

Material Datasheet: CuZn35Pb2 (CW601N)

CuZn35Pb2

Alloy for machining with good cold workability

CuZn35Pb2 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 good behavior when cold operations are required, due to its high content in copper.

MATERIAL DE	SIGNATION				
ASBW	International	EN	UNS	JIS	Further Restrictions
B12	CuZn35Pb2	CW601N	C34200 C34500	C3601	

REFEREN	REFERENCE CHEMICAL COMPOSITION IN % (MAIN ELEMENTS) *									
Material	Cu	Pb	Ni	Fe	As	Sn	Al	Bi	Zn	Other elements
B12	62,5	2,0	0,2	0,1	-	0,1	0,03	-	Rem.	≤ 0.1 %

^{*} Deviations from these values may occur within the restrictions of the relevant standard specifications.

FABRICATION PROPERTIES

FORMING

Machinability (CuZn39Pb3 = 100 %)	85%
Cold Workability	Good
Hot Workability	Good

IOINING

Resistance Welding (Butt Welding)	Fair
Inert Gas Shielded Arc Welding	Not Recommended
Gas Welding (Most Commonly Oxyacetylene)	Not Recommended
Hard Soldering	Fair
Soft Soldering	Excellent
Brazing	Fair

POLISHING

Mechanical	Good
Electrolytic	Poor
Electroplating	Excellent

HEAT TREATMENT	
Melting Range	880 - 900 °C
Hot Working	680 - 780 °C
Soft Annealing	420 - 630 °C Duration: 1 - 3 h
Thermal Stress Relieving	160 – 280 °C Duration: 1 – 3 h

PRODUCT STANDARDS	
Rod	EN 12164
Section	EN 12167

CORROSION RESISTANCE

Machining brass is quite resistant to organic substances and to neutral or alkaline compounds. In comparison, homogeneous α -brass has a much more satisfactory corrosion resistance due to its microstructure. As for the stress corrosion cracking and dezincification, specially under conditions as warm, acidic waters and ammoniacal atmospheres, they should be taken into consideration, even more when the material is not under a stress relieved condition.

Physical properties*									
Material Density [g/cm³]	Electrical Conductivity [MS/m] [% IACS]		Thermal Conductivity [W/(m.K)]	Thermal Expansion Coefficient $(0 - 300 ^{\circ}\text{C})$ $[10^{-6}/\text{K}]$	Modulus of Elasticity [GPa]				
8,48	14,66	26	116	21,5	108				

^{*} Refence values at room temperature

Mechanical properties

Round r	Round rods/polygonal rods acc. to EN 12164											
	Dian	actor	Width	Width across Tensile strength Yield strength		trength		Elongation	1	Hardness		
Temper	Diaii	ietei	fla	its	Rm	Rp	0.2	A100	A11.3	Α	Н	IB
remper	from	to	from	to	MPa	MPa	MPa	[%]	[%]	[%]		
	[mm]	[mm]	[mm]	[mm]	min.	min.	max.	min.	min.	min.	min.	max.
М	a	.II	a	II	as ma	nufactur	ed – witho	out specif	ied mechar	nical prop	erties	
R340	10	80	10	60	340	-	280	-	15	20	-	-
H070	10	80	10	60	-	-	-	-	-	-	70	120
R400	2	25	2	20	400	200	-	4	8	12	-	-
H100	2	25	2	20	-	-	-	-	-	-	100	140
R480	2	14	2	10	480	350	-	3	5	8	-	-
H125	2	14	2	10	-	-	-	-	-	-	125	-

Rectang	Rectangular rods acc. to EN 12167										
	Thickness		Tensile strength Yield strength				Elongation	ı	Hardness		
Temper	Tille	KIIC33	Rm	Rp	0.2	A100	A11.3	Α	Н	IB	
i cilipei	from	to	MPa	MPa	MPa	[%]	[%]	[%]			
	[mm]	[mm]	min.	min.	max.	min.	min.	min.	min.	max.	
M	á	all	as manufactured - without specified me					chanical properties			
R360	6	40	360	-	320	-	15	20	-	-	
H090	6	40	-	-	-	-	-	-	90	125	
R430	3	20	430	220	-	6	8	10	-	-	
H110	3	20	-	-	-	-	-	-	110	160	
R500	3	10	500	350	-	2	5	8	-	-	
H135	3	10	-	-	_	-	_	_	135	_	

FINISHING AND PA	ACKAGING
Bar ends	Marked according to customer's specification
Bar surface	Standard machining rods: bright, stripped surface
Packaging	Size range up to 10 mm: The rods are packed loose in a wooden box and protected with oiled paper (net weight of approx. 500 kg). Each box is strapped with 4 steel straps to ensure material integrity during shipping. Size range > 10 mm: ASBW machining rods are supplied by standard in bundles either of approximately 1.000 kg or 500 kg. Different bundle weights are also possible upon costumer's request. Each bundle is steel strapped three times on cardboard and both ends are
Identification	protected with litter, to ensure the material integrity during the transportation Adhesive label on bundle strap: customer - number of customer's order - EN Standard of the material - ASBW material code and LOT number ensuring production tracking - rod length - ASBW's PO number - ASBW's Quality Approval Seal

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For further detailing on technical aspects such as material condition, machining, mechanical data, temper selection through contact to our technical personal.

