

<b>Edition from</b>	<b>07.02.2022</b>	<b>Alloy datasheet</b>	<b>No. 244</b>
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<b>Alloy</b>	<b>ISO</b>	<b>EN</b>	<b>ASTM</b>
<b>58V</b>	<b>CuZn42</b>	<b>(CW510L)</b>	<b>-</b>

Others:

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**Main characteristics** Copper-zinc alloy with ( $\alpha+\beta$ ) microstructure. Tin and nickel additions modify microstructural characteristics to improve machinability.

<b>Chemical composition</b>	Cu 57,0 – 59,0 %	Zn Remainder	Ni 0,2 – 0,3 %	Sn 0,2 – 0,3 %	
Impurities Max.	Al 0,05 %	Fe 0,05 %	Pb 0,05 %	Cd 0,005 %	Others 0,1 %

<b>Product portfolio</b>	Hot extruded and cold drawn products				
	Section type	Round, square, hexagonal, flat			
	Rod	Available			
	Wire	Available			
	Profile	On demand			

**Examples of use** Any part obtained by automatic screw machining.  
Variant of the 58M specially developed to meet the general requirements of the watchmaking industry in terms of lead concentration (REACH 0.05%)

<b>Mechanical properties</b>	Form	Dimension Ø	Temper	UTS N/mm <sup>2</sup>	YS N/mm <sup>2</sup>	A %	Hardness HV
			R460 H120	> 460 ----	> 340 ----	> 12 ----	---- > 120
	Rod	1,5 – 19,0	R500 H140	> 500 ----	> 430 ----	> 8 ----	---- > 140
	Wire	1,5 – 6,35	R580 H160	> 580 ----	> 460 ----	> 3 ----	---- > 160
			R640 H180	> 640 ----	---- ----	---- ----	---- > 180

*Other tempers on demand*

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<b>Physical properties</b>	Density	kg/dm <sup>3</sup>	8,4
	Melting range	°C	860 – 890
	Linear expansion coefficient (20-400°C)		0,000021
	Specific heat	J/kg K	380
	Thermal conductivity at 20°C	W/m·K	136
	Electrical conductivity at 20°C	% IACS	25,0
	Elasticity modulus	kN/mm <sup>2</sup>	106

<b>Workability</b>	Cold working, maximum section reduction	%	poor, 20
	Hot working, temperature range	°C	fair, 630 - 730
	Machining, compared with CuZn39Pb3 (100 %)	%	fair, 70
	Annealing temperatures	°C	420 - 630
	Stress relieving temperatures	°C	250 - 350
	Soft soldering		excellent
	Hard soldering		fair
	Autogenous welding		poor
	Arc welding		poor
Resistance welding		poor	

<b>Symbols</b>	Ø	= round rod diameter (mm)
	UTS	= ultimate tensile strength
	YS	= yield stress at 0,2 %
	A	= tensile elongation