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**DATA SHEET:**  
**N.B. CW719R**

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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**

**Special alloy with high mechanical and corrosion resistance.**

The NAVAL BRASS alloy is the classic material for naval use. Easily deformable when hot, it lends itself well to molding. It has high mechanical resistance and excellent resistance to corrosion at sea and in fresh water. Find applications in different areas such as heat exchangers, valves, condensers, etc. The modest presence of lead gives the alloy a minimum workability due to chip removal.

## NAME OF ALLOY

UNI EN: CW719R - CuZn39Sn1

## CHEMICAL COMPOSITION UNI EN 12165 ED.2016

Cu	Pb	Sn	Fe	Ni	Zn	Other elements
min. 59.0 max 61.0 %	≤0.2 %	0.5 1.0 %	≤0.1 %	≤0.2 %	difference	≤0.2 %

## HEAT TREATMENTS

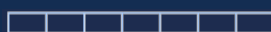
### STRESS RELIEVING





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.

### OTHER TREATMENTS

No other heat treatments are required.

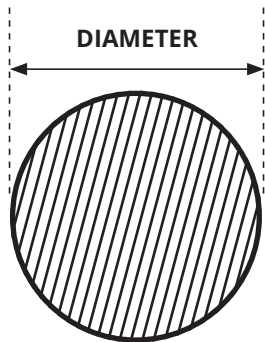
## TECHNOLOGICAL PROPERTIES

low  excellent

Structure	$\alpha+\beta$	Machinability	
Density	8.3 kg/cm <sup>3</sup>	Weldability	
Electrical conductivity	18.0% IACS	Hot forming	
Coeff. of thermal expansion	20.7 10 <sup>-6</sup> /K	Cold forming	
Thermal conductivity*	50 W/(m K)	Corrosion resistance**	<100 μm
Specific heat	380 J/(kg K)		
Elasticity module	93 kN/mm <sup>2</sup>		
Melting point	885-900 °C		

\*at room temperature

\*\*use care to ascertain compatibility with chemical substances



## MECHANICAL PROPERTIES UNI EN 12165 ED.2016

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

Any special hardness values must be defined when ordering

Rm N/mm <sup>2</sup>	Rp <sub>0.2</sub> N/mm <sup>2</sup>	A%
380-420*	180-220*	16-20*

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

## 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 "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	3.0	6.0 x L

## BAR FINISHING AND PACKAGING

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

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



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