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DATA SHEET:
37P C27451

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HOT FORGING

The logo for HUG, featuring the word "HUG" in a bold, white, sans-serif font, enclosed within a white circular border.

HUG

Dezincification resistant alloy with low lead content.

Special alloy resistant to dezincification and excellent for hot forging. The reduced Lead content, less than 0.25%, allows its use in the USA for drinking water applications according to the limitations imposed since January 2014. The 37P alloy is confirmed by the ASTM legislation, but not by the European one. Its composition, free of contaminants such as silicon and antimony, makes the processing waste compatible and mixable with traditional lead alloys.

NAME OF ALLOY

ASTM: C27451 - CuZn37P

NORMATIVE: B927/B927M

CHEMICAL COMPOSITION ASTM

Cu	Pb	Fe	P	Zn	Other elements
min. 61.0 max. 65.0 %	≤0.25 %	≤0.35 %	0.05 0.20 %	difference	≤0.20 %

Cu + sum of the named elements 99.5% minimum.

HEAT TREATMENTS

STRESS RELIEVING

Enables the redistribution of tensions induced by mechanical processing or 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.

SOLUBILIZATION OF RESIDUAL β PHASE

To improve the corrosion resistance of the alloy a thermal treatment between 500°C and 550°C for 2 hours with cooling outside the furnace is required. This treatment after hot stamping enhances the solubilization of the residual beta phase to grant material resistant to dezincification.

The omission of this treatment impairs the anti-dezincification performance that the material is designed for.

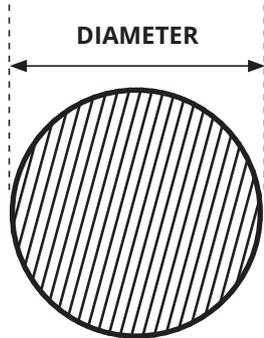
TECHNOLOGICAL PROPERTIES

low excellent

Structure	α	Machinability	
Density	8.6 kg/cm ²	Weldability	
Electrical conductivity	23% IACS	Hot forming	
Coeff. of thermal expansion	19.7 10 ⁻⁶ /K	Cold forming	
Thermal conductivity*	116 W/(m K)	Corrosion resistance**	<100 μm
Specific heat	377 J/(kg K)		
Elasticity module	103 kN/mm ²		
Melting point	895-916 °C		

*at room temperature

**use care to ascertain compatibility with chemical substances



MECHANICAL PROPERTIES ASTM

Condition of material	Diameter in mm		Hardness HB	
	from	to (included)	min.	max
M	All		As a product	
H080	8	120	80	170

Any special hardness values must be defined when ordering

Rm N/mm ²	Rp _{0.2} N/mm ²	A%
400-450*	290-340*	20-30*

* The values shown are not regulated and are only indicative.

DIMENSIONS, TOLERANCES, AND STRAIGHTNESS

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 "Extruded calibrated" product is produced in Class B up to and including Ø80 mm
Semi-finished products over Ø45 mm can be supplied in the "pressed" and "rolled" forms with Class A tolerance

Diameter (mm)		Deviation from straightness in mm	
		Every 400 mm	Every m of length L ≥ 1
10	60	1.5	3.0 x L

BAR FINISHING AND PACKAGING

Bar ends	finishing with saw cut and chamfer
Bar surface	not pickled
Packaging	1000 kg bundle - 3/5 metal straps different bundle packagings and quantities are possible upon request
Identification	adhesive label on bundle strap

COMPANY WITH
MANAGEMENT SYSTEM
CERTIFIED BY DNV GL
= ISO 9001 =
= ISO 14001 =
= OHSAS 18001 =



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