

## EZ-FILM™ -30 and -50

### TEXTILE CAPILLARY FILM; PRICED AS A VIABLE ALTERNATIVE TO DIRECT EMULSION; FAST DRYING; FAST-EXPOSING PURE PHOTOPOLYMER (SBQ)

**EZ-FILM-30** and **EZ-FILM-50** are pure photopolymer (SBQ), pre-sensitized capillary films appropriate for halftone work and general sportswear printing. Both films are pink in color and coated on 300-gauge matte polyester. **EZ-FILM-30** (30 microns) is best used with mesh counts ranging between 90 and 165 threads/cm. (230 – 419/inch); **EZ-FILM-50** (50 microns) is recommended for use with mesh counts ranging from 33 to 77 threads/cm. (86 – 196/inch.). **EZ-FILM** can be adhered with plain water, or with **QTX®** emulsion in the direct/indirect mode.

#### INSTRUCTIONS

##### **Step 1: PREPARE THE FABRIC**

Used or surface-treated fabric need only be degreased using **Screen Degreaser Liquid No. 3**, dilute **Screen Degreaser Concentrate No. 33**, or **Magic Mesh Prep**. (Mechanical abrasion, an option for new fabric that is not surface treated, increases the surface area of fabric for a better mechanical bond of the stencil, increasing printing run length. Use **Microgrit No. 2** before degreasing. Abrading and degreasing can be combined in one step with **Ulanogel 23**.) Use **Magic Mesh Prep** or **CDF Mesh Prep No. 25** to promote a uniform wetting of the mesh. (**Magic Mesh Prep** also acts as both a degreaser and an antistatic treatment.) Rinse thoroughly.

##### **Step 2: ADHERE EZ-FILM TO THE FABRIC**

Work under yellow safe lighting to avoid pre-exposing **EZ-FILM**.

Standard Method: Position a piece of **EZ-FILM** on a flat surface, emulsion (duller) side up. Place the printing side of a wet screen (directly following the fabric preparation rinse) on top of the film. The film will darken as it is wetted. Use light pressure to press out to the edge of the film any bubbles or gaps between the film and the mesh. Make a single squeegee stroke across the squeegee side. Wipe off any excess water.

“Roll-Down” Method: Roll the film, emulsion side out, around a small-diameter plastic tube (ca. 1” – 1 ½”; 2 ½ X 4 cm.). If the screen fabric is not already wet, soak it from the squeegee side. Contact the edge of the roll to the printing side of the mesh at the top end of the screen.

Unwind the roll, maintaining firm contact with the mesh. Make one light squeegee stroke across the squeegee side to remove excess water.

Direct/Indirect Method Using QTX emulsion: Position a piece of **EZ-FILM** on a flat surface, underneath a prepared, *dry* screen. Place a piece of tape on the inside of the screen along one edge of the film. Place another piece of tape on the inside of the screen along the opposite edge of the film. Pour a bead of **QTX** emulsion across one piece of tape. Using a soft squeegee, "print" the **QTX** through the fabric onto the film, and continue the squeegee pass until reaching the tape on the opposite side. Wait 30 seconds, then make a reverse "print stroke." Wait about one minute before lifting the frame for drying. (When using the Direct/Indirect Method, add 50% to the exposure time shown on the Base Exposure Table to be sure of exposing the **QTX** emulsion that was used to adhere the film.)

##### **Step 3: DRY THE SCREEN; REMOVE THE BACKING SHEET**

Dry the screen thoroughly at room temperature. Use a fan to speed drying. If possible, use a dehumidifier in the drying area. Under humid conditions, dry the screen in a commercial dryer with filtered air < 104° F. (40° C.). Immediately before exposure, remove the backing sheet.

##### **Step 4: CALCULATE THE APPROXIMATE EXPOSURE**

From the Base Exposure Table (on the reverse), identify the light source you are using. The exposure time shown is your Base Exposure Time. Multiply your Base Exposure Time by all relevant Exposure Variable Factors (reverse) to find your Approximate Exposure Time.

