



OFE - Cu

COPPER

CHEMICAL COMPOSITION :

Cu \leq 99.99 [%]

ALLOY DENOMINATIONS :

MATERIAL N° EN : CW009 A
WN/MATERIAL N° DIN : 2.0040
ROBERT LAMINAGE : 120
EN : K 09
DIN : CU OFE
AFNOR : CU-c2
UNS* : C10100

*Unified Numbering System (USA)

PHYSICAL PROPERTIES :

Density 20° C	8.94	Kg/dm ³
Melting point	1083	°C
Modulus of elasticity, longitudinal	127	GPa
Thermal Conductivity	390	W/M . K
Electrical Conductivity	58	M/ Ω mm ²
Electrical resistivity	0.017241	Ω mm ² /M
Coefficient of linear expansion from 20 up to 300°C	17 x 10 ⁻⁶	K ⁻¹
IACS (International Annealed Copper Standard)	100	%

WORKABILITY :

Coldworking	Very good
Hotworking	Good (750-950°C)
Machining	Poor
Soldering, brazing	Very good
Tin soldering	Good
Polishing	Good
Annealing temperature	350-500°C
Stress relieving heat treatment temperature	150-200°C

MAIN APPLICATIONS :

Various electrical components,
Collectors strips, conductors
Deep drawing, stamping

AVAILABLE SIZES :

Widths	from 2 up to 350mm
Thickness	from 0.01up to 2.5mm

TOLERANCES :

Depending on product

QUALITY OF EDGES :

Slit edges

CONDITIONING :

- a) In coils
- b) Cut to length, from 0.5 up to 3 m



MECHANICAL PROPERTIES :

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EN NORM

TEMPER	THICKNESS		Rm (MPa)		Rp 0.2 (Mpa)	ELONGATION		Vickers HARDNESS		GRAIN SIZE
			min	max		0.10 up to 2.5 mm A50 % min	above 2.5 mm A100 % min	min	max	
R220 H040	0.2	5	220	260	(max 140)	33	42	-	-	-
			-	-	-	-	-	-	40	65
R240 H065	0.2	15	240	300	(min 180)	8	15	-	-	-
			-	-	-	-	-	-	65	95
R290 H090	0.2	15	290	360	(min 250)	4	6	-	-	-
			-	-	-	-	-	-	90	110
R360 H110	0.2	2	360	-	(min 320)	2	-	-	-	-
			-	-	-	-	-	-	110	-

(For reference only)

DIN NORM 17670

TEMPER	THICKNESS	Rm (MPa)		Rp 0.2 (Mpa)	ELONGATION		Vickers HARDNESS	
		min	max		0.10 up to 2.5 mm A50 % min	above 2.5 mm A100 % min	min	max
F20	> 5	200	250	max 100	42	36	-	-
H40	< 15	-	-	-	-	-	-	-
F22	≥ 0.2	220	260	max 140	42	36	-	-
H40	≤ 5	-	-	-	-	-	40	70
F24	≥ 0.2	240	300	min 180	15	12	-	-
H70	≤ 15	-	-	-	-	-	70	95
F29	≥ 0.2	290	360	min 250	6	-	-	-
H90	≤ 10	-	-	-	-	-	90	110
F36	≥ 0.2	360	-	min 320	-	-	-	-
H110	≤ 2	-	-	-	-	-	110	-

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TEMPER	Vickers HARDNESS		Rm (MPa)		Rp 0.2 (Mpa)	ELONGATION
	min	max	min	max		0.10 up to 2.5 mm A50 % min
Annealed	45	65	200	260	< 120	25
H12	75	105	260	320	> 250	10
H14.1	105	125	310	400	> 300	1