

QT-DISCHARGE

TEXTILE EMULSION FOR DISCHARGE AND WATER-BASED INKS

QT-DISCHARGE is specially formulated to resist discharge inks, and is compatible with water-based and plastisol inks, too. It requires fewer coats than 925WR (995WR overseas), dries more quickly, and exposes twice as fast. **QT-DISCHARGE** has a high ($\approx 41\%$) solids content, providing good stencil build per coat, excellent mesh bridging of coarse mesh, and fast drying. **QT-DISCHARGE** is supplied with diazo powder (rather than 925's syrup diazo), and thus requires no hazardous shipping up-charge.

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 **Degreaser Concentrate 1:20**, or **Magic Mesh Prep**. (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

Add water to the shoulder of the diazo bottle. Shake the container well until the diazo powder is completely dissolved. Wait 15 minutes for the bubbles to disperse. Add the diazo solution to the emulsion and mix it thoroughly using a stainless steel, glass, or plastic stirrer until the emulsion is uniform in color. Close the container. Wait for at least one hour to allow bubbles and foam to rise to the surface and break. Write the date of sensitizing on the container label. Note that **QT-DISCHARGE** should be handled only under yellow safe light conditions.

Step 3: COATING THE SCREEN

Using a round-edged coating trough, apply one coat of **QT-DISCHARGE** on the printing side of the fabric, followed by one coat on the squeegee side. **QT-DISCHARGE** is specially formulated so that, for most printing applications, this simple and fast technique produces stencils of optimal thickness.

Step 4: DRY THE SCREEN

Dry coated screens horizontally, printing side down, at room temperature in a completely dark, 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.

Step 5: EXPOSE THE STENCIL

The following are Base (theoretical) Exposure Times with a 5,000-watt metal halide lamp at an exposure distance of 40 inches (1 meter) using the recommended 1 – 1 coating technique above.

156 threads per inch (approx. 61 cm.) yellow fabric: 105 – 140 seconds.

305 threads per inch (120/cm.) yellow fabric: 36 – 48 seconds.

(Note that, using the same coating regimen, the coarser the mesh, the longer the exposure time.)

Multiply the Base Exposure Time by all relevant Exposure Variable Factors (reverse side) to find your Approximate Exposure Time.

Step 6: DETERMINE THE OPTIMAL EXPOSURE TIME

Use the Approximate Exposure Time (the Base Exposure Time X all relevant Exposure Variable Factors) as the central time in a Step Wedge Test (instructions can be found in the **Ulanog Direct Emulsions Technical Data Booklet**) or with the **Ulanog Exposure Calculator Kit**. Carry the test through to actual printing to determine your optimum exposure time. Optimum exposure is indicated: ■ At that exposure time when the emulsion first reaches its maximum color density and the edges of the positive do not "resolve." ■ The squeegee side emulsion is hard and not soft or slimy. ■ The print best duplicates the test positive *at the level of resolution that the job requires*.

Step 7: WASHOUT

After exposure, wet both sides of the screen with a gentle spray of tap 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 newspaper (unprinted newspaper stock), or use a water vacuum.

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 plastisol or other non-water-based, non-discharge inks, after exposure and washout, dry the screen. Apply **Red Blockout**, **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 **Red Blockout**, **Screen Filler No. 60** or **Extra Heavy Blockout No. 10** thinned with water.

Step 9: OPTIONAL POST-EXPOSURE AND CHEMICAL POST-HARDENING

Post-exposure—exposing the squeegee side of the screen for up to four times the original exposure time after washing out and drying the stencil—provides some additional durability. To post-harden stencils chemically, apply **Hardener D** to both sides of the dried stencil with a soft-bristled brush or sponge. Blot excess solution from the image area. Allow the screen to cure for 24 hours at room temperature—or expose the screen to heat (not exceeding 140° F., 60° C.) for one hour. Note that stencil removal will become more difficult and may require the use of stencil remover and a high pressure power spray.

Step 10: 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**. With automated stencil removal equipment, use **Stripmatic**. 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. Flush the screen with a forceful spray of water.

Step 11: 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

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

STORAGE (unopened): one year at 68°F. (20° C.)

(after adding diazo): 4 -6 weeks at room temperature; 3 months under refrigeration

PHYSICAL PROPERTIES

Solids content: ≈ 41%

Viscosity: approx. 5,500 mPas

Freezing: protect against freezing

VOC: none

TLV: N/A

Color: red

HMIS rating: Health 1; Flammability 0; Reactivity 0

806dm, rev. 307