

# C27000

## CuZn36

### Alloy Designation

EN	CuZn36
DIN CEN/TS 13388	CW507L
UNS	C27000

### Chemical Composition (Balance)

Weight percentage

Cu	64	%
Zn	Rest	%

### Characteristics

**CuZn36** is the major brass alloy for the cold forming process. Even though brasses with lower Zinc content have better cold forming properties, **CuZn36** is the most used alloy. Reasons for this are on the one hand economical due to lower price of Zinc compared to Copper, on the other hand the forming properties of this alloy meet the demand of many applications.

### Main Applications

Metal goods, Deep drawn parts, Stamped parts, Connectors.

### Mechanical Properties (EN 1652)

Temper	Tensile Strength	Yield Strength Minimum	Elongation Minimum	Hardness	Bending 90°	
	Rm	Rp <sub>0.2</sub>	A <sub>50mm</sub>	HV *	gw rel. Bending Radius R/T	bw
	MPa	MPa	%	HV	Strip Thickness ≤ 0.50mm	
R300	300 .. 370	≤ 180 *	38	55 .. 105	0	0
R350	350 .. 430	170 *	19	95 .. 125	0	0
R410	410 .. 490	300 *	8	120 .. 155	0	0
R480	480 .. 560	430 *	3	150 .. 180	0,5	2
R550	≥ 550	500 *	-	≥ 170	1	3
R630	≥ 630	600 *	-	≥ 190	-	-

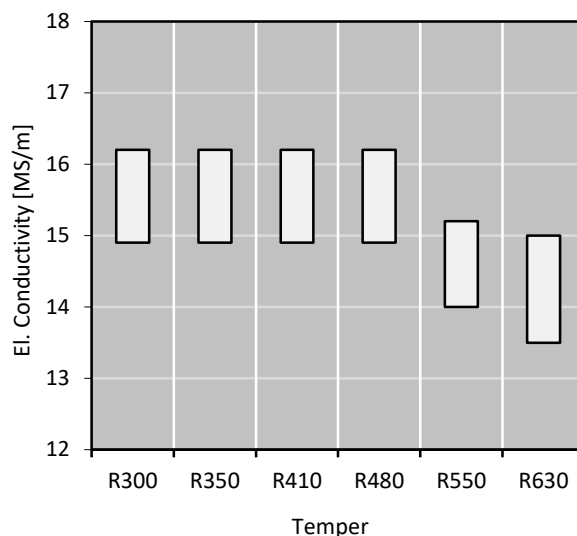
\* only for information

### Physical Properties

Typical values in annealed temper at 20 °C

Density		8.47	g/cm <sup>3</sup>
Thermal expansion coefficient	20 .. 300 °C	20.2	10 <sup>-6</sup> /K
Specific heat capacity		0.377	J/(g·K)
Thermal conductivity		121	W/(m·K)
Electrical conductivity	MS/m	14	MS/m
Electrical conductivity	IACS	24	%
Thermal coefficient of electrical resistance	(0 .. 100 °C)	1.7	10 <sup>-3</sup> /K
Modulus of elasticity	GPa	110	GPa

### Electrical Conductivity



#### Fabrication Properties \*

Cold Forming Properties	Excellent
Machinability (Rating 20)	Fair
Electroplating Properties	Excellent
Hot Tinning Properties	Excellent
Soft Soldering, Brazing	Excellent
Resistance Welding	Good
Gas Shielded Arc Welding	Fair
Laser Welding	Less suitable

\* For more details call our technical service

#### Corrosion Resistance \*

**CuZn36** has a good resistance to water, water vapour, different saline solutions, many organic liquids .  
Land, sea and industrial atmosphere.

Under certain conditions (water with high chlorine-content and low carbonate-hardness) a form of corrosion called "dezincification" can occur. Furthermore this alloy tends in cold-formed temper under internal and/or external tensile stress when aggressive agents like ammoniac, amine ammonia-salts are present to "stress corrosion cracking". Tensile stress can be applied after fabrication during assembly or installation.

A heat treatment can help to avoid stress corrosion cracking. Semi-finished products can get a stress relieving annealing treatment or softening treatment.



#### Bend Fatigue (at room temperature)

The fatigue strength gives an indication about the resistance to variations in applied tension. It is measured under symmetrical alternating load. The maximum bending load for  $10^7$  load cycles without crack is measured. Dependent on the temper class it is approximately 1/3 of the tensile strength  $R_m$ .

#### Available delivery forms \*

- Strips in coils
- Traverse-wound coils with drum weights up to 1.5 t
- TECSTRIP®\_multicoil up to 2.5 t
- Hot-Dip-Tinned strips in thickness range 0.10 up to 1.20 mm

\* For more details call our sales service

Due to continued improvements within our production process, the details stated in our brochure can not be guaranteed. We reserve the right to update or amend our products, without prior notification. We suggest that you obtain confirmation of our product details / specifications prior to committing to specific alloys.