TECHNICAL DATASHEET

ELECTRAJET® ELJ11

Inkjet Legend Ink

ELECTRAJET® ELJ11 is a single-component UV set, thermal cure inkjet legend ink for PCB manufacture.

Features:

- Strong bright white colour
- Fast curing with LED lamps (385 or 395nm)
- Excellent jetting performance with industrial piezo print heads
- Low levels of yellowing during soldering cycles
- No cracking or brittleness during multiple heat or solder cycles
- Excellent adhesion to soldermask, copper and laminate surfaces
- Contains no halogenated flame retardants.
- Complies with RohS directives & REACH compliant

PRODUCT PROPERTIES

Colour: Bright white

Viscosity:

ELJ11/6120 W

Viscosity at 25°C:	20-25 cP (mPa-s)
Jetting viscosity:	9-11 cP (mPa-s)
Jetting temperature:	45°C (Konica Minolta 1024 head)

ELJ11/6130 W

Viscosity at 25°C:	15-18 cP (mPa-s)
Jetting viscosity:	6-7 cP (mPa-s)
Jetting temperature:	50°C (FUJIFILM Dimatix™ Samba™ GL3 head)

PRODUCT PROCESSING

ELECTRAJET® ELJ11 is supplied in pre-weighed packs of 1KG and is supplied ready to apply.

PRECLEANING

Prior to application of ELJ11 the surface needs to be free of contamination. It is recommended to apply the legend after soldermask developing. If applied after soldermask thermal cure then the soldermask should not be UV bumped and the surface must be cleaned to make sure there are no contaminants present on the surface.

INKJETTING

ELECTRAJET® products are single component materials supplied ready to use. No mixing or viscosity reduction is required. They are designed for use with piezo drop on demand print heads combined with a LED "pin" cure lamp.
Recommended wavelength is 395nm.

ELECTRAJET® ELJ11 can be applied to fully cured LPISM however for optimum adhesion it is recommended that the product is applied to soldermask after the development stage and co-cured. Soldermask should not be UV bumped prior to legend application as this will impair adhesion.

The pin-cure will harden the coating for subsequent careful handling. ELECTRAJET® products are 100% solids so no solvent evaporation is required.

Care must be taken to ensure complete flushing of the system as incompatibility between different supplier chemistry can cause cross-linking/gelling in the process lines. Recommended flushing solution prior to filling with ELJ11 is **ECJ1**.
It would be recommended to contact the equipment supplier for guidance.

Typical print parameters using KM1024i S HE head:

Voltage Left A:	Typically per Konica Minolta settings stated on head packaging
Voltage Right A:	Typically per Konica Minolta settings stated on head packaging
Voltage Left B:	Typically per Konica Minolta settings stated on head packaging
Voltage Right B:	Typically per Konica Minolta settings stated on head packaging
Voltage Left High:	Typically per Konica Minolta settings stated on head packaging
Voltage Right High:	Typically per Konica Minolta settings stated on head packaging
Drop Speed:	6.0 – 6.5 m/s
Drop volume:	5.7 – 6.3 pl
DPI:	1440 (thickness and print strategy dependent)
UV PIN cure:	45mJ/pass (10% using Phoseon FL200 20W/cm^2)
Vacuum/Ink pressure:	-21 mBar (-17 – 25mBar)
Waveform:	Square
High:	3.0 µs (3.5 – 5.0)
Low:	6.0 µs (6.0 – 12.0)
Zero:	11.0 µs (3.0 – 12.0)
Head height:	0.5mm (0.3 – 1.5mm)

UV PIN Curing:

Initial UV set (pin-cure)	Minimum 150 – 200mJcm^{-2} with 385 or 395nm LED lamp.
FINAL THERMAL CURE	60 minutes @ 150°C (300°F) time at board temperature.

FULLY CURED PROPERTIES

Pencil Hardness	Minimum 4H
Cross-hatch & tape adhesion	100% to uncured soldermask 95% to fully cured soldermask
Solder resistance (10 seconds at 260C)	PASS – no adhesion loss or cracking
Methylene chloride resistance (60 seconds)	PASS – no removal
MIL-P-55110 MIL-STD-202, method 215J	PASS
IPC-TM-650 2.3.4 Solvent resistance	PASS
IPC-TM-650 Adhesion (2.4.1.1B)	PASS
IPC-TM-650 Adhesion (2.4.28)	PASS

FLUSHING Ink delivery system and print heads should be flushed using **ECJ1.**

SHELF-LIFE Minimum 6 months from date of manufacture when stored between 10 and 25°C (50 to 77°F), away from sources of heat and direct sunlight.

For further information, contact:

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