

CW625N - CuZn35Pb1,5AlAs

The alloy shows after heat treatment a good resistance to dezincification, very good machinability, very good hot working properties
Available in bars / hollow bars

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

Designations

EN 12164 Bars
EN 12165 Forgings
EN 12167 Profiles and edged bars
EN 12168 Hollow bars
EN 12420 Forgings

Chemical composition

Cu	62.0-64.0	Weight-%
Pb	1.2-1.6	Weight-%
Al	0.5-0.7	Weight-%
As	0.02-0.15	Weight-%
Zn	Rest	Weight-%

Workability

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

* see also Corrosion resistance

Physical properties

Density (20°C)	8.44	g/cm ³
Fusion temperature	875-900	°C
Thermal conductivity	93	W/mK
Thermal capacity	380	J/kgK
Electrical conductivity	12.5 21.3	MS/m % IACS
Young's modulus (20°C, annealed)	100	GPa
Thermal expansion coefficient	21.3	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.

Corrosion resistance

Due to its Aluminium content the alloy CW625N show generally a good corrosion resistance. Minor additions of arsenic result in resistance to dezincification.
Particular care must be taken when working with increased temperature (>600°C) as in soldering as this could deteriorate the corrosion resistance of the alloy.

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Application examples

Fittings, sanitary industry

Shaped turned parts

Forged parts

Mechanical properties at room temperature

EN 12164 (Rod for free machining purposes)										
Condition	Diameter	Width across- flats	Ultimate Tensile Strength R _m	Yield Strength R _{p 0,2}		Elongation			Hardness Brinell	
	mm	mm	MPa	MPa		A _{100mm}	A _{11,3}	A	HBW	
	da - a	da - a	min.	min.	max.	%	%	%	min.	max.
	min.	min.	min.	min.	min.	min.	min.	min.	min.	max.
M	all dimensions		as manufactured							
R280	6 - 80	5 - 60	280		200		25	30		
H070								70	110	
R320	6 - 60	5 - 50	320	200			15	20		
H090								90	135	
R400	4-15	4 - 13	400	250			5	8		
H105								105		

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}		Elongation			Hardness Brinell	
					A _{100mm}	A _{11,3}	A		
			MPa		%	%	%	HBW	
			min.	max.	min.	min.	min.	min.	max.
M	all	as manufactured							
R280	3 - 20	280		200	20	25	30		
H070								70	100
R320	3 - 20	320	200		10	15	20		
H090								90	135
R400	3 - 10	400	250		2	5	8		
H105								105	

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EN 12168 (Hollow rod for free machining purposes)									
Condition	Diameter mm da - a	Ultimate Tensile Strength R _m MPa	Yield Strength R _{p0,2} MPa		Elongatio n A %	Hardness Brinell HBW		Hardness Vickers HV	
		min.	min.	max.	min.	min.	max.	min.	max.
M	all	as manufactured							
R280	2 - all	280		200	30				
H070						70	110	80	120
R320	2 - 20	320	200		20				
H090						90	135	100	145
R400	2 - 8	400	250		8				
H105						105		115	

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