

## Double Duty™

### HIGHLY DURABLE DUAL-CURE EMULSION; RESISTS INDUSTRIAL ETCHANTS: SUSTAINS EXTENDED TEXTILE PRINTING RUNS USING DISCHARGE AND OTHER WATER-BASED INKS

**Double Duty** is an olive-grey, enhanced dual-cure emulsion formulated for use with industrial etchants, and with abrasive, frit-containing inks for ceramics and glass. Because of its mechanical durability, **Double Duty** is also well suited to lengthy textile printing runs using discharge and other water-based textile inks. It has 40% solids content (unsensitized) and a viscosity of 6500-8000 centipoise (sensitized).

#### 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**. **Magic Mesh Prep** also promotes more uniform coating and provides an antistatic treatment. (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**.)

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

Dissolve the diazo sensitizer by adding lukewarm water up to the shoulder of the diazo bottle. Shake it well. Wait 15 minutes for bubbles to disperse. Pour the fully dissolved sensitizer into the emulsion. Stir with a clean broad, flat, plastic or stainless steel instrument until the emulsion is uniform in color. Close the container. Wait at least one hour for the sensitized emulsion to de-bubble. Write the date of sensitizing on the emulsion container label.

##### **Step 3: COATING THE SCREEN**

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

##### **Step 4: DRY THE SCREEN**

Dry multicoated screens (Methods 2 or 3) horizontally, printing side down, at room temperature in a dirt- and dust-free area. Use a fan to speed drying or, preferably, dry coated screens with filtered air, up to 104°F. (40°C.) in a commercial dryer. Dehumidify the drying area, if possible.

##### **Step 5: STORAGE**

Unsensitized emulsion can be stored for up to 1 year. Sensitized emulsion can be stored for 3 – 6 weeks at room temperature; up to 3 months in a refrigerator. Store coated screens in a cold, dry, completely dark area until exposure.

##### **Step 6: CALCULATE THE APPROXIMATE EXPOSURE**

Refer to the Base Exposures listed on the next page. Base Exposure Time X Exposure Variable Factors = Approximate Exposure Time.

##### **Step 7: DETERMINE THE OPTIMAL EXPOSURE TIME**

Make a Step Wedge Test (there is an instructional video covering this on the Ulano Website ([www.ulano.com](http://www.ulano.com)) or use the **Ulano ExpoCheck** to determine your optimum exposure time. Optimum exposure is indicated at that exposure time 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. ■ An actual print best duplicates the test positive *at the level of resolution that the job requires*.

##### **Step 8: WASHOUT**

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 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 unprinted newspaper stock.

##### **Step 9: BLOCKOUT & TOUCHUP**

**Blockout Option 1**: Before drying and exposure, use excess emulsion from the coating step to cover blockout area. **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. **Touchup Option 2**: For non-water-based inks, use **Screen Filler No. 60** or **Extra Heavy Blockout No. 10** thinned with water.



# Technical Data Sheet

## Step 10: RECLAIM THE SCREEN

Remove ink with the appropriate solvent. Rinse with water. Degrease with **Screen Degreaser Liquid No. 3** to remove ink and solvent residues. Rinse with a forceful spray. Brush **Stencil Remover Liquid No. 4** or **Stencil Remover Paste No. 5** on both sides of the screen. Do not let stencil remover dry on screen. Wash with a forceful spray of water. Use **Walk Away Haze Remover** or **Haze Remover Paste No. 78** to remove ink and haze residues, if necessary.

At 40 inches/ca. 102 cm.:

A base exposure using a 2X2 coating regimen on 305/inch yellow mesh (120/cm) is 60 seconds. For water or ceramic inks, double the exposure.

A base exposure using a 2X2 coating regimen on 230/inch yellow mesh (ca. 90/cm.) is 75 seconds. For water or ceramic inks, double the exposure.

## EXPOSURE VARIABLES

Factors for Variables Affecting Base Time

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	
Factor	1.3 – 1.8

Taped-Up Positives	
Factor	1.2 – 1.3

Exposure 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.	3.24


**STORAGE:** Unsensitized emulsion can be stored for up to 1 year. Sensitized emulsion can be stored for 3 – 6 weeks at room temperature, and up to 3 months in a refrigerator. Store coated screens in a cold, dry, completely dark area until exposure.

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