

Procion® MX

Instructions

Read through all instructions before beginning your project.

[Tie Dyeing](#)

[Immersion Dyeing](#)

[Silkscreen Printing & Hand-Painting](#)

[Batik](#)

[Dyeing Reed, Rattan & Wood with Procion MX Dyes](#)

[Hints & Tips for Dyeing with Procion MX Dyes](#)



Tie-Dye

There are 11 standardized colors (see [hints and tips](#) for list) in the Procion MX line. All other colors, no matter the manufacturer, are mixed formulas of two or more of these standardized colors. We offer a broad range of colors for your convenience, but the ultimate dyer only needs to stock the standardized colors.

Soda Ash Pre-Soak Method

Be sure to prewash fabric to remove any dirt, grease or sizing. We suggest using Synthrapol®.

1. Wear gloves. Thoroughly dissolve 1 cup soda ash per gallon of water. Soak fabric in the soda ash solution for at least 20 minutes. Then, wring out by hand.
2. Fold and tie fabric. Visit Jacquard's website for pattern ideas.
3. In 1 cup of tap water, mix 2 or more teaspoons of dye. Apply the dye to the fabric using a squirt bottle, paint brush or sponge. Turn the piece over and repeat the pattern on the opposite side. Apply as many colors as you like; however, oversaturation may cause all your colors to run together.
4. Cover fabric with plastic wrap and let stand for 12 to 24 hours in a warm place.
5. For rinsing: While wearing gloves, rinse the dyed fabric first with cool water, then with increasingly warmer water. After 3 or 4 rinses, when the water is nearly clear, prepare a soap soak. Use 2 to 3 gallons of very warm tap water and 1½ teaspoons of Synthrapol®. The fabric should sit in this soap bath for 5 to 10 minutes. Rinse 3 or 4 additional times with warm water.

Hints on Folding & Binding

- Always fold on a clean, flat surface.
- When folding or bunching, expose as much fabric as possible.
- Make small folds rather than large folds.
- Use string, rubber bands or narrow elastic for resists. Bind tightly.

Accordion, Horizontal, Diagonal or Vertical Fold – Pleat the fabric in 1" or smaller folds and bind. This will make parallel lines of the dye if applied on the folded edges.

Spiral - With the fabric lying flat, select a point and twist, spiraling the fabric around that point to make a bundle that looks like a cinnamon roll. Dye applied in pie-shaped wedges will create a spiral when the fabric is opened.

Circles - Select a point and lift the fabric by that point. Smooth the fabric to make a cone. Bind along the cone. Dye applied in horizontal bands between the bindings will make concentric circles.

Dots - Select a point and lift the fabric by that point. Bind fabric close to the point. Select other points and bind. Dye applied to the points will make dots of color. The binding will keep the dye from making large spots.

Remember that these techniques discussed here are only suggestions and a quick reference. There are a number of variations and possibilities when using dyes. You will find further examples at <http://www.jacquardproducts.com/projects>. Experimentation is the best method.

[Back to top](#)

Immersion Dyeing

There are 11 standardized colors (see [hints and tips](#) for list) in the Procion MX line. All other colors, no matter the manufacturer, are mixed formulas of two or more of these standardized colors. We offer a broad range of colors for your convenience, but the ultimate dyer only needs to stock the standardized colors.

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

Stirring Fiber Reactive Dye Baths

For even, smooth color, the fiber should be able to move freely in the dye bath. Additional water in the dye bath will dilute the dyes more than necessary and decrease the shade and increase the dyeing time. Increasing the volume of the dye bath requires the dye time to be longer for the dye molecules to reach the fiber. To prevent uneven dyeing stir dye bath frequently (every 2 to 5 minutes). To stir fabric, wear rubber gloves and lift the fiber from the dye bath. Unfold the creases, and return the fiber to the bath in a different configuration. To stir yarn, use two stainless steel, Plexiglas or wooden stir sticks. Gently slide one stick into the skein near a cross-tie and lift above the dye bath. With the other stick, pick up a different point of the cross-tie on the skein. Remove the first stick and use that stick to redirect the yarn back into the dye pot in a different pattern.

