

Standard Designation

EN CW020A / UNS C10300

Chemical Composition

Cu	P [%]		
99.95	0.001-0.006		free of oxygen

Description / Applications

Cu-PHC is an oxygen-free copper, desoxidized with phosphorous. It is highly suitable for cold-forming and soft soldering. Applications: electrical devices, switching elements, connectors

Physical Properties¹⁾

Density	8.9 g/cm ³	Thermal expansion coefficient	17.7·10 ⁻⁶ /K
Electrical conductivity	58 m/Ω·mm ² 100 % IACS ²⁾	Modulus of elasticity	130 GPa ³⁾
Thermal conductivity	385 W/m·K		

¹⁾ Guideline values for soft temper, measured at room temperature³⁾ 1 GPa = 1 kN/mm²²⁾ IACS = International Annealed Copper Standard

Processing information

Weldability	very good	Stress corrosion cracking	none
Solderability	very good		

Mechanical properties

Temper	Tensile Strength Rm [MPa]	Yield Strength Rp0,2 [MPa]	Elongation A50 [%]	Hardness HV	Bendability ¹⁾			
					90° r/t ²⁾		180° r/t ²⁾	
					GW ³⁾	BW ⁴⁾	GW ³⁾	BW ⁴⁾
R200/H40	200 - 250	max. 100	min. 33	40 - 65	0	0	0	0
R220/H40	220 - 260	max. 140	min. 33	40 - 65	0	0	0	0
R240/H65	240 - 300	min. 180	min. 8	65 - 95	0	0	0.5	0.5
R290/H90	290 - 360	min. 250	min. 4	90 - 110	0	0	0.5	1.5
R360/H110	min. 360	min. 320	min. 2	min. 110	0	1.5	1	3

¹⁾ The r/t values are valid for a strip thickness up to 0.6 mm (without crack). The data refer to rolled-to-temper material and a width of the bending area of 5 mm. V-shape bend test according to ISO 7438

²⁾ r = inner radius, t = thickness³⁾ GW = good way⁴⁾ BW = bad way

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