

# CuSn6 HP

HP high performance

## Standard Designation

EN CW452K / UNS 51900

## Chemical Composition

Cu	Sn [%]	P [%]	
Balance	6	0.1	

## Description / Applications

CuSn6 HP belongs to the copper-tin alloys. CuSn6 HP provides an extraordinary combination of strength and electrical conductivity. CuSn6 HP has elevated bending properties because of its fine-grained microstructure.

Applications: connectors, contact pins, springs, stamped pieces, parts in the machine and apparatus construction

## Physical Properties<sup>1)</sup>

Density	8.8 g/cm <sup>3</sup>	Thermal expansion coefficient	18.5·10 <sup>-6</sup> /K
Electrical conductivity	9 m/Ω·mm <sup>2</sup> 15.5 % IACS <sup>2)</sup>	Modulus of elasticity	115 GPa <sup>3)</sup>
Thermal conductivity	75 W/m·K		

<sup>1)</sup> Guideline values for soft temper, measured at room temperature

<sup>3)</sup> 1 GPa = 1 kN/mm<sup>2</sup>
<sup>2)</sup> IACS = International Annealed Copper Standard

## Processing information

Weldability	good	Stress corrosion cracking	none
Solderability	very good		

## Mechanical properties (maximum strip thickness 0.4 mm)

Temper	Tensile Strength Rm [MPa]	Yield Strength Rp0,2 [MPa]	Elongation A50 [%]	Hardness HV	Bendability <sup>1)</sup>			
					90° r/t <sup>2)</sup>		180° r/t <sup>2)</sup>	
					GW <sup>3)</sup>	BW <sup>4)</sup>	GW <sup>3)</sup>	BW <sup>4)</sup>
R550	550-650	min. 500	min. 16	170-220	0	0	0.5	1
R670	670-780	min. 660	min. 7	200-260	1	2	2	3.5

<sup>1)</sup> The r/t values are valid for a strip thickness up to 0.4 mm (without crack). The data refer to a width of the bending area of 5 mm.

V-shape bend test according to ISO 7438

<sup>2)</sup> r = inner radius, t = thickness

<sup>3)</sup> GW = good way

<sup>4)</sup> BW = bad way

The details in this datasheet are exclusively meant for general information only. They correspond to the state of knowledge at the time of issue and cannot replace the examination by our customers. Liability cannot be derived from the information.

Rev.: 04/2022

[www.kemper-olpe.de](http://www.kemper-olpe.de)