

QLT™

ULTRA-FAST, SOLVENT RESISTANT SBQ-PHOTOPOLYMER TEXTILE EMULSION

QLT is a ready-to-use, ultra-fast-exposing SBQ-photopolymer direct emulsion for imprinted sportswear printing. It resists plastisol inks—including newer, more aggressive, post-phthalate plastisols—and most washup solvents, making it easy to reclaim in automatic equipment. **QLT** is formulated to reduce stencil-making time (coating, drying, and exposure) in shops with high stencil throughput: its high solids content ($\approx 43\%$) allows a thick build per coat, reducing the number of coats over conventional emulsions, facilitates quick drying, and results in better mesh bridging on coarse mesh; its exceptional photo-sensitivity reduces exposure time. Its high viscosity (≈ 7000 cps at 77°F . (25°C .) provides good coating control. Its high-contrast blue color affords easy stencil inspection. Stencils made with **QLT** are extremely durable and will not become tacky under high humidity conditions. **QLT**'s fast exposure speed will also be of interest to low volume printers with weak light sources. With added diazo and post-processing treatment with **Hardener WR**, **QLT** can be used with water-based /discharge inks.

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, though diazo is an option for use with water-based inks. **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 de-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: WASH OUT 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.

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	106 sec.	5 min.	6 ½ min.
	30 amps	53 sec.	158 sec.	218 sec.
	40 amps	40 sec.	119 sec.	158 sec.
	60 amps	26 sec.	79 sec.	106 sec.
	110 amps	14 sec.	44 sec.	59 sec.
Metal Halide				
	1000 watts	24 sec.	66 sec.	1 ½ min.
	2000 watts	12 sec.	33 sec.	45 sec.
	3000 watts	8 sec.	22 sec.	29 sec.
	4000 watts	6 sec.	17 sec.	22 sec.
	5000 watts	5 sec.	13 sec.	18 sec.
Pulsed Xenon				
	2000 watts	1 min.	3 min.	4 min.
	5000 watts	24 sec.	73 sec.	97 sec.
	8000 watts	15 sec.	45 sec.	61 sec.
Mercury Vapor				
	125 watts	4 min.	11 min.	15 ½ min.
	1000 watts	32 sec.	90 sec.	116 sec.
	2000 watts	15 sec.	45 sec.	58 sec.
	4000 watts	8 sec.	22 sec.	29 sec.
Fluorescent Tubes*				
	40 watts	80 sec.	200 sec.	5 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

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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