General amounts of dye, salt and soda ash per 3 gallons of water and one pound of fabric:

For very pale shades: ¼ to ½ teaspoon dye, 1½ cups salt, ¼ cup soda ash

For light shades: ½ to 1 teaspoon dye, 1½ cups salt, ¼ cup soda ash

For medium shades: 1 tablespoon dye, 1½ cups salt, ¼ cup soda ash

For darker shades: 2 tablespoons dye, 2 cups salt, ¼ cup soda ash

For darkest shades: 4 tablespoons dye, 3 cups salt, ⅓ cup soda ash

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 above in for amounts)
- ¼ to ⅓ cup of soda ash
- 1½ to 3 cups of salt (non-iodized)
- Synthrapol® for prewashing and post-rinsing

Two methods of dyeing follow:

Be sure to prewash fabric to remove any dirt, grease or sizing. We suggest using Synthrapol®.

Method One:

1. Fill container (such as a 5 gallon plastic bucket) with 3 gallons of warm (105° F) tap water. Add salt and dye in proportions listed in the general dye amounts above.
2. Add the fabric or fiber.
3. Stir frequently for 10 to 15 minutes.
4. Remove or lift up the fabric.

5. Add the soda ash. (It helps to dissolve the soda ash in a separate container in a little hot water first.) Stir into dye bath.
6. Put the fabric back into dye bath and stir frequently for 30 to 60 minutes, (depending on the depth of intensity desired).

Rinsing:

- While wearing gloves, rinse the dyed fiber first with cool water, then with increasingly warmer water.
- After 3 or 4 rinses, when the water is nearly clear, prepare a soap soak. Use 2 to 3 gallons of very warm tap water and 1½ teaspoons of **Synthrapol®**. The fiber should sit in this soap bath for 5 to 10 minutes.
- Rinse 3 or 4 additional times with warm water.
- Using either **Jacquard's Dyeset Concentrate** or **Jacquard's iDye Fixative** during the initial rinse will further ensure long lasting colors.

Method Two:

1. Fill container with 3 gallons of warm (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 dye bath frequently.
4. Add the soda ash in 2 equal parts at 15 minute intervals, while still stirring the dye bath frequently. (It helps to dissolve the soda ash in a separate container in a little hot water first.)
5. Dye for 30 to 60 minutes after the last soda addition.

Rinsing:

- While wearing gloves, rinse the dyed fiber first with cool water, then with increasingly warmer water.
- After 3 or 4 rinses, when the water is nearly clear, prepare a soap soak. Use 2 to 3 gallons of very warm tap water and 1½ teaspoons of **Synthrapol®**. The fiber should sit in this soap bath for 5 to 10 minutes.
- Rinse 3 or 4 additional times with warm water.
- Using either **Jacquard's Dyeset Concentrate** or **Jacquard's iDye Fixative** during the initial rinse will further ensure long lasting colors.

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)

Be sure to prewash fabric to remove any dirt, grease or sizing. We suggest using Synthrapol®.

Materials:

- Standard top-loading or front loading washing machine
- Procion® MX dye (double the amounts for Immersion dyeing listed in the immersion directions)
- 2 cups soda ash (3 cups for darker shades)
- 6-8 cups plain salt (non-iodized)
- 2 tablespoons Synthrapol® for prewashing and post-rinsing

Steps

For top-loading machine:

1. Fill washing machine to medium load (approx. 6-8 gallons) with hot water. Add salt and dye, and agitate for 5 min., until both are dissolved.
2. Place wet fabric in machine and agitate for 20 minutes.

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 dye bath in 3 parts at 5 minute intervals, being careful not to pour directly onto fabric.
6. Agitate for 50 minutes (30 minutes for pastels).
7. Let machine drain the dye bath and complete the rinse cycle. To remove any remaining dye, run through a complete wash cycle with warm water and **Synthrapol®**.

For front-loading machine:

1. Set washing machine to smallest load appropriate to amount of fabric. Use hottest water setting.
2. In separate containers pre-dissolve: the salt in approximately ½ gallon of hot water, the dye in approximately ½ cup to 1 cup of hot water and the soda ash in approximately ½ gallon of hot water.
3. Pour salt, dye and soda ash into the washing machine.
4. Place wet fabric in the machine and (choosing the longest cycle available) start the machine. If your machine allows, extend the wash cycle before the dye bath drains.
5. Agitate for as long as your machine allows, up to 50 minutes (30 minutes for pastels).
6. Let machine drain the dye bath and complete the rinse cycle. To remove any remaining dye, run through a complete wash cycle with hot water and **Synthrapol®**.

