

## QX-1™

### UNIVERSAL, SBQ-DUAL-CURE HYBRID EMULSION

**QX-1** is a blue-green, ready-to-use, fast-exposing SBQ-dual-cure direct emulsion formulated for industrial and fine halftone graphics printing with conventional and water-based UV inks, and aggressive, solvent-based inks. Its matte finish virtually eliminates the printing problems usually associated with high and low humidity conditions. **QX-1** is durable, and has good resolution and definition, and very good wet strength. It is very easy to reclaim, even if underexposed. Solids content: 37%. Viscosity: 9000 cps (25° C.) Shelf life: one year.

#### **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, 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.) A degreaser, **Magic Mesh Prep** also serves as a wetting agent and antistatic treatment. Mesh treated with **Magic Mesh Prep** can be coated with emulsion more evenly and will transfer ink more readily during printing. Rinse the screen thoroughly with water. Dry the mesh completely following the degreasing rinse and before coating it with **QX-1**.

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

**QX-1** is fully presensitized. No sensitizer need be added. **QX-1** should be handled only under yellow safe light conditions.

##### **Step 3: COATING 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 dehumidifier in the drying area, if possible.

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

Refer to the Base Exposure Table (below). Base Exposure Time X Exposure Variable Factors = Approximate Exposure Time. Make a Step Wedge Test (an instructional video for doing so is available in the “Support” section of the Ulano website: [www.ulano.com](http://www.ulano.com)), or use the **Ulano ExpoCheck**—carried through to actual printing—to determine the optimal exposure time. Optimum exposure is indicated: ■ At that exposure time when (after washout) the emulsion first reaches maximum color density and no positive outline or edge is observable. ■ The squeegee side emulsion is hard and not slimy. ■ The print best duplicates the test positive *at the level of resolution that the job requires*.

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

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 7: 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 8: STENCIL REMOVAL**

Remove ink from the screen using the solvent or solvent blend recommended by the ink manufacturer.

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. As alternatives, use dilute **Stencil Remover Concentrate 1:20**, **Stencil Remover Liquid Concentrate No. 42**, or **Stencil Remover Powder No. 44**. If using plastisols, use dilute **Ink and Stencil Remover Concentrate** (a combined plastisol ink wash and stencil remover liquid concentrate) manually or in dip tanks. Do not let the stencil remover dry on the screen. Rinse the screen with a water spray.

##### **Step 9: GHOST IMAGE AND HAZE REMOVAL**

Use **Walk Away Haze Remover**, **Fast Acting Haze Remover**, or **Haze Remover No. 78** to remove ink and haze residues, if necessary.

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

LIGHT SOURCE	COATING METHOD		
	1	2	3
<b>Carbon Arc</b>			
15 amps	108 sec	324 sec	405 sec
30 amps	54 sec	162 sec	223 sec
40 amps	41 sec	122 sec	162 sec
60 amps	27 sec	81 sec	108 sec
110 amps	14 sec	45 sec	61 sec
<b>Metal Halide</b>			
1000 watts	25 sec	70 sec	93 sec
2000 watts	13 sec	35 sec	46 sec
3000 watts	8 sec	23 sec	30 sec
4000 watts	6 sec	18 sec	23 sec
5000 watts	4.5 sec	13.5 sec	18 sec
<b>Pulsed Xenon</b>			
2000 watts	65 sec	190 sec	210 sec
5000 watts	26 sec	76 sec	102 sec
8000 watts	16 sec	48 sec	65 sec
<b>Mercury Vapor</b>			
125 watts	257 sec	675 sec	945 sec
1000 watts	32 sec	93 sec	119 sec
2000 watts	16 sec	46 sec	59 sec
4000 watts	8 sec	23 sec	30 sec
<b>Fluorescent Tubes*</b>			
40 watts	81 sec	203 sec	338 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.	3.20

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