



TECHNICAL DATA SHEET

RONASCREEN 1400/5160 Flex

UV-CURABLE FLEXIBLE ETCH RESIST

PRODUCT DESCRIPTION

Ronascreen 1400/5160 Flex is a blue, acid resistant, flexible etch resist. It is rapidly stripped by solutions of alkali hydroxides or strong organic bases.

FEATURES & ADVANTAGES

Ronascreen 1400/5160 Flex is for use in high volume Print and Etch processes, and particularly for flexible substrates and circuitry. It is formulated to allow high squeegee speeds and cure rates with NO compromise on print definition, etch resistance or ease of stripping.

- **Flexible.** Resist layers will withstand better than 1,5mm radius bending (3mm mandrel, 180°) when cured under recommended conditions.
- **Easy stripping.** Cured films may be stripped quickly and into fine particles by a range of inorganic and organic bases.
- **Fast curing.** UV-curing energies as low as 0.6 – 1.0J/cm² may be used to give tack-free, acid-resistant coatings
- **Solvent-free.** 100% solidifying matter eliminates solvent bubbles and minimises printing issues associated with drying in the screen.
- **Strong blue colour.** Gives good contrast against the metallic substrates, facilitating inspection.
- **Highly structured.** Reproduces crisp, high resolution stencilled images.
- **Economical in use.** Ronascreen 1400/5160 Flex is optimally printed through 100T – 140T mesh, giving extended product coverage.

PRECLEAN: Metallic surfaces should be mechanically or chemically cleaned to give a waterbreak-free surface.
Surfaces **must** be grease-free and completely dry before coating.

REDUCING: **Ronascreen 1400/5160 Flex** is supplied ready to print and does not normally require a thinning addition. If viscosity adjustment is required, use no more than 5% **Electra Reducer ERV3**.



ELECTRA

PRINTING:

Mesh: Print through 100-140T (threads per cm) polyester mesh or the equivalent in stainless steel. If necessary, consult the screen mesh manufacturer to select the right combination of mesh open area relative to circuit design to avoid the Moiré effect on imaging.

Stencil: Direct/indirect or capillary stencil with an 8 -12µm stencil thickness proud of the screen mesh.

Squeegee: 75 degree minimum Shore hardness. The use of a backing plate behind the squeegee may be beneficial..

CURING: Typically 0.6 – 1.4 J/cm² UV energy from an air-cooled, unfiltered mercury vapour lamp. ‘Doped’ mercury lamps may also be suitable.
Under-exposure causes insufficient polymerisation, giving soft sticky coatings. Over-exposure causes embrittlement, but may also lead to ‘blocking’ where exposed films are stacked or wound whilst still hot.

The actual required energy intensity will depend upon:

- *The spectrum of the exposing radiation.* Standard medium-pressure mercury lamps emit energy over a wide spectral range, from IR to mid-UV. Furthermore, older lamps generate an increasing proportion of IR, whilst UV output diminishes.
Ronascreen 1400/5160 is cured by near- to mid-UV radiation, but some IR is beneficial to cure by increasing reaction rate. However, plastic substrates in particular may be damaged by excessive heat, necessitating lamp cooling or IR filtration. This in turn will extend the required exposure time.
- *The nature of the substrate.* Foils and other flexible substrates have reduced thermal capacity, so surface temperatures during curing may be higher unless they are in close contact with a backing plate of high thermal capacity. Excessively high curing temperatures can cause embrittlement by loss of monomeric ingredients, as well as substrate warping.
- *The printed thickness of the resist.*

STRIPPING: 2 to 5% solution of sodium or potassium hydroxide at 30-50°C is recommended, preferably applied by spray. Water-soluble organic bases such as diluted monoethanolamine may also be used. The stripped form of the resist is generally fine particle or flake, but particle size and stripping speed will be affected by the nature of the stripping bases, the condition of the bath (age and resist loading) and temperature.

CLEANING: Screens can be easily cleaned using Electra Universal Screenwash SW100.

STORAGE: Minimum of 2 years from date of manufacture when stored in cool dry conditions.

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