

# Direct Application using PRO H-Reactive Dyes (Powder or Liquid)

Please read directions carefully before starting.

*For SCREEN PRINTING, BLOCK PRINTING, STENCILING and HAND PAINTING on Cotton, Linen, Rayon and Silk using thickened Dye Paint for pattern control. Outlined below are three 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.prochemicalanddye.com](http://www.prochemicalanddye.com)*

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

## Supplies

PRO H-Reactive Dye (powder or liquid)  
Urea  
Ludigol (formerly known as PRO Chem Flakes)  
Synthrapol  
Metaphos (optional, but use if you have hard water)  
PRO Dye Activator or Soda Ash or Baking Soda (Sodium Bicarbonate)  
PRO Print Paste Mix SH (Cotton) or PRO Print Paste Mix F (silk)

## Procedure

**1. Scour the fabric** by machine washing in HOT 140F (60C) water, or by hand in a pot on the stove with 2 tsp (2 gm) PRO Dye Activator or Soda Ash and 2 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 5 ½ Tbl (55 gm) PRO Print Paste Mix SH or F into a dry container. Measure 1 cup (250 ml) of warm 110F (44C) water into a container. Measure ¾ tsp (2 gm) of PRO Chem Flakes and add it to the warm water; stir until dissolved. 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 H-Urea Water** by mixing together the ingredients below. Allow H-Urea Water to cool to room temperature before using. Store unused H-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 Tbl (8 gm) Ludigol (formerly known as PRO Chem Flakes)  
1 level tsp (7 gm) Metaphos (optional, but use if you have hard water)  
1 quart (1 liter) warm 110F (44C) 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)

Dye Powder: Thoroughly dissolve the desired amount of dye powder, from the following chart, with just enough H-Urea Water to make a lump free paste (approximately 3 cup or 60 ml). Thicken with prepared Print Paste, usually 1 to 2 tsp (5 to 10 ml), then add H-Urea Water to make 1 cup (250 ml). Stir until thoroughly mixed.

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

Dye Powder: Thoroughly dissolve the desired amount of dye powder, from the following chart, with just enough H-Urea Water to make a lump free paste (approximately 3 cup or 60 ml). Add prepared Print Paste to make 1 cup (250 ml). Stir until thoroughly mixed.

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

For each cup of Dye Paint, use the amount listed below of PRO H-Reactive Dye (powder or liquid) for the desired shade.

	Pale	Medium	Dark	Black
Dye Powder	½ tsp (1.5 gm)	2 tsp (5 gm)	4 tsp (10 gm)	8 tsp (20 gm)
25% Liquid Dye	2 tsp (10 ml)	5 tsp (25 ml)	10 tsp (50 ml)	20 tsp (100 ml)
30% Liquid Dye	1 1/4 tsp (7 ml)	4 tsp (20 ml)	8 tsp (40 ml)	16 tsp (80 ml)
40% Liquid Dye	1 tsp (5 ml)	3 tsp (15 ml)	6 tsp (30 ml)	12 tsp (60 ml)

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

#### Method #1 PRO Dye Activator or Soda Ash

Just before applying the dye paint to the fabric dissolve 1 tsp (4 gm) of PRO Dye Activator or Soda Ash in each 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 as outlined below.

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

#### Method #2 Baking Soda

Just before applying the dye paint to the fabric dissolve 1 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 or dry heat 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 pellon, 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

*Not recommended for viscose rayon or silk.*

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

Bake: Prepare fabric as for steaming and bake in oven 5 minutes at 300F.

**7. Rinse the fabric.** After setting the dye, rinse fabric thoroughly in a bucket of room temperature 75F to 95F (24C to 35C) water. Change the water 3 to 4 times. Then wash with very HOT 140F (60C) water adding 2 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.