##### **Step 5: DETERMINE THE OPTIMAL EXPOSURE TIME**

Make a Step Wedge Test (instructions can be found on the Ulano Web site: <[www.ulano.com](http://www.ulano.com)>) or use the **Ulano Exposure Calculator Kit** or the **Ulano ExpoCheck**—carried through to actual printing—to determine your optimum exposure time. Optimum exposure is indicated: ■ At that exposure time when the edges of the positive do not "resolve." ■ The squeegee side of the stencil is hard and not soft or slimy. ■ The print best duplicates the test positive *at the level of resolution that the job requires*. (Note that, since resolution is relative to stencil thickness, it is not possible to resolve a line finer than the overall thickness of the fabric and stencil.)

##### **Step 6: WASHOUT:**

Use a gentle spray of water on the squeegee side, then complete the washout from the printing side until the image area is clear. Rinse both sides until no soft emulsion is left and no foam or bubbles remain, finishing on the squeegee side with a gentle spray. Blot excess water from both sides of the screen with newsprint. Dry the screen. (It is possible to soak the screen in a tray of water to accelerate the washout spray time.) A fully-exposed stencil will be robust enough to withstand washing and soaking.

##### **Step 7: TOUCHUP AND BLOCKOUT**

For blockout, use **Screen Filler No. 60** or **Extra Heavy Blockout No. 10** on the dry fabric. For touchups, use either **Screen Filler No. 60** or **Extra Heavy Blockout No. 10** thinned with water.

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**Step 8: RECLAIM THE SCREEN****Caution: Aggressive solvents may cause difficulties in reclaiming EZ-FILM.**

Remove ink with **All-Purpose Ink Wash**, the ink manufacturer's recommended solvent, or the least aggressive solvent possible. Degrease with **Screen Degreaser Liquid No. 3** to remove ink or solvent residues. Rinse with a powerful spray. Brush **Stencil Remover Liquid No. 4** or **Stencil Remover Paste No. 5** on both sides of the screen. Let the screen stand for no more than 5 minutes. Do not allow the stencil remover to dry on the screen, as this can result in a permanent stencil. Wash with a strong spray of water. Use **Walk Away Haze Remover** or **Haze Remover Paste No. 78** to remove ink residue, haze, or ghost images.

**STORAGE:** Unexposed screens can be stored in a dark, dry, cool environment for up to one month. Unused film can be stored in its tube for up to one year. High heat and humidity reduce shelf life.

**BASE EXPOSURE TABLE for EZ-FILM ORANGE-30 and -50 at 40 inches (100 cm.) on white polyester or nylon.**

Light Source Carbon Arc:	EZ-FILM-30				EZ-FILM-50
30 amps	78 sec.				146 sec.
110 amps	21 sec.				41 sec.
<b>Metal Halide:</b>					
1000 watts	52 sec.				97 sec.
2000 watts	27 sec.				49 sec.
3000 watts	17 sec.				32 sec.
4000 watts	13 sec.				25 sec.
5000 watts	11 sec.				19 sec.
7000 watts	9 sec.				16 sec.
<b>Pulsed Xenon:</b>					
2000 watts	152 sec.				5 min.
5000 watts	61 sec.				115 sec.
8000 watts	38 sec.				72 sec.
<b>Mercury Vapor</b>					
1000 watts	70 sec.				130 sec.
2000 watts	33 sec.				65 sec.
4000 watts	17 sec.				32 sec.
<b>Fluorescent Tubes#</b>					
40 watts	152 sec.				6 min.

#Base Exposure Times at 4 inches (10 cm.) using unfiltered black light tubes. For "cool white" or "daylight" tubes, use at least double the exposure time.

**EXPOSURE VARIABLES FACTORS: variables affecting exposure time**

Mesh		Exposure Distance:		Exposure Distance:	
Dyed Mesh	1.5-2.0	20"/50 cm	0.25	56"/140 cm	1.95
		24"/60 cm	0.36	60"/150 cm	2.25
<b>Imaging</b>		28"/70 cm	0.49	72"/180 cm	3.24
Fine line positive printing	0.80	32"/80 cm	0.64	84"/210 cm	4.41
Fine line reverse printing	1.20	36"/90 cm	0.81	100"/250 cm	6.25
Halftones, to 50 lines/in (20/cm)	0.90	40"/100 cm	1.00		
Halftones above 50 lines/in (20/cm)	0.80	44"/110 cm	1.21		
<b>Adhering</b>		48"/120 cm	1.44		
Adhered with QTX (Direct/Indirect Method)	1.5	52"/130 cm	1.69		
<b>Taped-up Positives</b>					
Tape-up or montage positives, per layer	1.10				

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