



Major changes start at the beginning: Diehl ECO-SILVER 18 is the green starting point for the protection of our environment.

Carbon FootPrint:
 With the Recycling Input Rate of 97% the Primary Energy Consumption can be reduced by more than 40%. Concurrently, the Global Warming Potential is shortened by more than 50%
 (= net savings of more than 2.0 CO₂-Emission equivalents per kg)

Material Designation

DIN-EN Symbol	CuNi18Zn20
DIN-EN	CW409J
UNS	≈ C 76400
JIS	C7521
The Miller Company	ES18

Nominal Composition (mass content in %)

Cu	Balance
Ni	18
Zn	20
Fe	< 0.2
Mn	< 0.25
Sn	< 0.03
Pb	< 0.005
Cd	< 0.002
Other	< 0.08

Typical Applications

- Coins, caps for quartz crystals
- Electromagnetic shieldings
- Deep drawing parts
- Tableware, security keys, cutlery
- Contact springs, connector, leaf springs for relays, electric contacts

About The Alloy

Diehl ECO-SILVER 18 has been developed in response to the demand of numerous customers for an environmentally sound alternative alloy to C7521. Having a significant positive impact on the environment by reducing the carbon footprint, this material has also a guaranteed and certified RIR potential of at least 97%.

The RIR (Recycling Input Rate) is measured according to the environmental standard, which excludes primary metals and home scrap. Diehl ECO-SILVER 18 has good cold-forming properties, is tarnish resistant and has very good spring properties.

Like all copper alloys the copper-nickel-zinc alloys are not susceptible to embrittlement at lower temperature. The corrosion resistance of nickel silver is considerably better than that of binary copper-zinc alloys. Diehl ECO-SILVER 18 is insensitive to stress corrosion cracking.

Physical Properties*

Electrical conductivity soft	3	MS/m
Thermal conductivity	27	W/(m·K)
Thermal expansion coefficient **	17	10 ⁻⁶ /K
Density	8.7	g/cm ³
Modulus of elasticity	135	GPa = kN/mm ²

* Reference values

** Between 20 and 300 °C

Mechanical Properties *)

Temper condition	0 R 380 H 90	H02 R 450 H 115	H04 R 540 H 160	
Tensile strength in N/mm ² (for reference only)	380 - 480	450 - 550	540 - 640	
0.2% yield strength in N/mm ² (for reference only)	< 290	250	450	
Elongation A _{L50} % (for reference only)	> 30	> 25	> 15	
Vickers hardness HV (for binding)	90 - 130	125 - 160	160 - 195	
Electrical conductivity in % IACS	5	4	4	
Minimum radius of the bending mandrel for 90° bend and strip thickness s				
0.10 ≤ s ≤ 0.25 mm	transverse	0 x s	0 x s	0 x s
	parallel	0 x s	0 x s	0 x s
0.25 < s ≤ 1.0 mm	transverse	0 x s	0 x s	0 x s
	parallel	0 x s	0 x s	0 x s

*) Reference values

Processing Instructions

Cold forming properties	Machinability	Electroplating properties	Hot-dip tinning properties	Soldering	Resistance welding	Gas shielded arc welding	Laser welding
very good	satisfactory	very good	good	good	very good	good	good

Available Dimensions

Bright pre-rolled strips 1 to 2.5 mm

Precision strip thickness from 0.05 to 1.2 mm

Strip width from 3.0 to 600 mm, but at least 10 times of the strip thickness

Other widths available on request.

Available Versions

Coils with standard outer diameters of 1200 mm

Strips in reel form with coil weight of up to 1500 kg

Multipancake up to 2.5 t

Hot-dip tinned strips

Profiled strips

Electroplated strips (tin, nickel)

Your Local Contact Person

Europe

USA

Asia

DIEHL
Metal Applications



DIEHL
Metal Applications

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