CU-OFE

Abbreviation	EN Norm	ASTM / AISI	AFNOR	DIN Abbreviation	ISO	Other
CU-OFE	CU-OFE	C10100			CU-OFE	CW009A

CU-OFE Wire

Chemical analysis by European norm EN 10088-1 in mass percent.

Cu
≥ 99.99

Diameter 0.02 – 4.00 mm

Application
CU-OFE is used chiefly in the electronic and electrical engineering industry. Applications requiring high mechanical strength often use wires and stranded wires made with this oxygen-free copper. Its chemical purity and fine-grained microstructure allow for fatigue strength considerably higher than conventionally manufactured copper alloys.
This alloy's high thermal conductivity allows it to also be used for assorted thermal conductors.

Resistance to Corrosion
A robust external layer of oxide gives CU-OFE strong resistance to corrosion and stress corrosion cracking is all but eliminated.

Thermal Treatment
CU-OFE can be soft annealed at 650 °C. The material loses its tension at 150 °C to 200 °C.

Weldability
Although CU-OFE can be welded, hard or soft soldering are definitely better processes to form connections. The excellent thermal conductivity causes very rapid cooling during welding. To ensure constant melt flow and temperature, the work piece should be pre-heated to 400 °C to 600 °C.

Surface Finish

Drawn	Chemically purged	0.020 – 4.000 mm
Surface ground	Chemically purged	2.000 – 4.000 mm

CU-OFE

Delivery Condition

As a ring

On assorted spools

Straightened

Axles

Diameter Tolerances

Diameter (mm)	Tolerance (%)	Tolerance (µ)
0.020 – 0.249		± 1.0
0.250 – 0.399		± 1.5
0.400 – 1.500		± 2.0
1.500 – 4.000		± 2.5

Mechanical Properties

Condition at delivery (mm)	Ultimate Tensile Strength (N/mm^2)
0.005 – 0.019	250 – 480
0.020 – 0.199	250 – 480
0.200 – 0.499	250 – 480
0.500 – 0.999	250 – 480
1.000 – 1.999	250 – 480
2.000 – 4.000	250 – 480

Physical Properties

Density		8.94	g/cm^3
Coefficient of Thermal Expansion	20 °C – 200 °C	17.30	$10^{-6}/K$
Specific Heat Capacity	20 °C	460.00	J/kgK
Thermal Conductivity	20 °C	3.93	W/mK
Specific Electric Resistance	20 °C	0.017	Ω mm^2/m
Young's Modulus	20 °C	118.00	GPa