44	1		

Features and Application Notes

ISOTAN® is used as negative leg of thermocouple types J and L as well as T, U and E. In the version for extension leads, ISOTAN® is used for JNX, LNX as well as TNX, UNX and ENX. ISOTAN® is also used as compensating lead in type KNCB as well as negative leg for compensating lead type W5Re/W26Re. The standardized temperature range of the different application possibilities of ISOTAN®, is available in the tables of the glossary. We supply various qualities of ISOTAN®, which are suited for different applications or standards.

Form of Delivery

ISOTAN® is supplied in the form of wires with dimensions from 0.03 to 10.00 mm Ø in bare condition. Enamelled wires are available in dimensions between 0.05 and 1.50 mm Ø. ISOTAN® can also be supplied in form of stranded wire, ribbon, flat wire and rods. Please contact us for the range of dimensions.

Thermoelectrical³⁾ and Electrical Values in Soft-Annealed Condition

EMF versus Cu/NIST 175 at +100 °C / mV ⁴⁾	EMF versus Pt67/NIST 175 at +100 °C / mV ⁴⁾	EMF versus Pt67/NIST 175 at +700 °C / mV ⁴⁾	Electrical resistivity in $\mu\Omega$ x cm at +20 °C
-4.1 to -4.7	-3.3 to -3.9	-29.6 to -34.7	49

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	+1,280	0.41	23.00	13.50	no

Strength Properties at +20 °C in Annealed Condition⁵⁾

	Tensile strength MPa	Elongation %	Hardness HV10
hard	> 740	2	> 230
soft	420	30	95

Notes on Treatment // ISOTAN® is easy to process. The alloy can be soldered and brazed without difficulty. All known welding methods are applicable.

1) ISOTAN® is a registered trademark of Isabellenhütte Heusler GmbH & Co. KG, also known as Konstantan®²⁾.

2) Konstantan® is a registered trademark of KRUPP VDM GmbH.

3) The exact EMF values can be calculated with a "EMF-Software", which can be downloaded from our homepage.

4) Reference at 0 °C.

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