



ELECTRA

TECHNICAL DATA SHEET

RONASCREEN

1600 SERIES

UV CURABLE SOLDERMASK

PRODUCT DESCRIPTION

A screenable UV curable solder mask, specifically formulated for use in the high speed production of copper only printed circuit boards. The product is fast-curing, suitable for use on semi-automatic and fully automatic printing equipment and is resistant to bleed-out; Ronascreen 1600 series inks exhibit good adhesion and resistance against heat shock such as experienced in the solder coating equipment.

PHYSICAL PROPERTIES

Surface hardness	4H Pencil
Adhesion on copper	100/100 Cross-hatch test
Water absorption	0.2% maximum
Surface resistivity	1 x 10 ¹⁴ ohms
Volume resistivity	1 x 10 ¹⁶ ohms cm ² /cm
Dielectric constant	1.5 (1 MHz)
Dissipation factor	0.02 (1 MHz)
Dielectric strength	60v/micron
UL Approved flammability class	94 V-0

INK PREPARATION

Unopened tubs of ink should be allowed to stabilise to print-room temperature. On opening the ink should be thoroughly stirred before applying to the screen. Always replace the lid to protect the product from UV light and the ingress of dust and dirt. Ink should not be returned to the tub from the screen.



RECOMMENDED PROCESS SEQUENCE

Surface Preparation

1. Acid clean with Ronaclean PC 590. The use of surfactants or organic acids is not desirable.
2. Spray water rinse.
3. a) Pumice scrub (un-activated pumice only) or
b) Scotchbrite scrub.
4. Spray water rinse.
5. Sponge roller or cold air blow to remove excess water.
6. Hot air (knives).

Surface must be absolutely clean and dry prior to printing which must be accomplished within 4 hours to avoid tarnishing of the surface.

Screens

Ronascreen 1600 series should be printed through well tensioned screens of monofilament polyester. Suitable meshes are 54T - 120T threads per cm. Recommended tension required to produce low snap-off (print-gap) and thus distortion-free images is not less than 18 N/cm^2 .

In order to accommodate difficult track geometry it may be necessary to mount the screen material on the frame at an angle. Whilst 45°C is ideal $7 - 15^\circ\text{C}$ will prove effective. Setting the squeegee at an angle, rather than perpendicular, to its direction of travel, will also improve filling of inter track spaces.

Squeegee

Ronascreen 1600 series resists are designed to print at high speeds and with no smear. Squeegee blades of 80 - 85 Shore "A" durometer should be used.

Curing

UV light, wave length 365 nanometers, 2000 - 4000 millijoules.

Cure will depend upon film thickness, light source and conveyor speed.

The use of a Leneta gauge for depth of cure or a light integrator (in joules/cm^2) for exposure rate are recommended.

However, the following information is offered as a guide:

All lamps at 80 Watts/cm (200 Watts/in.)

1 Lamp	20 micron deposit thickness	2 metres (6 ft)/minute
2 Lamps	20 micron deposit thickness	4 metres (12 ft)/minute
3 Lamps	20 micron deposit thickness	6 metres (18 ft)/minute



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HANDLING

When handling UV curable products care should be taken in accordance with the recommendations in the safety sheet.

STORAGE CONDITIONS

Ronascreen 1600 series inks should be stored in a cool dry condition away from direct sunlight or other sources of ultraviolet light. Recommended storage temperature range is 5 - 25°C. Correct storage should ensure a shelf life of at least 24 months.

For further information, contact:

Electra
Roughway Mill
Dunk's Green
Tonbridge
Kent TN11 9SG
ENGLAND

Tel: +44 (0)1732 811 118

Or visit our Website for details of local offices and Distributors

www.electrapolymers.com

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