Precision

SECTION 5

PRE-PRESS & RECLAIM

• PRE-PRESS •

After Artwork, Pre-Press is what you do before anything else can occur. This is where you prepare your screens for exposure, washout and set up. You will avoid a_lo of problems later on if you take the time in the beginning to prepare property. In screen print.mg. short cuts usually result in the job taking longer.

PREPPING THE SCREEN

New screens should be degreased (cleaned) before you apply your stencil material. Just through handling screen mesh can acquire dust, oil, grit, dirt, etc. and it just makes sense to clean it before you coat it. If you don't clean the screen you run the risk of either the capillary film not adhering well or your direct emulsion having a weak spot, either of which could cause problems in the middle of a job. Use a degreaser designed for screen washing or a non-lanolin liquid soap for degreasing. Precision offers a product for this purpose which can be ordered through your Precision Representative. Simply wet both sides of the screen mesh and apply the degreaser using the white scrub pad provided with your supply package. A little goes a long way so use it sparingly. After you've applied the degreaser and scrubbed both sides of the mesh wash it out thoroughly with plain water. Water temperature does not matter, just make sure you have all the degreaser washed out. Blot the screen dry using newsprint or paper towels. Check to make sure there is no lint or other obvious particles left on the screen. Place the screen in the Precision drying cabinet with the fan turned on to speed up drying.

MESH ABRADING

For capillary film use we recommend abrading the mesh before applying the film. The mesh abrader that is supplied with your system is applied using a scrub brush. Wet the screen, apply the mesh abrader to the bottom of the screen (print side] and scrub over the entire surface. This roughens the surface of the mesh and gives it a "tooth" for the film to better adhere to. Scrub vigorously and wash out thoroughly with water. Allow to dry and move to the next step.

THE STENCIL SYSTEM

The method used to cover a blank screen with a photosensitive film or coating is referred to as a stencil system. The two most commonly used stencil methods are direct emulsion and capillary film. Just as there are different screen meshes for various applications there are different films and emulsions for a variety of applications as well.

- **Direct Emulsion** is a thick liquid emulsion that is applied directly to the screen mesh with the use of a Scoop Coater. Generally it is applied using a 1 & 1 procedure which simply means 1 scoop coat on each side of the fabric. Direct emulsions can be built up in thickness if needed by applying more coats. The direct emulsion available through Precision is a pure photopolymer variety that requires no mixing and is fast exposing.

Procedure:

1. Be sure your screen is clean and dry.
2. In a safe or subdued light area pour the liquid emulsion into a scoop coater the proper size for the screen you are coating. Your scoop coater should be wide enough to completely cover the image area allowing you to coat the screen without overlapping your scoop coats. Use the sharp edge of the coater and check that there are no nicks or dings in the edge as they will leave marks in your coating. In most cases not a big deal but certainly unacceptable to the purist.

3. Start with the back or print side of the screen. Stand the screen on edge, leaning_slightly, and place the leading edge of the scoop coater against the bottom of the screen 1ust above the frame. With the coater edge in contact with the open mesh tip it so the emulsion starts to flow to the leading edge. When it has flowed evenly to the edge of the coater begin a slow, steady pull from the bottom to the top, all in one motion. When you reach the top lean the scoop back so the emulsion flows back into the trough.

4. Now turn the screen around and turn it upside down. This allows you to be coating the mesh in the opposite direction of the first coat. Repeat the coating procedure on this, the squeegee side, of the screen.
5. Place the coated screen flat inside the drying cabinet feature of your Precision press and allow to dry thoroughly. Be sure the door is closed and the screen remains in the dark until ready for exposure.

- **Capillary** Film is a photosensitive emulsion that is applied to a clear carrier sheet. Capillary film is applied to an exacting micron thickness that controls the ink deposit. In some screen print applications measured ink deposits are critical and capillary film combined with mesh selection is what controls that deposit. In textile printing measured ink deposits are rarely considered and control is done through mesh selection. Certain garment applications, such as four color process, are controlled through a combination of mesh and film selection. The object is to limit dot gain to ensure clean, crisp prints.

