

## QLT™

### ULTRA-FAST-EXPOSING SBQ-PHOTOPOLYMER TEXTILE EMULSION

**QLT** is a ready-to-use, ultra-fast-exposing SBQ-photopolymer direct emulsion formulated for imprinted sportswear printing. Its high viscosity ( $\approx 7200$  cps at 77° F.(25° C.) provides good coating control. Its high solids content ( $\approx 43\%$ ) results in better mesh bridging on coarse mesh, and fast drying. Its high contrast blue color affords easy stencil inspection. **QLT** is resistant to plastisol inks and most washup solvents, making it easy to reclaim in automatic stencil removal equipment or by hand. Stencils made with **QLT** are extremely durable and will not become tacky under high humidity conditions. **QLT** 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**.)

##### **Step 2: SENSITIZING**

**QLT** is fully presensitized. No sensitizer need be added. **QLT** 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.). Use a humidifier in the drying area, if possible.

##### **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**

Calculate five test exposures—two below and two above the Approximate Exposure Time. Tape the test positive to the screen. Expose the screen for the shortest exposure time to be tested. Mask 1/5 of the positive and expose the screen to arrive at the next shortest exposure time. Repeat this procedure until five exposures are made, to arrive at the longest exposure time. Make a print from the stencil and compare it to the test positive. The optimum exposure is indicated by: ■ 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. ■ The print best duplicates the test positive at the needed 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** or the least powerful ink diluent necessary, to remove all ink remaining in the screen. Use **Screen 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 **Haze Remover Paste No. 78** to remove ink and haze residues.

Ulanog Corporation, 110 Third Avenue, Brooklyn, NY 11217, U.S.A. Tel.: +1 718 237 4700; Fax: +1 718 802 1119

Ulanog International Representative Office, Rütistrasse 17, CH-8952 Schlieren-Zurich, Switzerland. Tel.: +41 44 755 44 77; Fax: +41 44 773 16 06

Ulanog International /Asia, 25 Tagore Lane, #04-04, Singapore 787602. Tel.: +65 6451 7505; Fax: +65 6451 7507

<www.ulano.com>

**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
<b>Carbon Arc</b>			
15 amps	96 sec.	288 sec.	360 sec.
30 amps	48 sec.	144 sec.	198 sec.
40 amps	36 sec.	108 sec.	144 sec.
60 amps	24 sec.	72 sec.	96 sec.
110 amps	13 sec.	40 sec.	54 sec.
<b>Metal Halide</b>			
1000 watts	22 sec.	60 sec.	82 sec.
2000 watts	11 sec.	30 sec.	41 sec.
3000 watts	7 sec.	20 sec.	26 sec.
4000 watts	5 sec.	15 sec.	20 sec.
5000 watts	4 sec.	12 sec.	16 sec.
<b>Pulsed Xenon</b>			
2000 watts	55 sec.	165 sec.	220 sec.
5000 watts	22 sec.	66 sec.	88 sec.
8000 watts	14 sec.	41 sec.	55 sec.
<b>Mercury Vapor</b>			
125 watts	228 sec.	600 sec.	840 sec.
1000 watts	29 sec.	82 sec.	105 sec.
2000 watts	14 sec.	41 sec.	53 sec.
4000 watts	7 sec.	20 sec.	26 sec.
<b>Fluorescent Tubes*</b>			
40 watts	72 sec.	180 sec.	300 sec.

\*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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Ulano Corporation, 110 Third Avenue, Brooklyn, NY 11217, U.S.A. Tel.: +1 718 237 4700; Fax: +1 718 802 1119  
 Ulano International Representative Office, Rütistrasse 17, CH-8952 Schlieren-Zurich, Switzerland. Tel.: +41 44 755 44 77; Fax: + 41 44 773 16 06  
 Ulano International /Asia, 25 Tagore Lane, #04-04, Singapore 787602. Tel.: +65 6451 7505; Fax: +65 6451 7507  
 <www.ulano.com>

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