TECHNICAL DATASHEET

Durashield™ LED Mask

2-component thermal cure mask

PRODUCT DESCRIPTION

Durashield LED Mask is a low VOC, thermally-curable mask. It is designed for use in LED applications, which require excellent resistance to colour change during use.

Two pack epoxy chemistry is employed to give excellent adhesion to bare copper and is particularly recommended for OSP final finishing and SMT reflow assembly.

In use, **Durashield LED Mask** has a pot life of at least 48 hours at 20°C, enabling extended production to be achieved from a single mixing.

Good definition prints may be achieved with a wide variety of screen meshes.

Coatings may be cured using a thermal convection or infrared heat source.

PRODUCT PREPARATION

Durashield LED Mask Pt A – 0.9 kg
Durashield LED Mask (H-4531) Pt B – 0.1 kg

The components are supplied together in the correct proportion. No additional solvent should be added for standard screen print application.

Mixing:

The mask should be mixed in the ratio 9 parts paste (Pt A) to 1 parts hardener (Pt B) by weight. Stir well to ensure complete mixing.

Thorough, low shear mixing is essential to ensure uniform dispersion. High shear mixing will cause air entrainment and is not recommended. Allow the mixed ink to stand for at least 15 minutes before printing.

The mixed ink has a pot life of at least 48 hours at 20°C.

BOARD PREPARATION

Panels should be clean, dry and free from residues and surface oxides, prior to **Durashield LED Mask** application.
Copper surfaces may be chemically cleaned, abrasive wet brushed or pumice scrubbed. If brushes are used, they must be maintained in a clean condition, free from accumulations of debris. Panels should be water rinsed and hot air dried immediately after treatment.
The mask should be applied to copper as soon as possible after surface preparation, and always within four hours.

APPLICATION

Durashield LED Mask should screen print easily using standard settings for snap-height, pressure and speed. Additional information is given below:

Screens

Best results will normally be achieved using a polyester screen with "T" filaments.
Mesh should be applied at an angle to the frame sides to assist in filling between tracks. Ideally, the angle should be between 12-22°.
To maintain good registration and print quality the mesh should be tensioned to at least 18-25N/cm^2.
The selection of mesh count is dependent on the thickness of ink deposit required. Achieving adequate coverage is crucial for proper functioning of the soldermask.

Typical mesh sizes are in the range 43-71T/cm^2

Squeegee

Polyurethane squeegee blades of between 65-85 (recommended 75) Shore hardness will give satisfactory results. The softer the blade, the more deposit is applied; soft blades are recommended to be strengthened with laminate to preserve their rigidity. If the squeegee blade bends excessively under printing pressure, smearing and poor definition prints will occur.
For good definition the squeegee must be kept sharp at all times

CURING

Durashield LED Mask is cured by thermal energy alone. Recommended cure conditions are as below.

Conventional hot air oven:	30 minutes at 150°C (panel surface temperature)
Infra-red oven:	8 minutes at 160-165°C

Some volatile matter is released during the drying/curing process and the curing oven should be connected to an adequate exhaust ventilation system. Retention of organic vapours in the oven may adversely affect surface finish and cross-linking

CLEANING

Equipment should be cleaned of residual soldermask using **SW100 or Dowanol PMA.**

STORAGE & SHELF-LIFE

Both components should be stored cool (5-15°C recommended) in their sealed, original containers. Extended storage above 30°C may cause product thickening or separation, and is not recommended. The mixed ink has a pot life of at least 48 hours at 20°C.

For further information, contact:

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