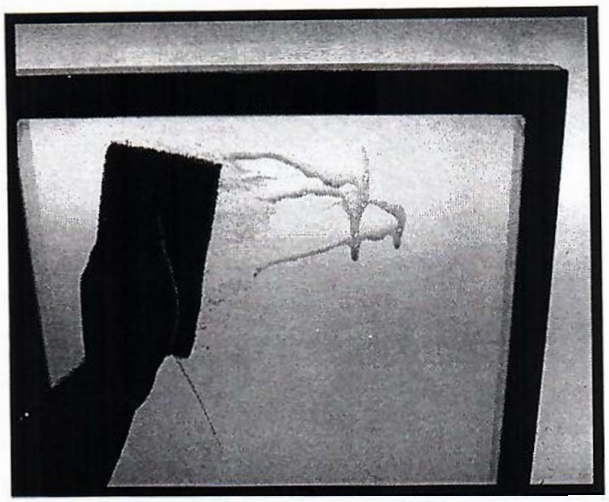
Procedure:

1. Be sure your screen is clean and dry.
2. Lay the black board, included in your Precision supply package, on a flat surface.
3. Remove a piece of capillary film from the light safe package and lay it on the board. Be sure the "DULL" side faces up. This is the emulsion side and is what adheres to the screen. The shiny side is a "carrier sheet" that will be removed when film dries.
4. Lay the clean, dry screen on top of the film.
5. Using plain water in a squirt bottle, spray the film directly through the mesh in a side-to-side painting motion. The film will darken as the water hits it so you know if you are applying enough. Do not soak the screen.
6. After the water has been applied squeegee off the excess using very little pressure, just enough to take off any puddles or streaks that may have formed.
7. Blot the frame and any other area that may have residual water.
8. Place the coated screen inside the drying cabinet and allow to dry thoroughly.

DRYING THE COATED SCREEN

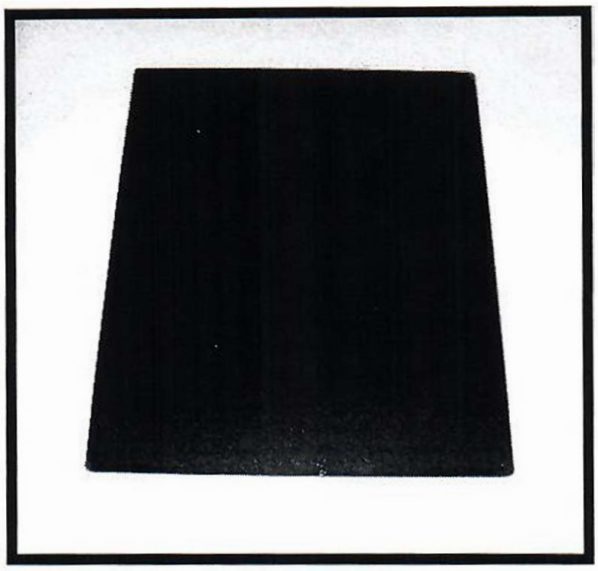
Screens need to be thoroughly dry before exposing. Circulating air such as found in your Precision drying cabinet accelerates the process greatly. Drying times for direct emulsion will depend on how thickly it was coated. Capillary film is determined by the micron thickness. Direct emulsion generally dries faster since the water can evaporate from both sides. Capillary dries from one direction only due to the clear carrier sheet on the back. In either case the longer the screen is allowed to dry the better. Overnight is best, in a pinch you might be able to use one in an hour.

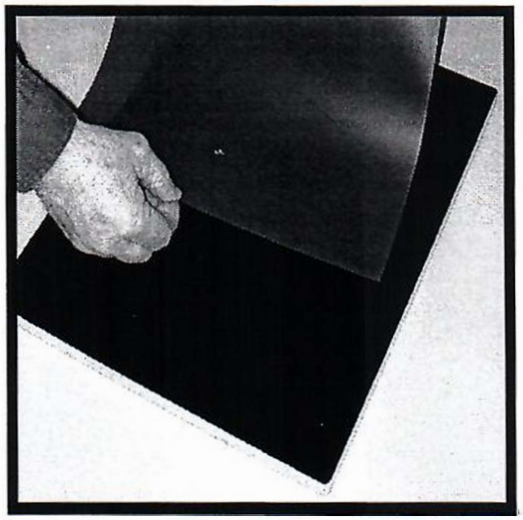
PRE-PRESS



Step 1. Use abrader to roughen the screen before applying capillary film. Gently scrub back size of screen, rinse thoroughly.

