



EMH-Copper Tubes in CuFe2P

CuFe2P is a high-copper alloy combining average electrical and thermal conductivity with average strength. Good hardening is achieved by finely dispersed iron precipitation in the structure.

Because of these properties this alloy is used for electronic devices such as contacts and circuit elements.

Chemical Composition *

Cu	balance
Fe	2.25 %
P	0.02 %

* Standard values in % by weight

Material Description

EN	CuFe2P, CW107C
UNS	C19400
DIN*	CuFe2P, 2.1310
BS*	not standardized
NF*	not standardized

* former national standards

Physical Properties *

Electrical conductivity

MS/m	35
% IACS	60

Thermal conductivity

W/(m*K)	260
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Thermal expansion coefficient

(0 – 300 °C) 10 ⁻⁶ /K	17.6
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Density

g/cm ³	8.91
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Modulus of elasticity

GPa	123
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* Standard values at room temperature
 1 GPa = 1 kN/mm²
 1 MS/m = 1 m/Ω · mm

Processing Properties

Forming

Machinability (CuZn39Pb3 = 100%)	25 %
Cold forming	excellent
Hot forming	fair

Joining

Resistance welding	good
Inert gas shielded arc welding	excellent
Hard soldering	excellent
Soft soldering	excellent

Surface Treatment

Polishing

mechanical	good
electrolytical	fair

Electroplating

good

Heat Treatment

Melting point	1,080 – 1,090 °C
Hot forming	800 – 900 °C
Soft annealing	450 – 700 °C, 1-3 h
Thermal stress-relieving	200 – 300 °C, 1-3 h

Corrosion Resistance

Pure copper and high-copper alloys generally show good corrosion resistance due to their inert character and are practically insensitive to stress corrosion cracking.

Mechanical Properties (attainable values, depending on the dimension and form)

Standard values	from (soft)	to (hard)
R _m [MPa]	300	550
R _{p 0.2} [MPa]	140	510
A ₅ [%]	25	3
HB	25	150

