

Product Description:

Clear Acrylic Coating

Product Code:

EPcryl100

Date:

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(2 pages)

PRODUCT DESCRIPTION

EPcryl100 is a flexible, transparent acrylic conformal coating offering excellent protection of Printed Circuit Boards (PCBs) against humidity and airborne contamination. Coating meets the requirements of all major coating specifications including Mil-I-46058C, IPC-CC-830B, IEC-61086 and UL746E. Material includes a fluorescent tracer to assist with inspection of coated assemblies.

EPcryl100 is designed to be resistant to common solvents and can only be removed with a specific rework solvent, **EP801**. It may be soldered through to allow rework.

It is suitable for dip coating, spraying and brushing, as well as selective coating applications. All of these products are 100% Ozone Friendly.

PRODUCT USE

EPcryl100 is used to protect electronic assemblies within the commercial sector from harmful environments, i.e., humidity, salt spray etc. Offers excellent electrical characteristics.

FEATURES

- 100% Ozone Friendly
- Excellent adhesion to all substrates
- Good temperature range
- Good dielectric properties - prevents arcing
- May be safely soldered through, allowing easy repair
- Resistant to mould growth
- May be totally removed by solvents
- Compatible with other acrylic coatings

TYPICAL PROPERTIES

Uncured Material

Colour	Clear water white
Non-volatile content	30 \pm 3% (bulk material)
Viscosity (cPs 25°C)	250-290
Specific gravity (25°C)	0.92
Flash point	7°C as supplied,
Coverage / Litre	12m ² @ 25 micron thickness
Drying time	15 to 20 minutes (touch dry) 24 hours (optimum properties)
Shelf Life at room temperature	12 months
Recommended Thinner for Spraying	EP721
Recommended Thinner for Dipping	EP703

Cured Material

Glass Transition Temp (T _g)	33°C
Dielectric strength	45 kV/mm
Electrical Resistivity	10 ¹⁴ Ohms/cm
Flammability	Self extinguishing
Temperature range	-55°C to +125°C

APPLICATION

Cleaning

In general PCBs should be thoroughly cleaned before coating. This is required to ensure that satisfactory adhesion to the substrate is possible. Also all flux residues must be removed as they become corrosive if left on the PCB.

Dip Coating

Ensure that the coating material in the container has been agitated thoroughly and has been allowed to stand for at least 2 hours for all the air bubbles to disperse.

Dip Thinners (**EP701**) should be used to keep the **EPcryl100** coating at a suitable viscosity for dipping. **EP701** is added periodically as the solvent evaporates. The viscosity should be checked using a viscosity meter or "flow cup".

The board assemblies should be immersed in the **EPcryl100** dipping tank in the vertical position, or at an angle as close to the vertical as possible. Connectors should not be immersed in the liquid unless they are very carefully masked.

Leave submerged for about 1 minute until the air bubbles have dispersed. The board or boards should then be withdrawn VERY SLOWLY so that an even film covers the surface. After withdrawing, the boards should be left to drain over the tank until the majority of residual coating has left the surface.

After the draining operation is complete, the boards should be placed in an air-circulating drying cabinet and left to dry.

Spraying

Bulk **EPcryl100** needs to be thinned with Spray Thinners (**EP721**) before spraying. The optimum viscosity to give coating quality and thickness depends on the spray equipment and conditions but a starting point could be 2 parts coating to 1 part thinners. If bulk coating material has been agitated, allow to stand until air bubbles have dispersed.

EPcryl100 is suitable both for use in manual spray guns and selective spray equipment.

The nozzle of the manual spray gun requires to be selected to give an even spray to suit the prevailing viscosity of the coating material. The normal spray gun pressure required is $27.6 \times 10^6 \text{ kN/m}^2$ to $34.5 \times 10^6 \text{ kN/m}^2$ (40 - 50 lbs/sq.inch)

To ensure penetration of the coating beneath the components and in confined spaces, spray the assembly from all directions to give an even coating.

After spraying, the boards should be placed in an air-circulating drying cabinet and left to dry.

Brushing

Ensure that the coating material has been agitated thoroughly and has been allowed to settle for at least 2 hours. The coating should be kept at ambient temperature. Gently apply the coating with a good quality brush so as not to leave brush marks and so that the components and wiring are not disturbed.

Drying Times & Curing Conditions

EPcryl100 will be touch dry after 15 - 20 minutes at room temperature and does not require a thermal cure. The full properties of **EPcryl100** will be obtained after a 24 hours at room temperature. This can be accelerated by the use of a thermal cure of 2 hours at 90°C or 4 hours at 60°C.

Coating Removal & Repair

EPcryl100 can be easily removed using **EP801** which can be locally or completely stripped depending on requirements. Application can be achieved using a cotton bud, brush or complete immersion in a bath of **EP801**. Compatibility of the **EP801** with the PCB should be assessed at all times.

All technical data in this bulletin is based on test results and is believed to be correct. However, since the end use of ELEMENTAL Protection materials (and the manner of storing and handling them) is beyond our control, we make no warranty-expressed or implied as to the fitness of use, results to be obtained from or effects of use with respect to these materials. Their use shall be solely by the judgment of and at the risk of the user notwithstanding any statement in this bulletin.