



Brand Name	<b>ISA-CON®450</b>				
Material Code	1)				
Abbreviation	<b>CuCr 1.0</b>				
Chemical Composition (mass components) in %. Average values of alloy components					
<b>Cu</b> Rem.	<b>Cr</b> 1.0				

## PRELIMINARY VERSION

### Features and Application Notes

The ISA-CON® product family is renowned by its unique combination of mechanical strength and electrical conductivity.

ISA-CON®450 is a RoHS compliant copper chromium alloy to replace cadmium chromium copper C18125 or PD135. It fulfills the requirements of the ASTM B624.

ISA-CON®450 achieves a mechanical strength of 450 MPa at 80% IACS in hard conditions. It has a good corrosion resistance and can be coated with nickel, tin or silver.

ISA-CON®450 has good flex live properties and high softening resistance for use at higher temperatures.

### Form of Delivery

ISA-CON®450 is supplied in the form of round wires in the range of 1.0 to 7.0 mm Ø. Flat wires and other dimensions are available on request.

### Electrical Properties in Hard Condition

Temperature coefficient of electrical resistance between	Electrical conductivity	Electrical resistance	
+20 °C and +105 °C 10 <sup>-6</sup> /K	+20 °C	+20 °C	
<b>approx. +3,000</b>	<b>% IACS</b>	<b>m/Ω mm<sup>2</sup></b>	<b>μΩ x cm</b>
	<b>≥80</b>	<b>≥46</b>	<b>≤2.22</b>

### Strength Properties at +20 °C in Hard Condition

Tensile Strength		Elongation (L <sub>0</sub> = 100 mm) % at 5.25 mm diameter	
<b>MPa</b>	<b>ksi</b>	<b>%</b>	
<b>≥450</b>	<b>≥65</b>	<b>&gt;5</b>	

### 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	Thermal EMF against copper at +20 °C
<b>g/cm<sup>3</sup></b>	<b>lb/cub in</b>	<b>°C</b>	<b>J/g K</b>	<b>W/m K</b>	<b>10<sup>-6</sup>/K</b>	<b>μV/K</b>
<b>8.9</b>	<b>0.32</b>	<b>1,080</b>	<b>on demand</b>	<b>on demand</b>	<b>on demand</b>	<b>±1.0</b>

1) ISA-CON®450 is not a standardized alloy.

