



TECHNICAL DATA SHEET

ELECTRA^ΩD'OR™

ED5500 SERIES

CARBON CONDUCTOR PASTE FOR RIGID
CIRCUIT BOARDS

PRODUCT DESCRIPTION

The **ED5500** series is a range of screen printable, conductive carbon filled polymer pastes, of varying resistivities, designed to replace gold plating on copper edge connectors and keypad contacts and for printing conductive tracks. They are available in a range of different resistivities to suit different requirements and can be used for power and signal applications.

They are designed to eliminate the problems and costs associated with selective nickel/gold electroplating whilst maintaining a corrosion free conductive surface. They can also be used for printing crossover linkages on circuit boards as an alternative to jumper wires or through hole plating.

ED5500 series provide a corrosion resistance comparable to gold, a durable surface to withstand many insertions and contacts and a surface hardness and contact resistance which equals or exceeds that of gold plating. They eliminate the costs associated with the need to protect gold plated areas during the commonly used soldering operations such as wave soldering and hot air solder levelling.

FEATURES & ADVANTAGES:

- **Economical:** - **ED5500** is an economical alternative to expensive processes such as Gold or through hole plating and materials such as silver filled polymer pastes.
- **Highly Conductive:**- **ED5500** has a typical sheet resistance of $1 - 20 \Omega \square^{-1}$ depending on the product used. Contact resistance values meet industry standards and are typically $0.05 - 5 \Omega$ depending on the product used.
- **Wear Resistance:**- **ED5500** will withstand more than 1 million hits with 200g force.
- **Crossovers:**- **ED5500** is suitable for printing crossover connections on circuit boards, eliminating the need for jumper wires or through hole plating.
- **Corrosion Resistant:**- **ED5500** withstands fluxes associated with wave- soldering or hot air solder levelling without softening or loss of adhesion and does not require protection before soldering.



CONDUCTIVITY

	<u>Surface resistance</u>	<u>Viscosity¹</u>
ED5500 - 0.25Ω	0.25 Ω□ ⁻¹	40-110 P
ED5500 - 1Ω	1.00 Ω□ ⁻¹	40-110 P
ED5500 - 10Ω	10.0 Ω□ ⁻¹	40-110 P
ED5500	20.0 Ω□ ⁻¹	40-110 P

Viscosity measured at 25°C. using a Haake VT-24 (pkII 0.3° cone)

PROCESSING

Viscosity adjustment:

Viscosity may be adjusted using **Electreducer ER7**. No more than 1% reducer should be added or deterioration of printing and curing properties may occur. Where **Electreducer ER7** is not available, Butyl Carbitol may be used as a replacement.

Important: Before making additions of reducer, the paste should be thoroughly stirred to ensure it's structure is fully broken down.

Board surface preparation:

Copper surfaces should be brushed or chemically cleaned to give a waterbreak-free surface. Failure to observe this precaution may lead to loss of adhesion and/or increased electrical resistance.

All surfaces should be completely dry before printing.

Printing:

The following factors all influence the quality of the print obtained:

- **Screen mesh: % opening, mesh type (S.T.HD) and material (stainless steel or polyester)**
- **Stencil type and thickness.**
- **Squeegee: hardness, sharpness, blade shape, angle and speed of print stroke.**
- **Snap off distance.**

The settings below are given for guidance:

Screen mesh:	200 mesh stainless steel (145 mesh polyester) Minimum mesh opening 39%
Squeegee:	70 to 80 Shore
Emulsion:	1 - 1.5mil (25 - 28μ)

Finer meshes can be used where higher print definition is required

When printing **ELECTRA•D'OR™ ED5500** as a protective coating for keyboard contacts or edge connectors, it is preferable to make the screen image slightly wider than the tracks it is being printed over. This ensures that

¹ Viscosity readings are provided as a guideline and do not form part of product specification



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