Ghoshouni Industrial Co.

Material Datasheet
CuZn39Pb2
(CW612N)

CuZn39Pb2

Alloy for both machining and hot stamping rods

CuZn39Pb2 has a high content in copper, which enhances its performance in cold working and formability allied with excellent machinability properties, allowing a good chip removal due to the content in lead. Furthermore, it also has excellent hot working properties, which makes it ideal for parts that suffer a significant deformation in hot stamping process and need a posterior machining.

MATERIAL DESIGNATION

International	EN	UNS	JIS
CuZn39Pb2	CW612N	C37700	C3771

REFERENCE CHEMICAL COMPOSITION IN %

material	Cu	Pb	Fe	Ni	Sn	Al	Zn	Other
min	58	1.6	0	0	0	0	Rem.	0
max	60	2.5	0.3	0.3	0.3	0.05	Rem.	0.2

Applications

forgings and pressings of all kinds

HEAT TREATMENT

Melting Range	880 – 890 °C
Hot Working	650 – 750 °C
Soft Annealing	420 – 580 °C ,Duration: 1 – 3 h
Thermal Stress Relieving	160 – 280 °C ,Duration: 1 – 3 h

FABRICATION PROPERTIES

FORMING	
Forgeability Rating	100%
Machinability	85%
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	24		110	8.46

Mechanical properties M30 temper

Tensile strength(Mpa)	Yield strength(Mpa)	Elastic modulus(Gpa)	Elongation in 2 inch
360	140	108	45

Weldability

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