

Material Datasheet: CuZn40Pb2 (CW617N)

MACHINING / HOT STAMPING BRASS RODS

CuZn40Pb2

Standard alloy for stamping rods CuZn40Pb2 is the benchmark material for hot stamping brass rods. This alloy perfectly combines hot stamping and machining properties, making it the best solution for parts of high complexity that require demanding machining operations after stamping.

It is also perfect for producing parts that only require free machining operations.

MATERIAL DE	SIGNATION				
ASBW	International	EN	UNS	JIS	Further Restrictions**
B13	CuZn40Pb2	CW617N	C37800 C38000	C3603 C3604	4 MS Common Approach, Part B

REFEREN	CE CHE	MICAL	СОМРО	SITION	IN % (M	AIN ELE	MENTS) *		
Material	Cu	Pb	Ni	Fe	As	Sn	AI	Bi	Zn	Other elements
B13**	58,0	2,0	0,2	0,2	-	0,2	0,03	-	Rem.	≤ 0.2 %

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

** ASBW / B13 complies with the restrictions to the chemical composition of the signed materials in the table, according to the specified in the 4 MS Common Composition List, on customer request.

FABRICATION PROPERTIES

Soft Soldering

FORMING Machinability (CuZn39Pb3 = 100 %) 95 % Cold Workability Poor Hot Workability Excellent **IOINING Resistance Welding (Butt Welding)** Fair Inert Gas Shielded Arc Welding Not Recommended Gas Welding (Most Commonly Oxyacetylene) Not Recommended Hard Soldering Fair

BrazingFairPOLISHINGGoodMechanicalGoodElectrolyticPoorElectroplatingExcellent

Excellent

HEAT TREATMENT	
Melting Range	870 - 900 °C
Hot Working	630 – 780 °C
Soft Annealing	420 – 580 °C Duration: 1 – 3 h
Thermal Stress Relieving	160 - 280 ℃ Duration: 1 - 3 h

PRODUCT STANDARDS			
Rod	EN 12164 EN 12165		
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 °C) [10 ⁻⁶ /K]	Modulus of Elasticity [GPa]		
8,43	14,94	25	114	20,8	97		

* Refence values at room temperature

Mechanical properties												
Round r	Round rods/polygonal rods acc. to EN 12164											
	Diameter Width across				Tensile strength	trength Yield strength			Elongation	Hard	lness	
Temper	Diali	letei	fla	its	Rm	Rp0.2		A100	A100 A11.3 A		HB	
remper	from [mm]	to [mm]	from [mm]	to [mm]	MPa min.	MPa min.	MPa max.	[%] min.	[%] min.	[%] min.	min.	max.
М	a		a	.11	as manufactured - without specified mechanical properties				erties			
R360	6	80	5	60	360	-	350	-	15	20	-	-
H090	6	80	5	60	-	-	-	-	-	-	90	125
R430	2	60	2	40	430	220	-	6	8	10	-	-
H110	2	60	2	40	-	-	_	-	-	-	110	160
R500	2	14	2	10	500	350	-	-	3	5	-	-
H135	2	14	2	10	-	_	_	_	_	-	135	-

Rectang	ular rods							ac	c. to EN	12167
	Thic	kness	Tensile strength	Yield s	trength		Elongation		Hardness	
Temper		KIIC55	Rm	Rp	0.2	A100 A11.3 A		А	HB	
remper	from	to	MPa	MPa	MPa	[%]	[%]	[%]		
	[mm]	[mm]	min.	min.	max.	min.	min.	min.	min.	max.
М	ā	all	as manufactured – without sp				ut specified mechanical 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	-

Rods				acc. to EN 12165		
	Diame		Hardness			
Tompor	Didilite		н	IB		
Temper	from [mm]	to [mm]	min.	max.		
М	all		As manı	ıfactured		
H080	8	80	80	125		

FINISHING AND	PACKAGING
Bar ends	Marked according to customer's specification
Bar surface	Standard machining rods: bright, stripped surface
	Standard stamping rods: Dark and uniform 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 protected with litter, to ensure the material integrity during the transportation
Identification	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

The technical information within this datasheet is provided by **ASBW** without any surcharge. The end use of this content is up to the user discretion and risk. For further detailing on technical aspects such as material condition, machining, mechanical data, temper selection through contact to our technical personal.



BARBOSA WORLD BRASS, S.A

Main office and factory: Rua de Sousanil, 476, 4525-100 Canedo VFR, Santa Maria da Feira - Portugal Phone: +351 227 637 040 Email: asbw@asbw.pt NIPC: 515 557 552 Social Capital: € 350.000