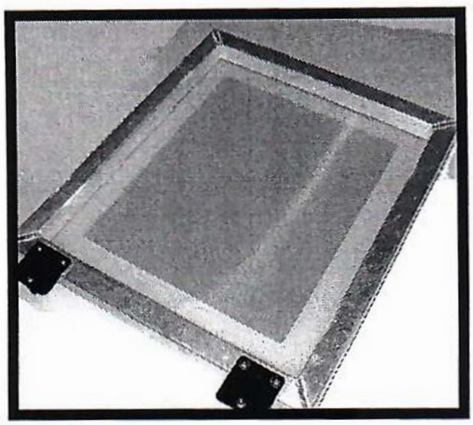
Step 2 Place your exposure board on a flat surface. Place your screen close by and get a piece of capillary film. Make sure not to exposure the entire package of capillary film to light.



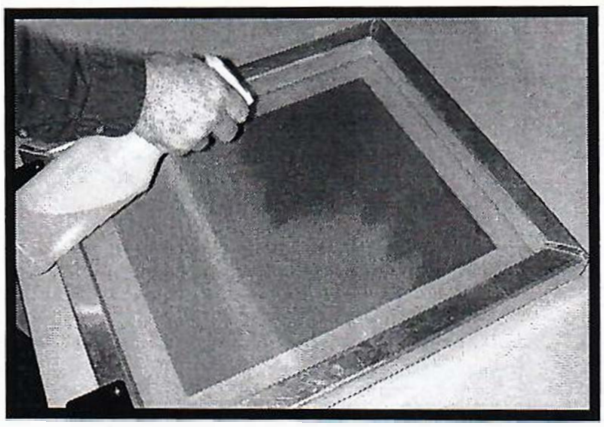


Step 3. You will notice the capillary film has two sides, shiny and dull. Place the shiny side down against the exposure board.

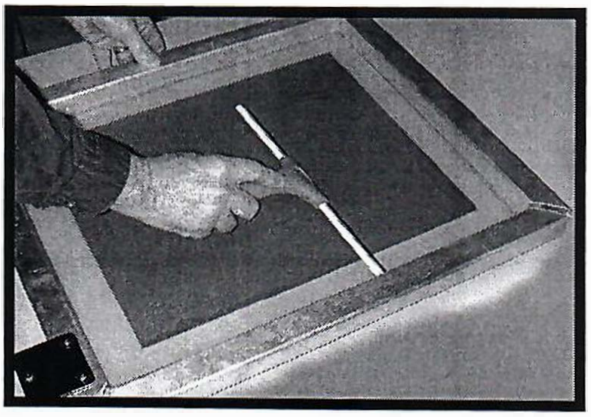
PRE-PRESS



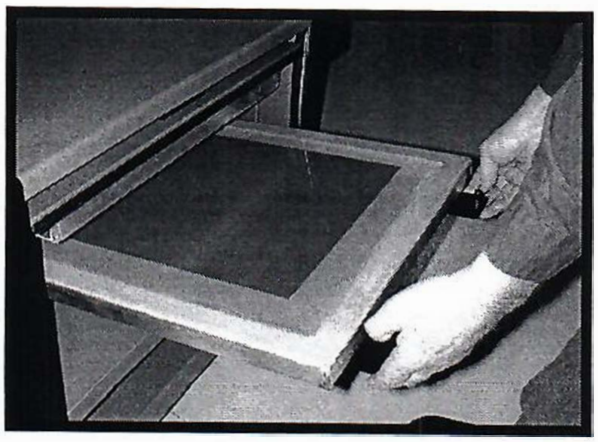
Step 4. Place your screen on top of the capillary film.



Step 5. Spray screen with clean tap water. Cover screen completely so it turns one solid color. Make sure there are no pin holes showing.



Step 6. Squeegee off excess water



Step 7. Place into drying rack. Close door, turn on fan. Screen should be dry within 1/2 hour.

