



GICO.
Ghoshouni Industrial Co.



Material Datasheet
CuZn42
(CW510L)

CuZn42

Alloy with low lead content and optimised machinability.

Alloy with lead content less than 0.2% uses in the US market for which it is NSF372 certified. Good machinability due to chip removal makes LFB the standard alloy among materials with reduced lead content. Inserted in the 4MS “Positive List” it is used in the parts used in contact with drinking water.

MATERIAL DESIGNATION

International	EN	UNS	JIS
CuZn42	CW510N	C28500	-

Applications

Decoration as architectural panel sheets; structural, as heavy plates...

REFERENCE CHEMICAL COMPOSITION IN %

material	Cu	Pb	Fe	Ni	Sn	Al	Zn	Other
min	57	0	0	0	0	0	Rem.	0
max	59	0.2	0.3	0.3	0.3	0.05	Rem.	0.2

HEAT TREATMENT

Melting Range	870-900°C
Hot Working	630-800°C
Soft Annealing	450-550 °C ,Duration: 1 – 3 h
Thermal Stress Relieving	250-350°C ,Duration: 1 – 3 h

STRESS RELIEVING	ANNEALING
<p>Enables the redistribution of tensions induced by mechanical processing of cold plastic deformation, reducing the risk of stress corrosion cracking.</p> <p>The treatment consists of heating the items to 200°C - 250°C for 2 hours and cooling within the furnace.</p>	<p>Re-crystallizes the alloy, reducing its hardness and increasing its ductility. The temperature of the treatment varies from 450°C to 550°C for an amount of time relative to the required results. The high temperature can induce changes in the surface appearance and in the tolerance of the finished part.</p>

FABRICATION PROPERTIES

FORMING	
Forgeability Rating	90%
Machinability	60%
Cold Workability	fair
Hot Workability	Excellent

POLISHING	
Mechanical	Good
Electrolytic	Poor
Electroplating	Excellent

Microstructure
Two phase, Alpha and Beta

Physical properties			
Thermal Expansion Coefficient [10 ⁻⁶ /K]	Electrical Conductivity[% IACS]	Thermal Conductivity[W/(m.K)]	Density [g/cm ³]
21.2	24	121	8.39

Mechanical properties			
Tensile strength(Mpa)	Yield strength(Mpa)	Elastic modulus(Gpa)	Elongation in 2 inch
340	125	107	52

Weldability

Soldering	Brazing	Resistance butt-welding	gas shielded arc welding
excellent	excellent	good	fair