

sarbak



TECHNICAL DATA SHEET

CW510L - CuZn42

S510 - S510DW
RODS / HOLLOW RODS

Product Code	EN Symbol	EN No	ASTM		Cu	Zn	Pb	Sn	Fe	Ni	Al	Si	Others Total
S510	CuZn42	CW510L	C28500	Min (%)	57,0	Rem.	-	-	-	-	-	-	-
				Max (%)	59,0	Rem.	0,2	0,3	0,3	0,3	0,05	-	0,2
(*) S510DW	CuZn42-DW	CW510L-DW	C28500	Min (%)	57,0	Rem.	-	-	-	-	-	-	-
				Max (%)	59,0	Rem.	0,2	0,3	0,3	0,2	0,05	0,02	0,2

(*) Each of the other elements < 0,02 %

Features And Applications

Chips and parts can be mixed with MS58 group alloys. Also this alloy compliance with RoHS II and REACH directives. CW510L-DW alloy be used suitable for 4MS vs UBA list for drinking water applications.

4MS and UBA Hygienic list group for CW510L-DW alloy: B, C, D

Area of Usage

Construction, automotive, gas, food, health, aviation, electrical, electronics, plumbing, drinking water products, accessories and fittings. Also this alloy suitable for drinking water application in USA and Canada Markets because of the lead content below 0.2%.

TECHNICAL SPECIFICATIONS

Structure	$\alpha+\beta$	Hot Forming	650-750 °C
Machinability	% 70	Soft Annealing	450-550 °C
Density	8,37 g/cm ³	Soft Annealing Time	1-3 hours
Electrical Conductivity	18 MS/m, 31 %IACS	Stress Relieving	250-350 °C
Thermal Conductivity	139 W/(m·K)	Stress Relieving Time	1-3 hours
Elasticity Module	85 kN/mm ²		
Coeff. of Thermal Expansion	21,7 10 ⁻⁶ /K		
Melting Point	870-900 °C		

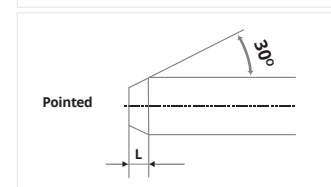
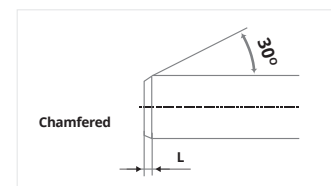
Range of Products

S510L and S510L-DW alloys can be produced in our extrusion and cold drawing unit as rods, hollows and profiles suitable for both forging and machining. Please contact us for other technical informations.

INDICATIVE SHAPED ENDS DIMENSIONS

Nominal Diameter or Width		Type A - Chamfer Length (L)		Type B - Point Length (L)	
Across-flats (mm)		Min (mm)	Max (mm)	Min (mm)	Max (mm)
Over	Up to and including				
5	10	0,2	1,5	2	7
10	20	0,2	2	3	10
20	30	0,2	3	4	12

Unless otherwise specified by the buyer, the shape of the ends of products larger than 30 mm is up to the supplier.



Nominal Diameter or Width Across-flats (mm)		Preferred (available) Lengths (mm)	Tolerance on Length (mm)
Over	Up to and including		
6 Inc.	30	3.000 - 4.000	±50
30	80	3.000 - 4.000	±100

Stress Relieving The polygonal rods and hollow rods are subjected to stress relieving treatment

Packaging 500 or 1000 kg bundle - 3/5 metal straps different bundle packagings, up to 10 mm dimension products are packed with wooden case

EN 12164 - Rods for Free Machining

Material Condition	Nominal Diameter (mm)		Width Across-flats (mm)		Tensile Strength R _m N/mm ² (MPa) Min	0,2 % Proof Strength N/mm ² (MPa)		Elongation			Hardness (HBW)	
	Over	Up to and inc.	Over	Up to and inc.		Min	Max	A _{100mm} (%)	A _{11,3} (%)	A (%)	Min	Max
	As manufactured											
M	All		All		As manufactured							
R360	6	80	6	55	360	-	320	-	15	20	-	-
H090	6	80	6	55	-	-	-	-	-	-	90	125
R430	6	40	6	35	430	220	-	6	8	10	-	-
H110	6	40	6	35	-	-	-	-	-	-	110	160
R500	6	14	6	10	500	350	-	-	3	5	-	-
H135	6	14	6	10	-	-	-	-	-	-	135	-