Note: After dyeing in your washing machine we recommend cleaning the machine per the manufacturers recommended method and then running a short cycle of clear water before the next use. This is especially important with front-loading machines, because they will often hold liquids in the seal around the door or in the exterior tub of the washer.

Immersion Dyeing for Protein Fibers

Wool yarn, fabric, fleece and all animal hair fibers are dyed with this method. Silk, yarn and fabric are dyed using the protein method, but the dye bath is run at 100°F rather than heated. Please keep in mind that dye colors can shift (change) when using with protein fibers.

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

Be sure to prewash fiber to remove any dirt, grease or sizing. We suggest using Synthrapol®.

Materials:

- 3 gallons of warm water (105° F) (use cool water for wool)
- Procion® MX dye (see above for general amounts)
- 1½ to 3 cups of salt (non-iodized)
- ¼ cup 5% acetic acid (white vinegar) per pound of fiber
- Synthrapol® for prewashing and post-rinsing

Steps:

1. In a stainless steel or enamel pot, add water, dye and salt. Stir to dissolve.
2. Place pot on stove and stir.
3. Add pre-wetted fiber.
4. Raise the temperature over a 15 minute time span to simmer, stirring frequently. If you are dyeing wool, a gradual heating and gradual cooling of the dye bath is important so as not to shock and felt the wool.
5. Remove or lift out the fiber, add the vinegar and stir.
6. Return the fiber to the dye bath. Stir frequently at a simmer (about 180° to 195° F) for 30 to 45 minutes.
7. Allow to cool before rinsing.

Rinsing:

For wool or other fibers that may felt, use only cool water in each rinse as well as the soap soak. Gentle handling during rinsing is also important to reduce the possibility of felting.

- While wearing gloves, gently rinse the dyed fiber with cool water.
- After 3 or 4 rinses, when the water is nearly clear, prepare a soap soak. Use 2 to 3 gallons of cool tap water and 1½ teaspoons of **Synthrapol®**. The fiber should sit in this soap bath for 5 to 10 minutes.
- Rinse 3 or 4 additional times with cool water.
- Using of either **Jacquard's Dyeset Concentrate** or **Jacquard's iDye Fixative** during the initial rinse will further ensure long lasting colors.

Washing Machine Dyeing for Protein Fibers

Be sure to prewash fiber to remove any dirt, grease or sizing. We suggest using Synthrapol®.

For 3 to 5 pounds of fabric (5 to 7 yards of fabric) NOT RECOMMENDED FOR WOOL YARN, FABRIC, FLEECE OR OTHER ANIMAL HAIR FIBERS.

Materials:

- Standard top-loading washing machine
- Procion® MX dye (**double the amounts** for Immersion dyeing listed in the Immersion directions)
- 1 to 3 cups of 5% acetic acid (white vinegar) depending on the volume of water
- 6 to 8 cups plain salt (non-iodized)

For top-loading machine:

1. Set washing machine to smallest load appropriate to amount of fabric. Use hot water setting.
2. In separate containers pre-dissolve: the salt in approximately ½ gallon of water of hot water and the dye in approximately ½ cup to 1 cup of hot water.
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. Gradually add vinegar to dye bath, being careful not to pour directly onto fabric.
5. Agitate for 50 minutes (30 minutes for pastels).
6. Let machine drain the dye bath and complete the rinse cycle. To remove any remaining dye, run through a complete wash cycle with cool water and **Synthrapol®**.

For front-loading machine:

1. Set washing machine to smallest load appropriate to amount of fabric. Use hot water setting.
2. In separate containers pre-dissolve: the salt in approximately ½ gallon of water of hot water and the dye in approximately ½ cup to 1 cup of hot water.
3. Pour salt, dye and vinegar into the washing machine.
4. Place wet fabric in the machine and (choosing the longest cycle available) start the machine. If your machine allows, extend the wash cycle before the dye bath drains.
5. Agitate for as long as your machine allows up to 50 minutes (30 minutes for pastels).
6. Let machine drain the dye bath and complete the rinse cycle. To remove any remaining dye, run through a complete wash cycle with cool water and **Synthrapol®**.

Note: After dyeing in your washing machine we recommend cleaning the machine using the manufacturer's recommended method and then running a short cycle of clear water before the next use. This is especially important with front-loading machines because they will often hold liquids in the seal around the door or in the exterior tub of the washer.