EXPOSING THE SCREEN

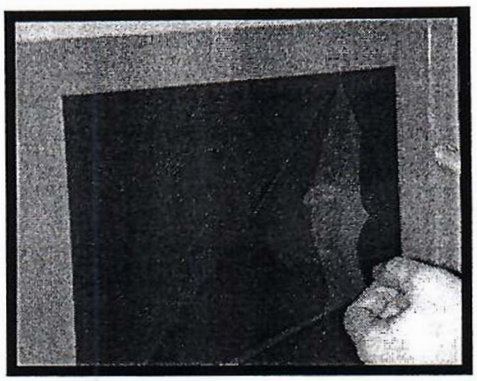
1. Place your Precision Exposure Module on the platen arm and secure. Plug in the power cord and turn on the main power switch.
2. Using the 3-pin artwork registration feature, place your first film positive in place on top of the glass.
3. Remove a dry, coated screen from the drying cabinet. **REMOVE***carrier sheet from capillary film on the back of the screen!*
4. Place the Taper Pins that are mounted on the back of the screen into the receiver holes located at the back of the cabinet. Lay the screen flat on top of the film positive.
5. The bottom of the screen and the film positive should now be in direct contact. Place the black opaque board *foam side down* directly on top of the screen mesh covering your image area. This board keeps light from scattering around the edges of the image during exposure and also helps keep the positive and the mesh in contact. Adding 20lbs weight to the top of the board is recommended for superior exposure.
6. Using the UP/DOWN arrows on your control panel, set the required exposure time. 12 minutes is recommended for the capillary film included with the Precision package. Exposure times will vary depending on thickness of stencil. Exposure testing is always recommended with new equipment to determine your exposure range. For a one & one pass direct emulsion screen begin exposure testing for approximately 4 minutes. For Capillary film of 25 microns test your first exposure at 12 minutes.
7. Turn on the exposure lamps. When your set time has elapsed the lights will turn off and you will hear an audible beep. Remove the black opaque board and remove the screen from the exposure unit. Take the screen directly to the washout sirik. Do not allow the unexposed image area to remain in the light as it will begin to harden and will be difficult to rinse out.

RINSING OUT THE IMAGE

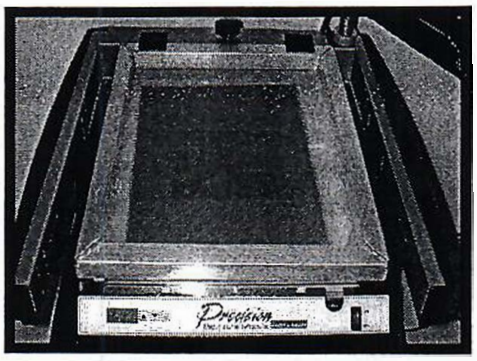
1. Wet both sides of a direct emulsion coated screen thoroughly. For Capillary film coated screens lightly wet the squeegee side and thoroughly wet the print side.
2. Let the wet image area sit for a few seconds while the unexposed emulsion softens. Continue the washout process, spraying the screen from the print side, until the image is completely open and no residual emulsion is left. Hold the washed out screen up to light and inspect to make sure your image is clear and the edges are sharp and well defined.
3. Blot the washed out screen with newsprint or other absorbent material. Place the screen back into the drying cabinet to accelerate the drying.

EXPOSING THE SCREEN

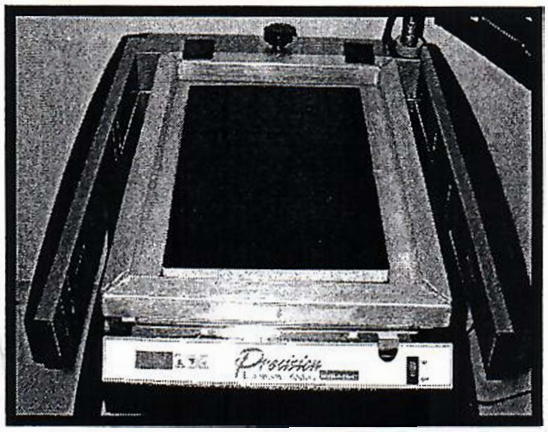
Step 1. Place artwork on exposure unit.



Step 2. Remove dried screen from dark room / drying area. Remove carrier sheet from back of capillary film. Carrier film will make a "tearing" sound as it is peeled off. This sound is made when capillary film is completely dry. If it doesn't, then the film is still damp and may come off with the carrier sheet, ruining the screen.

