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DATA SHEET:
39Pb3 CW614N

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FREE MACHINING



**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.

NAME OF ALLOY

UNI EN: CW614N - CuZn39Pb3 **ASTM:** C38500 **DIN:** 2.0401 **BS:** CZ121 **GOST:** LS58-3

CHEMICAL COMPOSITION UNI EN 12164 ED.2016

Cu	Pb	Sn	Fe	Ni*	Al	Si*	Zn	Other elements
min. 57.0 max. 59.0 %	2.5 3.5 %	≤0.3 %	≤0.3 %	≤0.2 %	≤0.05 %	≤0.03 %	difference	≤0.2 %

*Limitation according 4MS. Elements not listed must be ≤0.02 %.
Group of restriction of the surface in contact with drinking water: C,D.

HEAT TREATMENTS

STRESS RELIEVING

Enables the redistribution of tensions induced by mechanical processing of cold plastic deformation, reducing the risk of stress corrosion cracking. The treatment consists of heating the items to 200°C - 250°C for 2 hours and cooling within the furnace. The validation of the stress relieving treatment can be performed with the ISO 6957 test.

ANNEALING

Re-crystallizes the alloy, reducing its hardness and increasing its ductility. The temperature of the treatment varies from 450°C to 550°C for an amount of time relative to the required results. The high temperature can induce changes in the surface appearance and in the tolerance of the finished part.

MECHANICAL PROPERTIES UNI EN 12164 ED.2016

Condition of material	KEY in mm		Hardness HB*		Rm	Rp _{0.2} N/mm ²		Elongation %	
	from	to (included)	min.	max.	min.	min.	max.	min.	
M	All		As a product						
R360	6	60	-	-	360	-	350	20	
H090	6	60	90	125	-	-	-	-	
R430	2	40	-	-	430	220	-	10	
H110	2	40	110	160	-	-	-	-	
R500	2	10	-	-	500	350	-	5	
H135	2	10	135	-	-	-	-	-	

*the hardness value is determined in the mid-range
The standard condition produced by Almag is R500 from Ø > 6 to Ø < 12 and R430 from Ø > 12 for Rm, or H110 for hardness. Any other conditions must be requested when ordering - subject to feasibility request.

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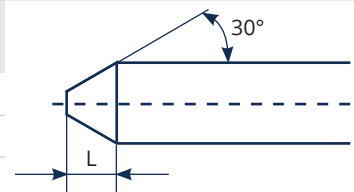


TECHNOLOGICAL PROPERTIES		low excellent	
Structure	$\alpha+\beta$	Machinability	
Density	8.4 kg/cm ³	Weldability	
Electrical conductivity	28% IACS	Hot forming	
Coeff. of thermal expansion	20.9 10 ⁻⁶ /K	Cold forming	
Thermal conductivity*	123 W/(m K)	Corrosion resistance**	Not resistant
Specific heat	380 J/(kg K)		
Elasticity module	105 kN/mm ²	*at room temperature **use care to ascertain compatibility with chemical substances	
Melting point	875-890 °C		

DIMENSIONS, TOLERANCES, AND STRAIGHTNESS UNI EN 12164 ED.2016			
HEXAGONAL and SQUARE			
Nominal key (mm)		Tolerance mm	
from	to included		
6	10	0 - 0.09	
10	18	0 - 0.11	
18	30	0 - 0.13	
30	50	0 - 0.16	
50	60	0 - 0.19	

Key (mm)		Length of bar (mm)	Tolerance (mm)	Deviation from straightness in mm			
				Key (mm)	Every 400 mm	Every m of length L ≥ 1	
2	30	3000 o 4000	+/- 50	Hexagonal and square section bar			
30	50	3000 o 4000	+/- 100				
50	80	3000	+/- 100	10	50	0.6	1.5 x L

BAR FINISHING AND PACKAGING					
Key mm		Chamfer Length L mm		Tip Length L mm	
5	10	0.2	1.5	2	7
10	20	0.2	2	3	10
20	30	0.2	3	4	12



Unless otherwise specified by the buyer, the shape of the ends of products larger than 30 mm is up to the supplier

Ends of hexagonal bars	finishing with chamfer and cut
Bar surface	pickled
Packaging	1000 kg bundle - 3/5 metal straps different bundle packagings and quantities are possible upon request
Identification	adhesive label on bundle strap
Stress relieving	the polygonal bar was subjected to stress relieving treatment



COMPANY WITH
MANAGEMENT SYSTEM
CERTIFIED BY DNV GL
= ISO 9001 =
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