EN 12168 - Hollow Rods for Free Machining

Material Condition	Wall Thickness (mm)		Tensile Strength R _m N/mm ² (MPa) Min	0,2 % Proof Strength N/mm ² (MPa)		Elongation A (%) Min	Hardness (HBW)		Hardness (HV)		
	Over	Up to and inc.		Min	Max		Min	Max	Min	Max	
	As manufactured										
M	All		As manufactured								
R360	3	40	360	-	320	20	-	-	-	-	
H090	3	40	-	-	-	-	90	125	100	135	
R430	3	15	430	220	-	10	-	-	-	-	
H110	3	15	-	-	-	-	110	160	120	170	
R500	3	7	500	350	-	8	-	-	-	-	
H135	3	7	-	-	-	-	135	-	145	-	

EN 12165 - Wrought and Unwrought Forging Stocks

Material Condition	Nominal Diameter (mm)		Hardness (HBW)	
	Over	Up to and including	Min	Max
	As manufactured			
M	All		As manufactured	
H090	8	80	90	125

STANDARD		EN 12164			EN 12165		EN 12168					
Dimension Range		Round Rod		Hexagonal, Square	Round Rod		Round and Hexagonal Hollow Rod, Outer Dim. Tol.			Hole Tolerance Round		Hole Tol. Hexagonal
Over	Up to & inc.	Class A	Class B	Rod	Class A	Class B	Class A	Class B	Class C	Class A	Class B	-
5	6	0 -0,05	0 -0,03	0 -0,08	-	-	-	-	-	-	-	-
6	10	0 -0,06	0 -0,036	0 -0,09	±0,25	±0,14	-	-	-	-	-	-
10	13	0 -0,07	0 -0,43	0 -0,11	±0,25	±0,14	-	-	-	-	-	-
13	18	0 -0,07	0 -0,43	0 -0,11	±0,25	±0,14	-	-	-	±0,35	-	+0,70 -0
18	20	0 -0,08	0 -0,52	0 -0,13	±0,30	±0,17	-	-	-	±0,42	-	+0,84 -0
20	23	0 -0,08	0 -0,052	0 -0,13	±0,30	±0,17	-	-	-	±0,42	±0,17	+0,84 -0
23	26	0 -0,08	0 -0,052	0 -0,13	±0,30	±0,17	-	0 -0,21	-	±0,42	±0,17	+0,84 -0
26	30	0 -0,08	0 -0,052	0 -0,13	±0,30	±0,17	-	0 -0,21	0 -0,13	±0,42	±0,17	+0,84 -0
30	50	0 -0,16	-	0 -0,16	±0,60	±0,20	-	0 -0,25	0 -0,16	±0,80	±0,20	+1,6 -0
50	55	0 -0,19	-	0 -0,19	±0,70	±0,37	-	0 -0,46	0 -0,30	±0,95	±0,37	-
55	65	0 -0,19	-	-	±0,70	±0,37	±0,60	0 -0,46	0 -0,30	±0,95	-	-
65	80	0 -0,19	-	-	±0,70	±0,37	±0,60	0 -0,46	0 -0,30	±0,95	-	-
80	120	-	-	-	±2	-	-	-	-	-	-	-
120	140	-	-	-	±2,5	-	-	-	-	-	-	-

For Hollow Rods

Minimum wall thickness is 3 mm. Eccentricity : %10 (max.)

Outer Cold Drawn - Internal Extruded

Outer Class B - Hole Class A tolerance

Inner-Outer Cold Drawn

Outer Class C - Hole Class B tolerance

Inner-Outer Extruded

Outer Class A - Hole Class A tolerance



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