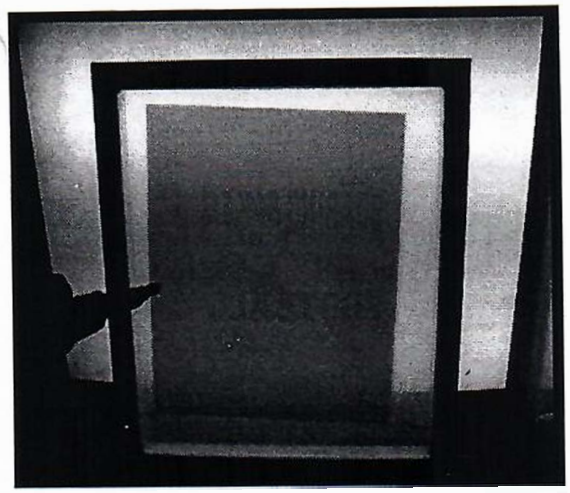


Step 3. Place screen on exposure unit. Screen should lie completely flush against the glass of the exposure unit.



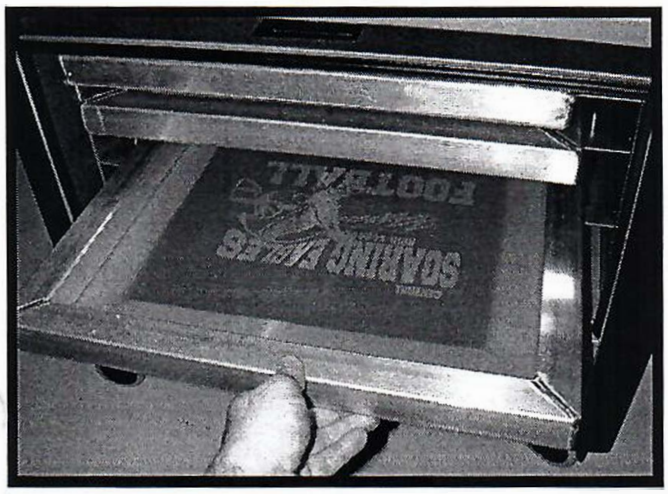
Step 4. Place blackout board over artwork, foam side down. Place at least 20 lbs of weight on top of board to ensure that no light will enter. A typical dumbbell weight is the most efficient. Using the arrow keys, put in the exposure time on the unit. Typically, 12 minutes is the minimum exposure time recommended. Time may vary several minutes.

EXPOSING THE SCREEN



Step 4. After exposing the screen, take your screen to your washout area. Using the washout attachment, gently spray the back side of your screen, let soak. After soaking for several minutes, rinse out image area.

Step 5. Continue to rinse until the image starts to appear. Make sure to rinse evenly, some parts may take awhile longer to rinse out than others. It may take several minutes for image to wash out.



Step 6. After rinsing out the image, place back into drying cabinet to dry screen before printing.

• RECLAIM •

CLEANING THE INK OUT OF THE SCREENS

When you're through with the print run, remove the residual ink from the screens and return it to the original container. Use a plastic spatula or anything that does not have a sharp edge or point that might puncture the mesh. After you have removed all of the ink that you can, wet a rag or paper towel with **"Ink Zapper"** and wipe the entire screen down on both sides. When you are satisfied that your screen is as clean as you can get it, remove the tape. Wet another clean rag with Ink Zapper and clean it one more time. Your screen is now ready to either store or reclaim.

RECLAIMING THE SCREEN

If you are not storing the imaged screen for future use then you probably want to reclaim it so you can use it for a different print job. To reclaim a screen, follow these steps"

1. Be sure the screen is as clean as you can get it, all the ink residue is out and the tape has been removed.

2. Wet both sides of the screen using **"The Stripper"** screen reclaiming liquid and work it over both surfaces using the white scrub pad provided with your supply package. Let it sit and soften for a couple of minutes. Do not allow the stripper to dry.

3. Using the hose and adjustable nozzle you received with your package, apply water, under pressure, and wash the screen thoroughly until all traces of emulsion are gone.

