

Wieland-KS4

CuNi1SP | Machinable high copper alloy, lead free acc. to RoHS

Material designaton

EN	not standardized
UNS	not standardized

Chemical composition*

Cu	balance
Ni	1 %
S	0,25 %
P	0,25%
Pb	max. 0,09%

* Reference values in % by weight

Physical properties*

Electrical conductivity	MS/m	>29
	%IACS	>50
Thermal conductivity	W/(m*K)	245
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	18
Density	g/cm ³	8,9
Modulus of elasticity	GPa	117

* Reference values at room temperature

Corrosion resistance

Pure copper and high copper alloys generally provide good corrosion resistance due to their noble character and are practically insensitive to stress corrosion cracking

Product standarts

not standardized

Material properties and typical applications

Wieland - KS4 is a lead-free, high copper alloy which combines high strength, good conductivity and good machinability.

The material is supplied precipitation-hardened* and, due to its sulfur content, particularly suitable for machined connector pins in the electrical and electronic industry.

*different material conditions possible on request

KS4 can be used as a substitute for the proven Wieland K41 (CuNi1Pb1P) alloy.

The material is lead-free according to RoHS and ELV.

Types of delivery

The Extruded Products Division supplies bars, wire, sections and tubes. Please get in touch with your contact person regarding the available delivery forms, dimensions and tempers.

Fabrication properties

Forming

Machinability (CuZn39Pb3 = 100 %)	70 %
Capacity for being cold worked	good
Capacity for being hot worked	fair

Surface treatment

Polishing mechanical	good
electrolytic	good
Electroplating	excellent

Joining

Resistance welding (butt weld)	fair*
Inert gas shielded arc welding	fair*
Gas welding	fair*
Hard soldering	fair*
Soft soldering	good*

* high temperatures can change material properties

Heat treatment

Melting range	1070–1080 °C
Soft annealing	700–900 °C

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