



# Procion® MX Dyes

## Silkscreen Printing & Hand-Painting

### Standard Method

The traditional method of printing or painting with fiber reactive dye is to add baking soda (sodium bicarbonate) to a thickener paste. This method can be used for screen printing, hand-painting, warp-painting, airbrush, stamping and all other direct application techniques. It is important to prepare the fiber by washing to remove the sizing.

#### Steps:

1. Wash, dry and iron the fabric.
2. Prepare dye thickener paste (see below). Add 1/2 teaspoon baking soda to 1/2 cup thickener paste. The baking soda activates the dye reaction. Activated paste will remain usable for only 4 hours, then must be replaced with freshly activated paste.
3. Divide the activated paste into several containers. Add dye, 1/2 to 2 teaspoons of dye per 1/2 cup thickener is the standard range of dye to thickener. Proportion the dye in each container in relation to the amount of thickener paste and desired intensity.
4. Print, paint, stamp or airbrush on fabric.
5. Air dry. Fix by any of the following methods:
  - a. Roll fiber in unprinted newsprint or steaming paper. Bind to make a manageable bundle. Place a cake pan with 1" of water in the bottom in a 285° F oven. Place the fabric bundle on a rack above the pan. Steam 10 minutes.
  - b. Iron each area of the fabric for 5 minutes with the iron set on "Steam." Work in a well ventilated area. The heat will activate the baking soda.
  - c. Dry for 15 to 30 minutes in a dryer at the highest heat setting.
  - d. Heat set in a steam chamber or professional fabric steamer.

### Preparing Dye Thickener

When screen printing with dye thickened with sodium alginate, the print base should be as thin as the image will allow. dye printed in too thick a base will halo from the image before the fabric is cured or will accumulate in the corners, altering the image. SH is a high viscosity, low solids type of alginate thickener used primarily for cotton and other cellulose. It may also be used for silk when fine line definition is not required. Alginate F is a low viscosity, high solids alginate used for silks and synthetics when fine line definition is desired. Use about 2 1/2 times more of the F to equal the viscosity of SH.

#### Materials:

- wide mouth quart jar
- measuring spoons
- 4 teaspoons sodium alginate
- 10 tablespoons urea
- 1 teaspoon Calgon
- 1 1/2 cups hot water

Mix at least 2 hours before actual use.

#### Steps:

1. Mix the calgon and urea together in the jar.
2. Add the hot water.
3. Slowly add the sodium alginate, stirring constantly. Stir until dissolved.
4. Add cool water until the mixture is no longer stiff but is not runny. This should make about 1 quart.
5. Cover, label and store in the refrigerator. This mixture will keep indefinitely if refrigerated.

### Presoak Method

Fiber soaked in its chemical assistants readily accepts the Procion® MX dye. When printed or painted on fibers the dye bonds with the fiber as in immersion dyeing. After the dye reaction has been set and the printing medium is removed through washing the fiber retains its resilience and hand.

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## Presoak Method continued

The quantity of dye added to the printing paste will determine the intensity of the printed or painted color. 1/2 teaspoon to 2 teaspoons of powdered dye to 1/2 cup thickener is the standard range, with 1 teaspoon being the medium to dark shade. Hand painting paste is made by thinning printing paste with a urea water solution. Prepare the fabric by washing to remove sizing. Synthrapol or a detergent without whiteners and brighteners should be used. Any traces of detergent additives can inhibit the dye reaction. Once the fabric is washed, it can move directly into presoak without drying.

### Steps:

1. For one pound of fiber, presoak in a solution of 2 1/2 gallons of water and 3/4 cups soda ash for 15 to 30 minutes. Do not rinse. Squeeze out excess solution, air dry and iron **OR** leave wet.
2. Print or paint with the thickened dye solution. Experiment to find the quantity of dye for the color brilliance necessary. The dye will be transparent: that is, the color of the underneath fabric will blend with the dye. Red fabric printed with green will be brown. Unbleached muslin will tone down the dye colors.
3. Set by batch method or by steaming.

## Setting Screen Printed and Hand Painted Fabrics

### Batch Method

The Procion® MX fiber reactive dye will react with the fiber as long as they remain damp.

1. While the fabric is still wet, place printed or painted fabric between two large sheets of plastic. Lay more damp fabric on top, making certain that the moisture will not directly contact the printed fabric.
2. Loosely roll the fabric and plastic into a large bundle.
3. Place inside a large trash bag. Close the bag with an air pocket inside. Allow to sit for 8 to 48 hours for the dye to react.
4. Rinse the fabric in cool water to remove the excess dye.

### Steam Method

You can steam your fabric in a professional fabric steamer. Or you can make your own steamer out of the materials listed below. Keep in mind that the quantity of fabric may dictate which type of method and steamer to use.

### Materials:

- Large pot with a tight fitting lid
- rack (as in a canning pot)
- newsprint or steaming paper
- stove
- masking tape
- aluminum foil

### Steps:

1. Roll the fabric in the paper, jelly-roll style. Leave at least two inches at the beginning, end, and sides of the roll.
2. Roll this long roll in 2 sheets of newspaper.
3. Secure the paper by taping the loose edge along the length of the roll. Bring the ends together like a doughnut, and tape securely. If the roll is too large for the size of the pot, roll it into a coil and tape securely. This is called a packet.
4. Place an inch of water in the bottom of the pot. Then add the rack. Make sure that the rack is well above the water. Place the packet on the rack.
5. As the water boils, condensation will fall on the packet and waterspot the fabric. To prevent water spots, take a piece of aluminum foil and shape it into a dome. Place the dome over the packet for protection. The foil dome carries the water away from the packet. Make sure that nothing touches the sides of the pot neither the rack, packet, nor the aluminum foil.
6. Cover the pot with the lid. Place the pot on a burner. Turn on the heat to start the water boiling, lower the heat, but leave it high enough to produce steam. Set a timer for one hour. After an hour remove the packet from the pot. Allow the packet to cool. Then rinse as usual.