



# Procion® MX Dyes

## Immersion Dyeing

Immersion or tub dyeing is submerging the fiber being dyed in the dyebath containing water, a specific amount of dye, and the appropriate chemical assistants for a specific length of time. For smooth, even color, the dyebath must be stirred frequently. A large enamel or stainless steel container, or plastic bucket can be used for holding the dyebath.

### Stirring Fiber Reactive Dyebaths

For even, smooth color, the fiber should be able to move freely in the dyebath. Any more water in the dyebath will dilute the dyes more than necessary, and decrease the shade and increase the dyeing time. Increasing the volume of the dyebath requires the dye run to be longer for the dye molecules to reach the fiber. If the dyebath is not stirred frequently (every 2 to 5 minutes), the dye and fiber will react unevenly, leaving light and dark patches. **To stir fabric**, wearing rubber gloves, lift the fiber from the dyebath. Unfold creases, and return the fiber to the bath in a different configuration. **To stir yarn**, use two stainless steel, plexiglass, or wooden stir sticks. Gently slide one stick into the skein near a cross-tie and lift above the dyebath. With the other stick, pick up a different point of the cross-tie on the skein. Remove the first stick, use that stick to redirect the yarn back into the dyepot in a different pattern.

### Immersion Dyeing Cellulose Fibers

For one pound dry weight of fabric or fiber (3 to 6 square yards of fabric or 3 T-shirts)

#### Materials:

- 3 gallons of warm water (105° F)
- Procion® MX dye (see below)
- 1/4 to 1/3 cup of soda ash
- Synthrapol for rinsing
- 1 1/2 to 3 cups of salt (non-iodized)

Two methods of dyeing follow:

#### Method One:

1. Be sure to wash fabric to remove any dirt, grease or sizing. We suggest using Synthrapol.
2. Fill container (such as a 5 gallon plastic bucket) with 3 gallons of hot (105° F) tap water, add salt and dye in proportions listed in the general dye amounts below.
3. Add the fabric or fiber.
4. Stir frequently for 10 to 15 minutes.
5. Remove or lift up the fabric.
6. Add the soda ash. It helps to dissolve the soda ash in a separate container in a little hot water first. Stir into dyebath.
7. Put the fabric back into dyebath and stir frequently for 30 to 60 minutes, depending on the depth of intensity desired.

#### Method Two:

1. Fill container with 3 gallons of hot (105° F) tap water, add dye and stir.
2. Add the fabric or fiber.
3. Add the salt in 3 equal parts at 5 minute intervals. If dyeing a deep shade of blue or a full black, use twice the amount of salt, adding it in 2 equal parts at 15 minute intervals while still stirring the dyebath frequently.
4. Add the soda ash in 2 equal parts at 15 minute intervals while still stirring the dyebath frequently.
5. Dye for 30 to 60 minutes after the last soda addition.

General amounts for dyeing per 3 gallons of water and one pound of fabric:

*For very pale shades:* 1/4 to 1/2 teaspoon dye, 1 1/2 cups salt, 1/4 cup soda ash

*For light shades:* 1/2 to 1 teaspoon dye, 1 1/2 cups salt, 1/4 cup soda ash

*For medium shades, most colors:* 1 tablespoon dye, 1 1/2 cups salt, 1/4 cup soda ash

*For darker shades:* 2 tablespoons dye, 2 cups salt, 1/4 cup soda ash

*For darkest shades:* 4 tablespoons dye, 3 cups salt, 1/3 cup soda ash



# Procion MX Dyes

## Immersion Dyeing continued

### Immersion Dyeing for Protein Fibers

For one pound dry weight of fabric or fiber (3 to 6 square yards of fabric or 3 T-shirts)

#### Materials:

- 3 gallons of warm water (105° F)
- Procion® MX dye (see bottom of page 2)
- 1 1/2 to 3 cups of salt (non-iodized)
- 2 cups 5% acetic acid (white vinegar)
- Synthrapol for rinsing

1. In a stainless steel or enamel pot, put in water, dye and salt.
2. Place pot on stove and stir.
3. Add fiber.
4. Raise the temperature over a 15 minute time span to simmer, stirring frequently.
5. Remove or lift out the fiber, add the vinegar and stir.
6. Return the fiber to the dyebath. Stir frequently at a simmer (about 180° to 195° F) for 30 to 45 minutes.
7. Allow to cool before rinsing.

Wool yarn, fabric, fleece and all animal hair fibers are dyed with this method. Silk yarn and fabric is dyed by the protein method but the dyebath is run at 100° F rather than heated.

### Washing Machine Dyeing for Cellulose Fibers

For 3 to 5 pounds of fabric (5 to 7 yards of fabric or 8 to 10 T-shirts)

#### Materials:

- Standard top-loading washing machine
- 6 to 8 cups salt (non-iodized)
- Procion® MX dye (double the amounts for Immersion dyeing, page 2)
- 2 cups soda ash (3 cups for darker shades)
- 2 tablespoons Synthrapol

#### Steps

1. Wash fabric to remove dirt, grease and sizing with Synthrapol.
2. Fill washing machine to medium load (approx. 6 to 8 gallons) with hot water. Add salt and dye, and agitate for 5 minutes, until both are dissolved.
3. Place wet fabric in machine and agitate for 20 minutes. (The wash cycle needs to be extended, without the dye being drained or more water added, by turning the machine off and resetting at beginning of wash cycle.)
4. In a separate container dissolve soda ash in 1 quart hot water. Gradually add to dyebath in 3 parts at 5 minute intervals, being careful not to pour directly onto fabric.
5. Agitate for 50 minutes (30 minutes for pastels).
6. Let machine drain the dyebath and complete the rinse cycle. To remove any remaining dye, run through a complete wash cycle with hot water and Synthrapol.