CW601N - CuZn35Pb2

Excellent machinabilty, good hot and cold working properties

Available in bars / hollow bars / wire

All data are reference values and are not to be used as a basis for constructive stress calculation.

Designations

EN 12164 Bars

EN 12166 Wire

EN 12167 Profiles and edged bars

EN 12168 Hollow bars

ASTM B453 (UNS C34500)

Chemical composition

Cu	62.0-63.5	Weight-%
Pb	1.6-2.5	Weight-%
Zn	Rest	Weight-%

Workability

Machinability	■	■	■	■	
Hot Forming	■	■			
Cold Forming	■	■	■		
Mechanical Polishing	■	■	■	■	
Soft Solderability	■	■	■	■	■
Hard Solderability	■	■	■	■	

Physical properties

Density (20°C)	8.46	g/cm³
Fusion temperature	885-910	°C
Thermal conductivity	116	W/mK
Thermal capacity	380	J/kgK
Electrical conductivity	14 24	MS/m % IACS
Young's modulus (20°C, annealed)	105	GPa
Thermal expansion coefficient	20.4	$10^{-6}K^{-1}$

Microstructure

Heterogeneous structure of α- and β'-mixed crystals. Lead is insoluble in this alloy and precipitates in finely distributed form at the grain boundaries. Lead has a grain refining effect on the microstructure and improves machinability.

Corrosion resistance

Depending on the material condition, the area of application, the medium and heat treatment, CW601N is not resistant to acids and humid ammonia, especially in the non-stress-relieved state (stress corrosion cracking).

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Application examples

Fittings, sanitary industry

Shaped turned parts

Electrical engineering

Mechanical and vehicle engineering

Mechanical properties at room temperature

EN 12164 (Rod for free machining purposes)										
Condition	Diameter mm da - a	Width across-flats mm da - a	Ultimate Tensile Strength R_m MPa min.	Yield Strength $R_{p\,0,2}$ MPa min.	Yield Strength $R_{p\,0,2}$ MPa max.	Elongation A_{100mm} % min.	Elongation $A_{11,3}$ % min.	Elongation A % min.	Hardness Brinell HBW min.	Hardness Brinell HBW max.
M	all dimensions		as manufactured							
R340	10 - 80	10 - 60	340		280			20		
H070									70	120
R400	2 - 25	2 - 20	400	200		4	8	12		
H100									100	140
R480	2-14	2 - 10	480	350		3	5	8		
H125									125	

EN 12166 (Wire for general purposes)									
Condition	Diameter mm da - a	Ultimate Tensile Strength R_m MPa min.	Yield Strength $R_{p\,0,2}$ MPa min.	Yield Strength $R_{p\,0,2}$ MPa max.	Elongation A_{100mm} % min.	Elongation $A_{11,3}$ % min.	Elongation A % min.	Hardness Brinell HBW min.	Hardness Brinell HBW max.
M	all	as manufactured							
R340	0,5 - 20	340		280	10	15	20		
H080	1,5 - 20							80	130
R400	0,5 - 14	400	200		4	8	12		
H100	1,5 - 14							100	150
R480	0,5 - 8	480	350			2	5		
H135	1,5 - 8							135	

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EN 12167 (Profile sand bares for general purposes)									
Condition	Diameter mm da - a	Ultimate Tensile Strength R_m MPa min.	Yield Strength $R_{p\,0,2}$ MPa min.	Yield Strength $R_{p\,0,2}$ MPa max.	Elongation A_{100mm} % min.	Elongation $A_{11,3}$ % min.	Elongation A % min.	Hardness Brinell HBW min.	Hardness Brinell HBW max.
M	all	as manufactured							
R340	3 - 20	340		280	10	15	20		
H070								70	120
R400	3 - 10	400	200		4	8	12		
H100								100	140
R480	3 - 10	480	350		2	5	8		
H125								125	

EN 12168 (Hollow rod for free machining purposes)									
Condition	Diameter mm da - a	Ultimate Tensile Strength R_m MPa min.	Yield Strength $R_{p\,0,2}$ MPa min.	Yield Strength $R_{p\,0,2}$ MPa max.	Elongation A % min.	Hardness Brinell HBW min.	Hardness Brinell HBW max.	Hardness Vickers HV min.	Hardness Vickers HV max.
M	all	as manufactured							
R340	2 - 20	340		280	20				
H070						70	120	80	130
R400	2 - 10	400	200		12				
H100						100	140	110	150
R480	2 - 7	480	350		8				
H125						125		135	

This data sheet is for general information only and is not subject to revision.

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