



METALLURGICA
SAN MARCO

DATA SHEET: **CW610N**

HOT FORGING

ALLOY: CW610N

Muntz Metal ad leaded alloy for hot
stamping

ALLOY DESIGNATION

UNIEN: CW610N - CuZn39Pb0.5	ASTM: C36500	DIN: 2.0372	BS: CZ123-CZ137	GOST: LS60-1
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CHEMICAL COMPOSITION UNI EN12165 ED.2016

Cu	Pb	Sn	Fe	Ni*	Al	Zn	Other elements
min 59.0% max 60.5%	0,2% 0,8%	≤0.2 %	≤0.2 %	≤0.3 %	≤0.05 %	difference	≤0.2 %

HEAT TREATMENTS

STRESS RELIEVING

It specifically allows redistribution of tension induced by machining or cold plastic deformation, reducing the risk of stress corrosion cracking.

TREATMENT: heating of parts at 200°C to 250°C for 2 hours and cooling within the furnace. Validation of stress relief treatment can be performed with the ISO 6957 test.

OTHER TREATMENTS

Other heat treatments are not required

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TECHNOLOGICAL PROPERTIES

Structure	Density	Electrical conductivity	Coeff. of thermal expansion	Thermal conductivity*	Specific heat	Elasticity module	Melting point
$\alpha+\beta$	8.4 Kg/dm ³	28% IACS	20.8 10 ⁻⁶ K	123 W/(m K)	380 J/(kg K)	105 N/mm ²	885-900 °C

low ○ ○ ○ ○ ○ ○ ○ ○ excellent

Machinability: ● ● ○ ○ ○ ○ ○ ○

Weldability: ● ● ● ○ ○ ○ ○

Hot forming: ● ● ● ○ ○ ○ ○

Cold Forming: ● ● ● ○ ○ ○ ○ ○

Corrosion resistance:** ○ ○ ○ ○ ○ ○ ○ ○

*at room temperature.

**compatibility with chemical substances should be carefully checked.

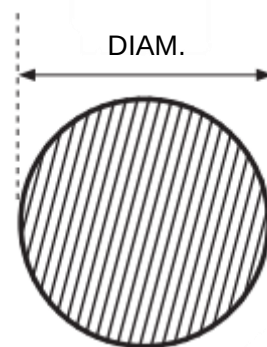
MECHANICAL PROPERTIES UNI EN12165 ED.2016

Condition of material	Diameter in mm		Hardness HB*	
	from	to (included)	min.	max
M	ALL		AS MANUFACTURED	
H070	8	120	70	100

Special hardness values must be defined when ordering.

Rm N/mm ²	Rp0.2 N/mm ²	A%
340-420*	200-240*	23-43*

Values purely indicative.



ALLOY: CW509L

Low lead alloy for hot stamping

DIMENSIONS, TOLERANCES, AND STRAIGHTNESS UNI EN 12165 ED 2016

Nominal diameter (mm)		Tolerances		Diameter (mm)		Length of bar	Tolerance (mm)
		Class A	Class B				
10	18	+/- 0.25	+/- 0.14	10	30	3.0 – 5.0	+/- 100
18	30	+/- 0.30	+/- 0.17	30	50	3.0 – 5.0	+/- 200
30	50	+/- 0.60	+/- 0.20	50	80	3.0	+/- 300
50	80	+/- 0.70	+/- 0.37				
80	120	+/- 2					

The standard "Calibrated Extrudate" product is made in Class B up to and including Ø80 mm.

Diameter (mm)		Deviation from straightness in mm	
		Every 400 mm	Every m of length $L \geq 1$
10	60	1.5	$3.0 \times L$

FINISHING AND PACKAGING

Bar ends	Finishing with saw cut.
Bar surface	Not pickled.
Packaging	1000 kg bundle – 3/5 metal straps. Different bundle packaging and quantities are possible on specific request.
Identification	Adhesive label on strap or bar ends.

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TECHNICAL NOTES

The excellent hot plastic deformation characteristics of Muntz Metal are combined with the machinability conferred by the significant amount of lead. The high copper content provides moderate corrosion resistance, along with good mechanical and cold deformability properties.