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Direct Application using Liquid Reactive Dyes

Please read directions carefully before starting.

For SCREEN PRINTING, BLOCK PRINTING, STENCILING and HAND PAINTING on Cotton, Linen, Rayon, Tencel and Silk using thickened dye paint for pattern control. Outlined below are several methods for fixing dye on your fabric. Please read all of them before choosing a method that suits your application needs. It is important to sample before working on large projects. For additional information visit our web site at www.prochemical.com.

- ✘ Wear rubber gloves, apron or old clothes.
- ✘ Utensils used for dyeing should not be used for food preparation.

Supplies

Liquid Reactive dye
Urea
Synthrapol
Metaphos (optional, but use if you have hard water)

Pot Ash (cotton or silk) or
or Sodium Acetate (silk only)
or PRO Fix LHF (cotton and silk)
or baking Soda (cotton and silk)
PRO Print Paste Mix SH (cotton)
or PRO Print Paste Mix F (silk)

Procedure

1. Scour the fabric by machine washing in HOT 140°F (60°C) water, or by hand in a pot on the stove with ½ tsp (2 gm) Pot Ash and ½ tsp (2.5 ml) Synthrapol per pound of fabric (454 gm, or 3 to 4 yards cotton muslin, or 8 yards 8mm China Silk, or 3 Medium T-shirts, or 1 sweatshirt). Rinse thoroughly. This step does not add the dye fixative to the fabric; it prepares your fabric for dyeing by removing any dirt, oil or sizing.

2. Make the Print Paste. Measure 5½ Tbl (55 gm) PRO Print Paste Mix SH or F into a dry container. Measure 1 cup (250 ml) of warm 110°F (44°C) water into another container. Add measured PRO Print Paste Mix to the water while stirring rapidly. Continue stirring until you obtain a smooth paste. Let paste stand 1 hour or overnight for smoothest results. Unused paste should be kept in a closed container. Store prepared print paste without dye up to six months.

3. Make the Urea Water by mixing together the ingredients below. Allow Urea Water to cool to room temperature before using. Store unused Urea Water at room temperature in a closed container. Discard it if you detect an ammonia smell.

- 9 level Tbl (100 g) Urea
- 1 level tsp (7 gm) Metaphos (optional, but use if you have hard water)
- 1 quart (1 liter) warm 110°F (44°C) water

4. Make the Dye Paint. The Dye Paint thickness described below is a guideline. Experiment until you get the thickness that suits your application needs.

Hand Painting (thin paint)

Measure the desired amount of liquid dye, from the following chart, into a 1 cup (250 ml) container. Thicken with prepared Print Paste, usually 1 to 2 tsp (5 to 10 ml), then add Urea Water to make 1 cup (250 ml). Stir until thoroughly mixed.

Screen printing, Block printing, and Stenciling (thick paint)

Measure the desired amount of liquid dye, from the following chart into a 1 cup (250 ml) container. Add prepared Print Paste to make 1 cup (250 ml). Stir until thoroughly mixed.

For each cup of dye paint, use the amount of Liquid Reactive dye listed below for the desired shade.

	Pale	Medium	Dark	Black
25% Liquid Dye	2 tsp (10 ml)	5 tsp (25 ml)	10 tsp (50 ml)	20 tsp (100 ml)
33% Liquid Dye	1 ½ tsp (7.5 ml)	3 ½ tsp (18 ml)	7 ½ tsp (37.5 ml)	15 tsp (75 ml)
40% Liquid Dye	1¼ tsp (5.75 ml)	2 ¾ tsp (14 ml)	5 ¾ tsp (28.8 ml)	11 ½ tsp (57.5 ml)
50% Liquid Dye	1 tsp (5 ml)	2 ½ tsp (12 ml)	5 tsp (25 ml)	10 tsp (50 ml)

5. Add fixative to the Dye Paint. Please read the three methods below then choose the one that best suits your application needs.

Method #1 Pot Ash
(cotton and silk)

Just before applying the dye paint to the fabric dissolve 1 level tsp (4 gm) of Pot Ash in each 1 cup (250 ml) measure of dye paint. Stir until it is thoroughly mixed. Apply dye paint to the fabric.

Set Dye: Allow patterned fabric to air dry, and set dye with steam or dry heat(cotton only) as outlined below.

Shelf Life: Dye paint with Pot Ash may be stored for one month in a cool dark place without color loss.

Method #2 Sodium Acetate (silk only)

Just before applying the dye paint to the fabric dissolve 1 level tsp (4 gm) of Sodium Acetate in each 1 cup (250 ml) measure of dye paint. Stir until it is thoroughly mixed. Apply dye paint to the fabric.

Set Dye: Allow patterned fabric to air dry, and set dye with steam as outlined below.

Shelf Life: Dye paint with Sodium Acetate may be stored for 2 months in a cool dark place without color loss.

Method #3 PRO Fix LHF (cotton and silk)

Print or paint fabric without adding Pot Ash or Sodium Acetate to your dye paint.

Set Dye: Allow patterned fabric to air dry thoroughly, and set with LHF as outlined below.

Shelf Life: Dye paint may be stored for 2 months in a cool dark place without color loss.

Method #4 Baking Soda
(cotton and silk)

Just before applying the dye paint to the fabric dissolve 1 level tsp (4 gm) of Baking Soda in each 1 cup (250 ml) measure of dye paint. Stir until it is thoroughly mixed. Apply dye paint to the fabric.

Set Dye: Allow patterned fabric to air dry, and set dye with steam as outlined below.

Shelf Life: Dye paint with Baking Soda may be stored for 2 months in a cool dark place without color loss.

6. Set the dye. Please read the dye setting methods below then choose the one that best suits your application needs.

Steaming

Loosely roll the fabric, jelly roll fashion, in between a piece of muslin, blank newsprint, or non fusible pellow, so patterned surface does not come in contact with itself. Then roll the tube lengthwise, like a cinnamon roll, and tie loosely to secure the shape. Place the rolled fabric in the steamer and steam for 30 minutes. Add more boiling water as needed.

Dry Heat (cotton only)

Do not use this method for viscose rayon or silk.

Clothes Dryer: Air dry patterned fabric then cure in a clothes dryer on the HOTTEST setting for 45 minutes.

PRO Fix LHF

Pour PRO Fix LHF into shallow pan or container. Using a wide soft brush or paint roller, apply LHF to the right side (patterned side) of the fabric. Use a minimum of brush strokes to avoid smearing your design. Let LHF dry a little bit then cover your fabric with plastic and cure for at least 24 hours. Room temperature **must** be above 70°F (22°C). We've found that the warmer the cure temperature, the darker the final color. LHF can also be steam set. Prepare fabric as outlined for steaming. Make sure PRO Fix LHF is completely dry before rolling the fabric.

7. Neutralize silk fabric in a bath that is made by adding 1 teaspoon (5ml) acetic acid 56% (11 teaspoons (55ml) white distilled vinegar) to every gallon (4 liters) of warm 105°F(41°C) water, for 10 minutes. Rinse fabric thoroughly in a bucket of room temperature 75° to 95°F (24° to 35°C) water. This step is only necessary when dyeing silk fabric

8. Rinse the fabric. After setting the dye, rinse fabric thoroughly in a bucket of room temperature 75° to 95°F (24° to 35°C) water. Change the water 3 to 4 times. Then wash with very HOT 140°F (60°C) water adding ½ tsp (2 ml) Synthrapol per pound (454 gm) of fabric. Rinse well and dry. Black and very dark colors may need a second HOT Synthrapol wash.