

# Wieland-SW3

CuZn21Si3P | Lead-free special brass

## Material designation

EN	CuZn21Si3P CC768S
UNS	C87850

## Chemical composition\*

Cu	76 %
Si	3 %
P	0.03 %
Zn	balance

\*Reference values in % by weight

## Physical properties\*

Electrical conductivity	MS/m	4.5
	%IACS	7.8
Thermal conductivity	W/(m·K)	33
Density	g/cm <sup>3</sup>	8.25
Modulus of elasticity	GPa	ca. 85

\*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. (dezincification test according to ISO 6509)

## Mechanical properties according to EN

Standard	Casting condition	Tear bar*
R <sub>m</sub> (MPa)	420	520
R <sub>p0.2</sub> (MPa)	140	200
A5 (%)	20	35
HBW	80	120

\*Permanent mold casting

## Material properties and typical applications

**Wieland-SW3** is according to ELV and RoHs a lead-free special brass resisting high load and exhibiting good corrosion resistance as well as excellent machinability.

This alloy is suitable for the manufacture of sand-, gravity die and low pressure die castings.

Through the addition of a grain refiner ECOCAST has very fine grain in the cast condition already.

ECOCAST is accepted for products in contact with drinking water.

## Types of delivery

As ingots or continuous casting. Ingot weight approx. 6 kg or 12 kg.

## Fabrication properties

### Forming

Machinability 80 %  
(CuZn39Pb3 = 100 %)

### Surface treatment

Polishing mechanical good

Electroplating good\*

\* For further fabrication properties, please contact our Application Engineering.

### Joining

Resistance welding (butt weld) good

Inert gas shielded arc welding good

Gas welding good

Hard soldering excellent

Soft soldering excellent

### Heat treatment

Melting range 860–925 °C

Solidus temperature 860 °C

Liquidus temperature 925 °C

Annealing/homogenising 550–580 °C

## Trademarks



Further information is provided in our brochure on ECOCAST.