AG PASTE 511 EI

APPLICATION

Ag 511 EI is a single component, thermally drying silver ink formulated for printing fine conductive lines with high quality in mass production and good edge definition.

Once processed Ag 511 EI results in a very flexible film with good adhesion on both untreated and treated PET films. Typical applications include membrane switch, flex circuits and touch screens (among others).

Benefits

- Fine line capability and sharp definition with polyester screens and steel screens
- Compatible with the most used materials on the market (e.g. Chimet dielectric ink D 110 EI or Chimet carbon ink C 800 EI)
- Good flexibility
- Long open screen time

PROCESSING

Handling

Before application, silver ink should be allowed to reach room temperature (recommended ~25°C). Gently stir the ink before to use and keep material container closed when it is not in use to prevent solvent evaporation. Do not return ink to the original container.

Printing

For standard applications in printed electronics use a polyester screen 77, 90, 110 or 120 threads/cm. A polyurethane squeegee with a shore A durometer between 70 and 80 is recommended and angle 70°. Emulsion 10÷20 µm. In case of fine line width use a 280 - 400 mesh steel stainless screen with high definition capillary, bias 22.5°, tension > 25 N/cm and EOM < 10 µm.

Setup should be completed by a hard (> 80 shore) flat squeegee with speed > 200 mm/s and a snap off > 1.5 mm.

Curing conditions

Solvent evaporation can be completed in few minutes setting the temperature of 110°C to 130°C (best conditions). In case customer wants to cure at limited temperature we recommend the range 80°C to 90°C for no less than 30 minutes (depending strongly by the silver wet thickness).

Clean-up solvents

Thinner 0205IT, diethylene glycol mono ethyl ether acetate (CAS 112-5-2) or dibasic esters (95481-62-2). Universal solvent based screen cleaner is allowed.

Thinning

Use thinner 0205IT to replace solvent or to dilute the ink. Thinning can affect rheology of the ink resulting in wider printed lines compared to the original formulation.

Table 1. TYPICAL INK PROPERTIES

Appearance	Silver Grey Ink
Rheo-viscosity (peak hold @20s^{-1}@25°C)	45 – 65
Solid content (drying @200°C)	77 ± 2 %
Hegman Gauge (internal procedure, 50%)	< 15 µ

Table 2. TYPICAL CURED FILM PROPERTIES

Cured 10 minutes at 125°C, 5µ thick

Sheet resistance (/□/mil)	< 20 mΩ
Coverage (cm^2/g)	400 ÷ 450
Adhesion (ISO 2409)	0

These are typical values obtained in our laboratory intended to illustrate paste potential and do not represent any specification

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STORAGE AND SHELF LIFE

Min. 6 months when properly stored in tightly closed containers at room temperature (4°C to 25°C). Avoid storage at temperature higher than 30°C or lower than 0°C

SAFETY

For safety information pertaining Ag Paste 511 EI, read the safety material data sheet (SDS).

DISCLAIMER

The data published in this document come from experiments carried out in our laboratories and performed in conditions believed to be the most commonly accepted by the industry. It is the end-user's responsibility to check whether this product can be efficiently used in his specific process and under his specific industrial conditions which Chimet SpA can neither control nor foresee. Chimet makes no warranties expressed or implied arising from the product use. Chimet SpA specifically disclaims any liability for consequential or incidental damages of any kinds, including lost profits.

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