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Ghoshouni Industrial Co.



Material Datasheet
 CuZn36Pb3
(CW603N)

CuZn36Pb3

Alloy for machining

CuZn36Pb3 alloy has special characteristics for machining operations, allowing to obtain optimum results through free cutting operations. These characteristics are conferred by the content in lead, homogeneously dispersed along the microstructure. It also has a satisfactory behavior when cold and hot forming operations are required, due to its high content in copper.

MATERIAL DESIGNATION

International	EN	UNS	JIS
CuZn36Pb3	CW603N	C36000	-

Applications

Hardware:gears,pinions & Industrial: automatic high-speed screw-machine parts

REFERENCE CHEMICAL COMPOSITION IN %

material	Cu	Pb	Fe	Ni	Sn	Al	Zn	Other
min	60	2.5	0	0	0	0	Rem.	0
max	62	3.5	0.3	0.3	0.2	0.05	Rem.	0.2

HEAT TREATMENT

Melting Range	885-900°C
Hot Working	630-730 °C
Soft Annealing	450-600 °C ,Duration: 1 – 3 h
Thermal Stress Relieving	200-300°C ,Duration: 1 – 3 h

FABRICATION PROPERTIES

FORMING

Forgeability Rating	Good
Machinability	95%
Cold Workability	fair
Hot Workability	Excellent

POLISHING

Mechanical	Good
Electrolytic	Poor
Electroplating	Excellent

Microstructure

Two phase, Alpha and Beta, with undissolved lead

Physical properties

Thermal Expansion Coefficient [10 ⁻⁶ /K]	Electrical Conductivity[% IACS]	Thermal Conductivity[W/(m.K)]	Density [g/cm ³]
20.6	24	100	8.5

Mechanical properties M30 temper

Tensile strength(Mpa)	Yield strength(Mpa)	Elastic modulus(Gpa)	Elongation in 2 inch
340	125	102	50

Weldability

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