

## Conductive lacquer : highly conductive shielding coating with a silver-plated copper base

### Product information from our supplier

**General**

Our conductive lacquer is a ready-to-use product for EMC shielding plastic housings for electronic devices. It is a highly conductive, aesthetically pleasing, smooth, silver-plated copper coating which has low resistance with thin coatings and very good value for money. This conductive lacquer is outstandingly stable in difficult ambient conditions (heat, moisture) and also has very good mechanical characteristics (resistance to abrasion, scratch resistance).

**Areas of use**

Plastic computer housings, printers, keyboards, monitors, magnetic disk drives, teleprinters, telephone installations, electronic typewriters, copying machines, consumer electronics, industrial devices, science and medicine and as a reflective coating for satellite aerials.

- Benefits**
- aesthetically pleasing, very smooth coating;
  - outstanding conductance;
  - outstanding "Taber" resistance to wear and "Gardner" resistance to surface damage;
  - stable electrical characteristics and climatic-proofed (-40°C to +70°C, 50°C and 95% relative humidity);
  - minimum residue, simple to process;
  - can be air-dried or oven-dried;
  - tolerant with and highly adhesive with plastics which are usually used for housings for electronic devices;
  - complies with UL approval 746-C;
  - residue from lacquer spraying are easy to remove;
  - reduced frequency of mask cleaning cycles;
  - outstanding adhesion with plastics such as polycarbonate, ABS, polystyrene and blends of polycarbonate and ABS.

<b>Product</b> (as delivered)	Pigment	silver-plated copper
	Binder solid content	thermoplastic resin
	Viscosity (Zahn cup 2)	29.0-31.0% / 14 sec.
	Flashpoint density	-5° C
	Theoretical yield	1050 kg/m3
	Suitability for storage	2.9 m2/kg at 50pm coating thickness (dry coating) at least 6 months in sealed original container

**Use**

Preparation of the surface  
The surface must be clean, dry and free of grease and dust.

### Mixing and diluting

Before applying our conductive lacquer, it must be thoroughly homogenised (e.g. in a paint mixer).and checked to make sure no sediment remains. The conductive lacquer is ready for use if it is to be applied using a HVLP spray gun. When using conventional spray guns, it can be diluted with diacetone alcohol (5-10% based on weight).

### Application

For small batches or for coating sample parts, either a suction spray gun or a gravity spray gun can be used. For spraying larger runs, it is advisable to use a pressure container with a double pressure reducer and a propeller stirrer. The same details apply as to spraying individual sample parts. The best results are achieved using HVLP (High Volume Low Pressure) guns with which lacquer spraying losses can be reduced to a minimum. Applying conductive lacquer using spraying robots can be optimised by cyclically pumping the lacquer from the pressure container to the spraying gun. A coating thickness of 35-50µm provides a good level of shielding. In some cases, with low shielding, the coating can be even thinner. In order to ensure good adhesion and conductance, dry-spraying must be avoided.

### Drying

Our conductive lacquer is dust-free after 5 minutes. Handling is possible after 10 minutes, depending on the ambient temperature. The best coating qualities are achieved by allowing it to dry in the open air for 4-16 hours (depending on the thickness of the coating and the ambient temperature). Drying at 60-70 °C can take 20 minutes after ventilation of 5 minutes. The resistance in ohms is then minimally lower than when drying at room temperature.

### Cleaning

Spraying devices, masks etc. which are contaminated with conductive lacquer can be cleaned using ethers (butyl acetate, ethyl acetate) or ketones. Dry conductive lacquer residue on plastic parts can be wiped off with a solvent mixture (40% acetone 60% isopropyl alcohol).

---

<b>Product</b> (dry coat on Lexan plates, dried at 70 °C/20 minutes)	Surface resistance	' 0.05 s/ square at 25µm coating thickness
	Attenuation	E 75 dB at 50µm as per ASTM ES-7-83
	Pencil hardness (ASTM 3363)	E9H
	max. temperature for use	95 °C

---

<b>Storage</b>	Storage at temperatures between 5 °C and 30 °C.
----------------	---

---

<b>Health and safety</b>	See separate safety data sheet.
--------------------------	---------------------------------

---

<b>Comment</b>	The data given in this sheet should not be used as the basis for the drawing up of specifications. CubiDesign can accept no liability for the accuracy of the above details.
----------------	--

