

C10100 OFE AND C10200 OF CONDUCTIVE WIRE

DATASHEET

Copper has excellent physical, thermal properties and electrical conductivity. Copper is easily soldered, welded and plated for corrosion resistance.

Gold plated pure copper is used when electrical conductivity is crucial and its application is critical to maintaining a stable resistance with minimal variation over the wire length.

Copper is available in three grades of Oxygen free (OF), Oxygen free electronic (OFE) and also in grade [Electrolytic Tough Pitch \(ETP\)](#), in both round and milled ribbon forms.

CHEMICAL COMPOSITION

	Cu %	Ag %
C10100 OFE Oxygen free electronic	99.99	-
C10200 OF Oxygen free	99.99	min

Table represents nominal composition of each grade

MECHANICAL PROPERTIES

	Tensile strength R _m	
	MPa	ksi
Hard	455	66
Annealed	220	32

PHYSICAL PROPERTIES

Density g/cm ³ (lb/in ³)	8.94 (.323)
Electrical resistivity at 20°C Ωmm ² /m (Ω circ. mil/ft)	0.017 [10.2]
Temperature coefficient of resistance K ⁻¹	+0.00397
Conductivity at 20°C (68°F)	Annealed 101% IACS min

COEFFICIENT OF THERMAL EXPANSION

Temperature °C (°F)	Thermal expansion 10 ⁻⁶ /K (10 ⁻⁶ /°F)
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COEFFICIENT OF THERMAL EXPANSION

Temperature °C (°F)	Thermal expansion 10 ⁻⁶ /K (10 ⁻⁶ /°F)
20-500 (68-932)	17.0 (9.4)

THERMAL CONDUCTIVITY

Temperature °C (°F)	100 (212)
W m ⁻¹ K ⁻¹ (Btu h ⁻¹ ft ⁻¹ °F ⁻¹)	391 (226)

SPECIFIC HEAT CAPACITY

Temperature °C (°F)	20
kJ kg ⁻¹ K ⁻¹ (Btu lb ⁻¹ °F ⁻¹)	0.385 (0.092)

Melting Point °C (°F)	1083 (1981)
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STANDARDS

Specifications	ASTM B170, 1, 2, 3, F-68, 272-grade 1 and 2
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Disclaimer: Recommendations are for guidance only, and the suitability of a material for a specific application can be confirmed only when we know the actual service conditions. Continuous development may necessitate changes in technical data without notice. This datasheet is only valid for materials under the trademark Kanthal®.