Ghoshouni Industrial Co.

Material Datasheet
CuZn39Pb3
(CW614N)

CuZn39Pb3

Standard alloy for machining with chip removal

It has excellent workability characteristics for chip removal. The balanced chemical composition guarantees reduced chip dimensions and optimal mechanical characteristics. It is used in taps, accessories, clamps and components in general.

MATERIAL DESIGNATION

International	EN	UNS	BS
CuZn39Pb3	CW614N	C38500	CZ121

Applications

Architectural extrusions, store fronts, thresholds and trim; hardware butts, hinges and lock bodies; industrial forgings.

REFERENCE CHEMICAL COMPOSITION IN %

material	Cu	Pb	Fe	Ni	Sn	Al	Zn	Other
min	57	2.5	0	0	0	0	Rem.	0
max	59	3.5	0.3	0.2	0.3	0.05	Rem.	0.2

HEAT TREATMENT

Melting Range	875-890 °C
Hot Working	625-725 °C
Soft Annealing	425-600 °C ,Duration: 1 – 3 h
Thermal Stress Relieving	160 – 280 °C ,Duration: 1 – 3 h

FABRICATION PROPERTIES

FORMING	
Forgeability Rating	100%
Machinability	90%
Cold Workability	Poor
Hot Workability	Excellent

POLISHING	
Mechanical	Good
Electrolytic	Poor
Electroplating	Excellent

Microstructure
Two phase, Alpha and Beta, with undisolved lead

Physical properties			
Thermal Expansion Coefficient [10-6/K]	Electrical Conductivity[% IACS]	Thermal Conductivity[W/(m.K)]	Density [g/cm3]
20.9	28	123	8.4

Mechanical properties M30 temper			
Tensile strength(Mpa)	Yield strength(Mpa)	Elastic modulus(Gpa)	Elongation in 2 inch
415	140	97	35

Weldability			
Soldering	Brazing	Resistance butt-welding	All other welding processes
excellent	good	fair	not recommended