

Orange™

ULTRA-FAST-EXPOSING PURE PHOTOPOLYMER (SBQ) TEXTILE EMULSION; ORANGE “MASKING” COLOR REDUCES HALATION, YIELDING FINER RESOLUTION

Orange is a ready-to-use, fast-exposing SBQ-photopolymer direct emulsion formulated for imprinted sportswear printing. Its high viscosity (6,000 – 8,000 centipoise) improves control when coating screens by hand and makes **Orange** a good choice for coarse mesh. Its high solids content (44 - 46%) results in better mesh bridging, especially on coarse mesh, and especially good edge definition, as well as fast drying. The high-contrast orange color of **Orange** “masks” halation and light scattering significantly, thereby improving resolution, and affords easy stencil inspection. With **Orange**, one does not require more-expensive dyed mesh. **Orange** resists plastisols, most washup solvents, and some water-based inks, making it easy to reclaim in automatic stencil removal equipment or by hand. Stencils made with **Orange** are extremely durable, will not become tacky under high humidity conditions, and have excellent exposure latitude. **Orange** is formulated to reduce stencil-making time (coating, drying, and exposure) in shops with high stencil throughput. Its fast exposure speed will also be of interest to low volume printers with weak light sources.

INSTRUCTIONS

Step 1: PREPARE THE FABRIC

Used or surface treated fabric need only be degreased using **Magic Mesh Prep**, **Screen Degreaser Liquid No. 3**, or dilute **Screen Degreaser Concentrate No. 33**. (Mechanical abrasion is an option for new fabric that is not surface treated. It 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**.) A degreaser, **Magic Mesh Prep** also serves as a wetting agent and antistatic treatment. Screen fabric treated with **Magic Mesh Prep** can be coated with emulsion more evenly and will transfer ink more readily during printing.

Step 2: SENSITIZING

Orange is fully presensitized. No sensitizer need be added. **Orange** should be handled only under yellow safe light conditions.

Step 3: COAT THE SCREEN

Method 1: Apply one coat of emulsion on the printing side, then one coat on the squeegee side. Dry the screen thoroughly.

Method 2: Apply two coats on the printing side, then two coats on the squeegee side, wet-on-wet. After each coating, rotate the screen 180°.

Method 3: Follow Method 2 (above). Then, after drying the screen, apply two additional coats on the printing side, wet-on-wet.

Step 4: DRY THE SCREEN

Dry multicoated screens (Methods 2 or 3) thoroughly in a horizontal position, printing side down, at room temperature in a dirt- and dust-free area. Use a fan to speed drying. If using a commercial dryer, dry the screen with warm, filtered air, up to 104° F. (40° C.).

Step 5: CALCULATE THE APPROXIMATE EXPOSURE TIME

Refer to the Base Exposure Table (reverse side). Base Exposure Time X Exposure Variable Factors = Approximate Exposure Time.,

Step 6: MAKE A STEP WEDGE TEST

Use Ulano's **Exposure Kit** to test exposures above and below the Approximate Exposure Time, or make a Step Wedge Test following instructions on the “Support Tab” video on our Web site: www.ulano.com. Optimum exposure is indicated when: ■ No positive outline or darkening of the emulsion color is observable if the exposure is increased. ■ The squeegee side emulsion is hard and not slimy after washout. ■ The print best duplicates the test positive *at the required level of resolution*.

Step 7: WASHOUT THE STENCIL

After exposure, wet both sides of the screen with a gentle spray of cold water. Then spray forcefully from the printing side until the image areas clear. Rinse both sides of the screen with a gentle spray until no soft emulsion is left on the squeegee side, and no foam or bubbles remain. Blot excess water from the printing side with newsprint (unprinted newspaper stock).

Step 8: BLOCKOUT AND TOUCHUP

Blockout Option 1: Before drying and exposing the coated screen, use excess emulsion from the coating step to cover the blockout area.

Blockout Option 2: For non-water based-inks, after exposure and washout, dry the screen. Apply **Screen Filler No. 60** or **Extra Heavy**

Blockout No. 10. Touchup Option 1: Use excess emulsion and re-expose the screen. **Touchup Option 2:** For non-water-based inks, use **Screen Filler No. 60** or **Extra Heavy Blockout No. 10** thinned with water.

Step 9: STENCIL REMOVAL

Use **All-Purpose Ink Wash**, **Eco-Wash 160** or the least powerful ink diluent necessary, to remove all ink remaining in the screen. Use **Screen**

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Degreaser Liquid No. 3 to help remove ink and solvent residues that might impair the action of the stencil remover. Brush **Stencil Remover Liquid No. 4** or **Stencil Remover Paste No. 5** on both sides of the screen. Do not let the stencil remover dry on the screen. Wash the screen with a forceful spray of water. Use **Walk Away Haze Remover** or **Haze Remover Paste No. 78** to remove ink and haze residues.

BASE EXPOSURE TABLE (For 305 threads/in.(120/cm.) white polyester or nylon at 40 in.(100cm.) exposure distance).

LIGHT SOURCE	COATING METHOD		
	1	2	3
Carbon Arc			
15 amps	82 sec.	4 min.	5 min.
30 amps	41 sec.	2 min.	3 min.
40 amps	31 sec.	1 ½ min.	2 min.
60 amps	21 sec.	1 min.	80 sec.
110 amps	11 sec.	35 min.	45 sec.
Metal Halide			
1000 watts	20 sec.	50 sec.	70 sec.
2000 watts	10 sec.	26 sec.	35 sec.
3000 watts	6 sec.	17 sec.	22 sec.
4000 watts	5 sec.	13 sec.	17 sec.
5000 watts	4 sec.	11 sec.	14 sec.
Pulsed Xenon			
2000 watts	45 sec.	2 ½ min.	3 min.
5000 watts	20 sec.	1 min.	1 ¼ min.
8000 watts	12 sec.	35 sec.	47 sec.
Mercury Vapor			
125 watts	3 ½ min.	8 ½ min.	12 min.
1000 watts	25 sec.	70 sec.	1 ½ min.
2000 watts	12 sec.	35 sec.	45 sec.
4000 watts	6 sec.	17 sec.	22 sec.
Fluorescent Tubes*			
40 watts	1 min.	2 ½ min.	4 ½ min.

*Base exposure times are for unfiltered black light, or super diazo blue tubes at 4 – 6 in. (10 – 15 cm.) exposure distance.

For plant-light, filtered black light, and "daylight" fluorescent tubes, use at least double the exposure time.

EXPOSURE VARIABLES

Multiply the above base exposure times by *all* factors and variables that apply.

Fabric

metal fabric	2.0-4.0
dyed fabric	1.5-2.0
finer than 330T/in (130T/cm)	0.7-0.9
coarser than 250T/in (100T/cm)	1.1-2.0
high heat and humidity	1.3-1.8

DISTANCE FACTORS

20 inches /50 cm.	0.25	44 inches /110 cm.	1.21
24 inches /60 cm.	0.36	48 inches /120 cm.	1.44
28 inches /70 cm.	0.49	52 inches /130 cm.	1.69
32 inches /80 cm.	0.64	56 inches /140 cm.	1.95
36 inches /90 cm.	0.81	60 inches /150 cm.	2.25
40 inches /100 cm.	1.00	72 inches /180 cm.	3.2

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