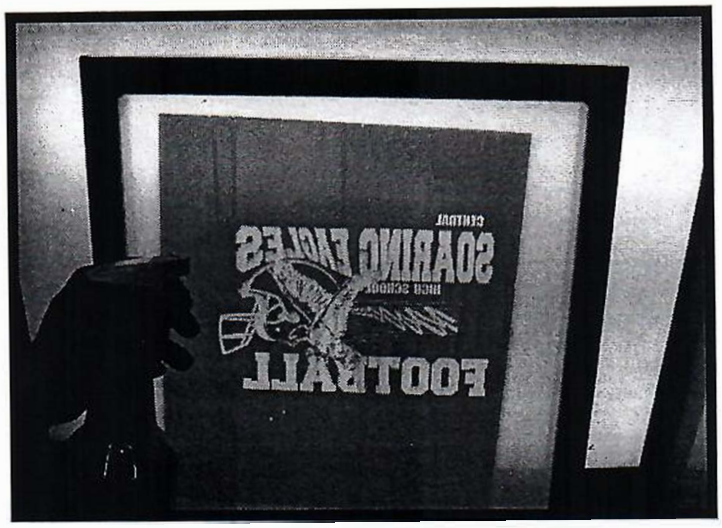
4. Blot the reclaimed screen with newsprint or paper towels to remove the excess water and place the screen in the drying cabinet. When the screen is dry it is ready to re-coat.

GHOST IMAGE REMOVAL

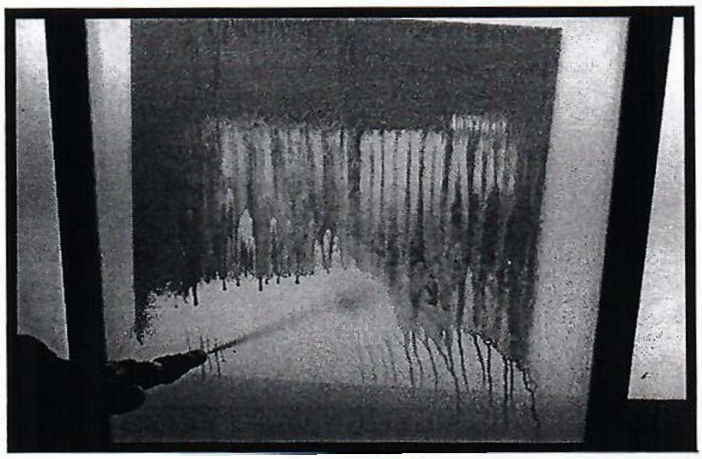
After a screen has been reclaimed a few times you may notice a residual image or "ghost" of a former print that remains in the screen even after reclaiming. You hold it up to light and it appears clean but there is still a faint image. This is caused by tiny particles of ink residue that have managed to remain amongst the strands of the mesh. In most instances it will not cause a problem with your next print job. In extreme cases it can show up in your new print. In any case it can be removed using the **"Ghost Be Gone"** haze remover included with your supply package.

Begin with the screen being clean, reclaimed and dry Apply Ghost Be Gone to both sides of the ghost image and scrub it in using the red scrub pad. Rub vigorously in circular motions and let soak for several minutes. Using high pressure, wash the area with plain water. This should remove it. For stubborn ghosts you may have to repeat the process. Dry the screen and it is ready to re-coat.

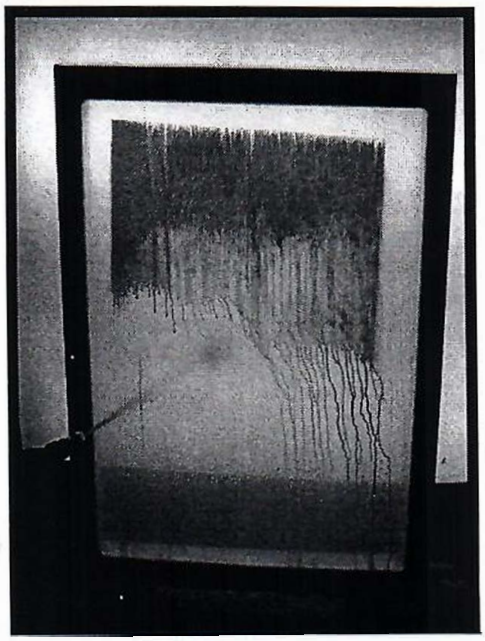
RECLAIM



Step 1. Spray with emulsion stripper. Completely wet screen. Let soak for several minutes.



Step 2 Starting from the bottom, use the washout attachment with hot water to spray off the emulsion.



Step 3. Continue spraying until screen is clean. Use degreaser after you have sprayed all emulsion from screen. Let dry.