

eco ST2®

CuZn35Sn1P | Lead-free special brass

Material designation

EN	CW727R CuZn35Sn1P
UNS	not standardized

Chemical composition*

Cu	64 %
Sn	0.6 %
P	0.1 %
Zn	balance
Pb	max. 0.1 %

*Reference values in % by weight

Physical properties*

Electrical conductivity	MS/m %IACS	15.1 26
Thermal conductivity	W/(m·K)	122
Thermal expansion coefficient (0–300 °C)	10 ⁻⁶ /K	21.5
Density	g/cm ³	8.36
Modules of elasticity	GPa	105

*Reference values at room temperature

Corrosion resistance

Special brasses are generally considered to have good corrosion resistance due to alloying additions. The elements tin and phosphorus increases the resistance. To ensure dezincification resistance according to ISO 6509 a thermal treatment is necessary, especially recommended after working operations > 600°C, 500–550°C /2-3h are suited. Stress corrosion cracking should be taken into account, especially in an ammoniacal atmosphere and whilst under mechanical stress.

Product standards

Rod	EN 12164* EN 12165*
Section	EN 12167*

*intended for standardisation

Material properties and typical applications

eco ST2® in spite of being lead free, it is an alloy that can be moderately machined. It is suited for the production of turned parts and hot stamped parts as well.

The material meets the requirements of ISO 6509 regarding the dezincification resistance.

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

The material is lead-free in accordance with 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 %)	50 %
Capacity for being cold worked	good
Capacity for being hot worked	good*

Surface treatment

Polishing	
mechanical	good
electrolytic	good
Electroplating	poor

Joining

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

Soft soldering excellent

* see section „Corrosion resistance“

Heat treatment

Melting range	880–910 °C
Hot working	650–700 °C
Soft annealing	500–550 °C
Thermal stress relieving	200–250 °C 1–3 h

Trademarks

wieland ecoline