

FOTECOAT 1016

Dual-Cure Emulsion for Industrial and Electronic Application

1. APPLICATIONS

An Emulsion for General Industrial Printing and specifically developed to enable manufacture of high quality stencils to print functional materials used during fabrication of electronic devices.

2. GENERAL CHARACTERISTICS

- Red dual-cure emulsion for printing UV-cured, solvent- and water-based inks
- Extremely solvent resistant photo-emulsion specifically designed for the most demanding industrial printing applications
- Capable of 20 micron resolution with super sharp definition
- Precisely & cleanly bridges the smallest mesh openings at all stencil aspect ratios
- 32% solid content and medium/low viscosity for optimum control of wet on dry coating process

3. DIRECTION FOR USE

Handle under yellow safelight or low wattage tungsten lights. Avoid exposure to daylight, quartz/halogen lamps, cool white fluorescent lamps or discharge lamps.

Sensitizing and mixing

Prepare diazo powder as per instructions on the bottle. Add the entire contents to the emulsion and mix thoroughly until a smooth consistency is obtained. Write the date of sensitizing on the label and then cover the sensitized emulsion and let stand for a few hours to enable air bubbles to escape. Store sensitized emulsion in cool conditions and use within one month for best results.

Mesh preparation and degreasing

Degrease and abrade new mesh with **FOTECHEM 2023** (abrasive gel) in order to optimize stencil adhesion dry and store the screen in a dust free, dry environment prior to coating.

For further applications, thoroughly degrease the mesh prior to use with **FOTECHEM** degreasers, like **FOTECHEM 2022** or **2033**.

Coating

Using a high quality scoop coater or coating through, apply one or two coats to the substrate side of the screen, followed by one or two coats on the squeegee side. For a thicker stencil, apply additional coats to the squeegee side prior to drying. For a higher quality stencil with a minimal increase in stencil thickness, apply one or two additional coats to the substrate side of the screen after the initial coats have dried.

Drying and storage

Thoroughly dry the coated screen at a maximum temperature of 40°C in a dust free, dark or yellow light area, with the substrate side facing down to optimize stencil quality. Coated screens should be stored in a dust free, dry, safelight environment and used within one week for best results.

Exposing

Ensure that all surfaces, emulsion, film and glass, are free of dust to minimize pinholes. Contact the emulsion side of the positive with the substrate side of the screen and secure in position before placing the screen in a suitable vacuum frame. Many variables, such as lamp type and age, distance from lamp to screen, mesh type and coating thickness, can affect exposure time.

Perform an exposure test with one of two calculators now available (Exposure Calculator and 21 Step Sensitivity Guide) to determinate correct exposure time for a complete cure.

Developing

Wet both sides of the screen with a strong, finely divided spray of water and continue washing out until all image areas are fully open. Rinse both sides of the screen and dry thoroughly before use. A properly exposed and developed screen will not leave residues on the squeegee side.

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Reclaiming

Remove all ink residues immediately after printing with an appropriate solvent. Remove stencil with **FOTECHEM** stencil removing products like **FOTECHEM 2042 S** and a high-pressure washer spray.

For stains and ghost images, use **FOTECHEM** haze removers, like **FOTECHEM 2080** or **2089**, followed by a high-pressure washer spray.

4. PROBLEM SOLVING

Poor coating quality

- Properly clean, degrease and rinse the screen to remove all residues and traces of chemicals.
- Properly and evenly tension the fabric.
- Clean and ensure the scoop coater does not present any defect edge.

Poor detail or difficulty washing out image

- Ensure emulsion and coated screens are handled in safelight conditions only.
- Ensure a minimum vacuum of 0.66 bar (500 mm Hg) on vacuum gauge for optimum contact of the positive.
- Optimize exposure time and use only high quality film positives.
- Do not store sensitized emulsion or coated screen at high temperatures.

Emulsion falls off, extreme pinholes or severe stencil breakdown during printing

- Ensure that damp screens are not being exposed.
- Only expose screens with an even and consistent coating thickness.
- Ensure that stencil has not been severely underexposed.
- Ensure mixed emulsion is not too old, has been correctly sensitized and has not been stored at high temperature.

Difficulty reclaiming screens

Optimize exposure time and properly rinse the squeegee side of the screen during developing to remove all residual traces, especially when using higher mesh count dyed fabric.

5. HEALTH AND SAFETY

Before using, refer to appropriate Safety Data Sheet.

6. STORAGE AND PACKAGING

When sealed in the original container and stored in cool conditions, **FOTECOAT 1016** will maintain original properties for 18 months from the date of production. Available in 1 kg, 4.5 kg and 200 kg containers. Packaged with associated diazo.