Emil Müller GmbH
Metallwerk – Hespert
Tubes in Copper
and Copper-Alloys

EMH-Brass Tubes in CuZn20Al2As

CuZn20Al2As is a special brass with excellent corrosion resistance due to the addition of aluminium and arsenic. This material is primarily used for condenser tubes and finned tubes for river and domestic water applications**.**

Chemical Composition *

Cu	78 %
Zn	Rest
Al	2 %
As	0.04 %

* Standard values in % by weight

Material Description

EN	CuZn20Al2As, CW702R
UNS	C68700
DIN*	CuZn20Al, 2.0460
BS*	CZ110
NF*	Cu-Zn22Al

* former national standards

Physical Properties *

Electrical conductivity	
MS/m	12.5
% IACS	22

Thermal conductivity	
W/(m*K)	100

Thermal expansion coefficient	
(0 – 300 °C) 10^{-6}/K	19.0

Density	
g/cm³	8.3

Modulus of elasticity	
GPa	103

* Standard values at room temparature
1 GPa = 1 kN/mm²
1 MS/m =1 m/Ω • mm

Processing Properties

Forming

Machinability (CuZn39Pb3 = 100%)	30 %
Cold forming	fair
Hot forming	fair

Joining

Resistance welding	fair
Inert gas shielded arc welding	good
Hard soldering	fair
Soft soldering	poor

Surface Treatment

Polishing	
mechanical	excellent
electrolytical	excellent
Electroplating	excellent

Heat Treatment

Melting point	930 – 970 °C
Hot forming	750 – 820 °C
Soft annealing	700 – 750 °C, 1-3h
Thermal stress-relieving	550 – 600 °C, 1-3h

Corrosion Resistance

Special brass alloys have in general an excellent resistance to corrosion. This alloy has an excellent resistance as far as sea water is concerned and is also not prone to dezincification.

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

Standard values		from (soft)	to (hard)
R_m	[MPa]	340	430
$R_{p\,0,2}$	[MPa]	120	200
A_5	[%]	45	50
HB		65	95

Emil Müller GmbH Metallwerk – Hespert • An der Autobahn 1 • 51580 Reichshof-Hespert • Germany
Phone +49 - 2265 - 993 - 0 • Fax +49-2265-99 33 99 • info@mueller-hespert.de • www.mueller-hespert.de