

ecobrass SW4

CuZn21Si3P | Lead-free special brass

Material designation

EN	CW724R CuZn21Si3P
UNS	C69305

Chemical composition*

Cu	76 %
Si	2,8 %
P	0.1 %
Zn	balance
Pb	max. 0,09 %

*Reference values in % by weight

Physical properties*

Electrical conductivity	MS/m	~4,5
	%IACS	~7,8
Thermal conductivity	W/(m·K)	35
Density	g/cm ³	8,26
Modulus of elasticity	GPa	ca. 100

*Reference values at room temperature

Corrosion resistance

Special brass generally exhibits good corrosion resistance due to alloying additions. The addition of silicon improves resistance to tarnishing and reduces the risk to stress corrosion cracking and dezincification. After operations at temperatures >600 °C we recommend a subsequent heat treatment at 550–580 °C for 2–3 hours to optimise dezincification resistance.

Product standards

Rod	EN 12163 EN 12164 EN 12165
Wire	EN 12166
Section	EN 12167

Material properties and typical applications

ecobrass SW4 is a lead-free special brass resisting high load and exhibiting good corrosion resistance as well as excellent machinability. This alloy is suited to the production of machined and drop forged parts. ecobrass SW4 is available as machining rod as well as in hot stamping quality and is optimised for sanitary applications. The material meets the requirements of ISO 6509 regarding the dezincification resistance.

Material accepted for products in contact with drinking water as per 4 MS positive list.

The material is lead free according to RoHS and ELV

Types of delivery

The BU Extruded Products 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 %)	80 %
Capacity for being cold worked	good
Capacity for being hot worked	excellent*

Joining

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

* see section "Corrosion resistance".

Surface treatment

Polishing mechanical	good
Polishing mechanical	poor
Electroplating	good

* For further fabrication properties, please call your contact person.

Heat treatment

Melting range	860–925 °C
Hot working	700–800 °C
Soft annealing/optimising deszincification resistance	550–580 °C / 1–3h

Delivery condition round rods (standard)

R500 / EN 12164	>10–80 mm
-----------------	-----------

Trademarks

