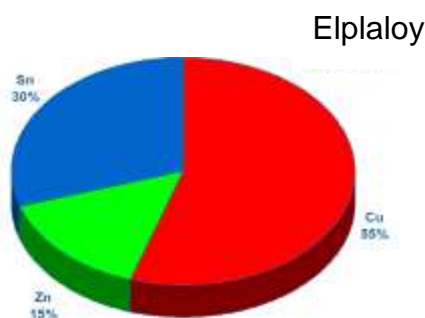


As part of the extensive plating program of Elplatek A/S, we introduce the ternary alloy plating system, Copper-Tin-Zink.

Special features of the ELPLALOY



- Abrasion-resistant
- Diamagnetic
- Plates excellent with precious metals
- Good sliding properties
- High hardness
- Corrosion resistant
- Solderable
- Excellent metal distribution
- Low porosity
- Weldable

The Elplaloy system has a long variety of superior electrical and mechanical properties. In addition to these, the alloy serves as a perfect substitution for nickel in applications, where nickel allergy reactions are considered a risk. (Up to 10 percent of women and approx. 1 percent of men, suffer from allergy to Nickel-containing materials.)

The table below lists the mechanical and electrical properties in comparison with other applications:

Type of Plating	Composition (% W/W)	Typical coating thicknesses	Spec. resist. $\mu\Omega/cm$	Contact properties	Wear resist.	Solderability	Micro hardn. (HV)	Corrosion resistance	Comments
Elplaloy	Cu 55 Sn 30 Zn 15	3 μm Cu, 1-4 μm Elplaloy	4-7	**	*	*	600	*	Cu-Sn-Zn alloy with superior electrical properties, very good corrosion resistance and nice decorative finish. Excellent substitution for Nickel.
Argenloy	Elplaloy/Ag	0.5 μm Elplaloy/ 2 μm Ag/3 μm Cu	4-7	**	*	*	600	*	Combining the properties of silver and Elplaloy. On a layer of copper and silver is plated a thin layer of Elplaloy to prevent silver- oxides and silver sulphides from forming on surface.
Silver	Ag 99.9	3 μm Cu, 1,3-12 μm Ag	1.7	***	0	**	100	**	Plating – normally used in applications where excellent electrical properties are sought – especially high frequency applications. Regarded as best electricity conductor.
Hard gold	Au/Co 0.3	0.2-2.0 μm	7-9	***	*	***	220	**	Often used in applications with demands for low constant contact transition resistance.
Nickel	Ni 99.9	1-10 μm	7-9	*	*	0	300-400	*	Used as a diffusion barrier layer and serves as a good corrosion property improvement, but considered allergene.

* = good

** = very good

*** = Excellent

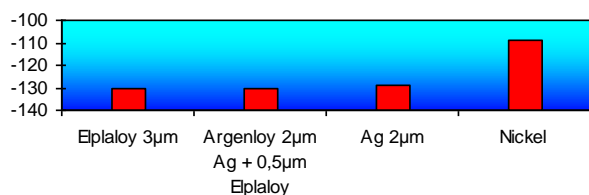
0 = Not applicable

ELPLALLOY coatings are characterized by an excellent thickness distribution even in the case of parts with complex shapes. The coating hardnesses of ELPLALLOY layers are 400 HV 0.1 and 600 HV 0.1 depending on the composition of the metals in the alloy. The layers are extremely abrasion-resistant. For this reason ELPLALLOY layers are particularly suitable for coating bearing shells or pistons.

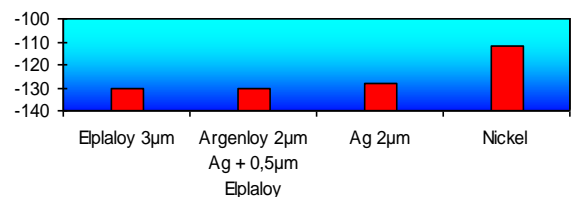


ELPLALLOY coatings exhibit an acceptable contact resistance. The solder ability of the layers is good with suitable fluxes. Furthermore, the layers are diamagnetic. Therefore connectors for high frequency technology provided with ELPLALLOY coatings reach very low intermodulation values in the mobile radio frequency range.

Intermodulation at 935/960 MHz (GSM)



Intermodulation at 825/1875 MHz (DCS)



IM3 in dBm (mean value)

General applications for ELPLALLOY:

- Battery covers
- High-frequency technology
- Hydraulic parts
- Contact pins
- Cooling coils
- Bearing shells
- Conducting elements
- Interconnection technology

Additional information is available on request at:

Elplatek A/S
Tlf: +45 49 13 20 10

Fax: +45 49 13 1131

email: elplatek@elplatek.dk