SAATI

chemicals technical data

THIK PLUS FILM

GENERAL CHARACTERISTICS

Light green photopolymer film thickness ,solvent and water resistance for the production of thick stencil by the direct/indirect method, ideal for ceramic, glass, electronic and textile application

- Minimal exposure time
- Fast and easy to water development
- Excellent resolution and edge definition
- Excellent flexibility and elasticity
- Can be use it with excellent stencil results also in the cold countries
- Excellent resistance to water and solvent-based and UV-cured inks
- Available thicknesses from 100 up to 700 microns
- Perfect for high density printing
- Non-hazardous and biodegradable.

DIRECTIONS FOR USE

Film storage

Opened and unopened sheets of film should be
stored at temperatures of less than 80°F.

Handling the film

The film should be handled under low wattage tungsten or yellow fluorescent lighting. Unused film should be stored in the provided packaging. Avoid kinking the film as this could affect adhesion to the mesh. The film should be handled wearing light cotton or lint-free gloves to avoid contact with the emulsion surface. Avoid contacting the film surface with moisture.

Mesh preparation and degreasing

Thoroughly degrease mesh prior to use. We recommend the use of a degreaser which also acts as a wetting agent of the fabric such as Direct Prep 2. New mesh should be degreased and abraded with Direct Prep 1 in order to optimize stencil adhesion. After drying, screens should be stored in a dust free, dry environment prior to coating.

Adhering to the mesh

Several methods can be employed to adhere Thik Plus film. Cut the film to desired size and place the film on a dry, flat surface.

Capillary film method

Remove all dust from the emulsion side of the film. Spray the mesh with water and wipe the excess water from the perimeter of the frame to avoid water drops running into the adhered film. Contact the leading edge of the film with the top of the wet screen upright and allow the wet screen capillary action to adhere the film to the mesh. Remove excess moisture from the inside of the screen with a lightweight window squeegee. Wipe excess water from the perimeter of the frame with an absorbent cloth then proceed to drying.

Direct/Indirect method

Place the emulsioned film side up on a raised surface. Place the substrate side of the screen onto the film. Apply a bead of Saatichem Textil PV or Thick Backing Emulsion to the top edge of the film. Squeegee the emulsion several times until film is completely adhered to mesh.

Backing with emulsion method

Mount the Thik Plus Film to the mesh using the Capillary Film Method, allow screen to dry and remove backing. Apply two coats of Saatichem Textil PV or Thik Backing Emulsion to the squeegee side of the screen and proceed to the screen-drying step.

Drying the screen

The screen can be dried with cold or warm air, maximum 100°F. Thorough drying is essential for optimum results. When the support has been peeled off continue drying for a few minutes to ensure the film is completely dry. Drying can be done in yellow light conditions.

Storage of screens

After applying the film to the screen and drying, the screens can be kept in a dark place for up to a week before exposure, provided that reasonable temperature and humidity conditions are maintained. If storage of screens is foreseen, we recommend not to remove the backing sheet until screen is ready to be exposed.

Exposure

Exposure can be accurately determined for any combination of mesh count/color by using Thik Backing Emulsion as follows:

- Mount Thik Plus film to the mesh as a capillary film and then dry.
- Apply two coats of Thik Backing Emulsion to the squeegee side and dry.
- Carry out a stepped exposure sequence using a range of times.
- After developing choose the lowest time that is

able to harden the blue emulsion on the squeegee side of the screen sufficiently to withstand a normal developing procedure.
Ensure that all surfaces, emulsions, 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. Refer to the table as an example for the exposure times.

Washout and development

We recommend to use hot water (104°F – 113°F) (40-45°C) to ensure rapid and complete development.
Wet both sides of the screen with a soft sponge and continue to wash out working on print side until all image areas are fully open.
End the process with a high pressure water jet (20-30bars).
High adhesion of Thik Plus Film will guarantee a perfect tightness even of smallest and delicate details during the process.

Post Exposure

Post-exposing with daylight or exposure lamp is recommended to produce a water-resistant stencil.

Reclaiming

Remove all ink residues immediately after printing with an appropriate solvent. Remove stencil with Remove ER1, ER2, ER5 or ER10 and a pressure washer. For stains and ghost images, use Remove HR3 followed by a pressure washer.

HEALTH AND SAFETY

Before using, refer to appropriate material safety data sheets. Although no adverse effects are to be expected from handling the film, the wearing of rubber gloves is advised as good industrial hygiene. Should skin contact occur, wash thoroughly with soap and water.

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.

Poor detail or difficulty washing out image

- Ensure film and coated screens are handled in safelight conditions only.
- Ensure a minimum vacuum of 0.66 bar (500mm or 20 in Hg) on vacuum gauge for optimum contact of the positive.
- Optimize exposure time and use only high quality film positives.
- Do not store film or coated screens at high temperatures.

Film falls off, extreme pin-holing or severe stencil breakdown during printing.

- Ensure that damp screens are not being exposed.
- Ensure that stencil has not been severely underexposed.

Difficulty reclaiming screens

- Optimize exposure time
- Thik Plus film has limited solvent resistance; do not use aggressive solvents to clean the screen.

Stability

Rolls or films opened and closed should be stored at temperatures not exceeding 80°F (25°) to maintain their properties. When sealed in the original container, protected from light, humidity and heat, THIK PLUS FILMS have a stability of at least 36 months from the date of production.

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Exposure Guidelines
6 kW metal halide lamp at 1.5 meters (60")

Thik Film	12PW260 white	24PW120 white	32PW70 white	43PW80 white	43PW80 coloured
100	70 sec	60 sec	50 sec	50 sec	100 sec
150	80 sec	70 sec	55 sec	55 sec	110 sec
200	120 sec	75 sec	60 sec	60 sec	150 sec
250	160 sec	100 sec	90 sec	90 sec	190 sec
300	240 sec	180 sec	120 sec	150 sec	300 sec
400	400 sec	300 sec	240 sec	300 sec	400 sec
700	800 sec	600 sec	480 sec	600 sec	800 sec