[Back to top](#)

Silkscreen Printing & Hand-Painting

There are 11 standardized colors (see [hints and tips](#) for list) in the Procion MX line. All other colors, no matter the manufacturer, are mixed formulas of two or more of these standardized colors. We offer a broad range of colors for your convenience, but the ultimate dyer only needs to stock the standardized colors.

Directions for Cellulous Fabrics

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 fibers. It may also be used for silk when fine line definition is not required.

Materials:

- | | |
|----------------------------------|---------------------|
| • Wide mouth quart jar | • 2 teaspoons urea |
| • Measuring spoons | • 1 teaspoon Calgon |
| • 4 teaspoons sodium alginate SH | • 1½ 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 SH, 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.

Standard Method

Be sure to prewash fiber to remove any dirt, grease or sizing. We suggest using Synthrapol®.

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. Iron clean, dry fabric.
2. Prepare dye thickener paste per instructions above. Add ½ teaspoon baking soda to ½ cup thickener paste. The baking soda activates the dye reaction. Activated paste will remain usable for only 4 hours and then must be replaced with freshly activated paste.
3. Divide the activated paste into several containers. Add ½ to 2 teaspoons of dye per ½ cup thickener. Proportion the dye in each container in relation to the amount of thickener paste and desired intensity.
4. Print, paint, stamp or brush on fabric.
5. Air dry completely.
6. Steam set in a steam chamber or professional fabric steamer. See “[Steam Method](#)” in the **Setting Screen Printed and Hand Painted Fabrics** section below for more information.

Pre-soak Method

Be sure to prewash fiber to remove any dirt, grease or sizing. We suggest using Synthrapol®.

Fiber soaked in its chemical assistants (soda ash for cellulosic fibers/vinegar or citric acid for protein fibers) 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 is complete and the printing medium is removed (by washing), the fiber retains its resilience and hand.

The quantity of dye added to the printing paste will determine the intensity of the printed or painted color. ½ teaspoon to 2 teaspoons of powdered dye to ½ 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 (½ cup + 2 T **Calgon** to 1 quart water).

Steps:

1. For one pound of fiber, pre-soak in a solution of 1 gallon of water and 1 cup 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. We recommend experimenting 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. See [Setting Screen Printed and Hand Painted Fabrics](#) below for more information.

Setting Screen Printed and Hand Painted Fabrics

Batch Method

The Procion MX fiber reactive dye will react with the fiber only while it is 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 bundle 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. Rinsing: For wool or other fibers that may felt, use only cool water in each rinse and the soap soak. Gentle handling during rinsing is also important to reduce the possibility of felting.
 - While wearing gloves, rinse the dyed fiber first with cool water, then with increasingly warmer water.
 - After 3 or 4 rinses, when the water is nearly clear, prepare a soap soak. Use 2 to 3 gallons of very warm tap water and 1½ teaspoons of **Synthrapol®**. The fiber should sit in this soap bath for 5 to 10 minutes.
 - Rinse 3 or 4 additional times with warm water.
 - Using of either **Jacquard's Dyeset Concentrate** or **Jacquard's iDye Fixative** during the initial rinse will further ensure long lasting colors.

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.

See <http://www.jacquardproducts.com/assets/jacquard-site/support/instructions/Steaming%20Instructions.pdf> for more information about building your own steamer.

Rinsing:

- While wearing gloves, rinse the dyed fiber first with cool water, then with increasingly warmer water.
- After 3 or 4 rinses, when the water is nearly clear, prepare a soap soak. Use 2 to 3 gallons of very warm tap water and 1½ teaspoons of **Synthrapol®**. The fiber should sit in this soap bath for 5 to 10 minutes.
- Rinse 3 or 4 additional times with warm water.
- Using of either **Jacquard's Dyeset Concentrate** or **Jacquard's iDye Fixative** during the initial rinse will further ensure long lasting colors.

[Back to top](#)

Batik

There are 11 standardized colors (see [hints and tips](#) for list) in the Procion MX line. All other colors, no matter the manufacturer, are mixed formulas of two or more of these standardized colors. We offer a broad range of colors for your convenience, but the ultimate dyer only needs to stock the standardized colors.

Procion® MX dye is the best dye for batik because brilliant colors can be achieved in a dye bath cool enough not to remove the wax. Batik is an additive color process that plays upon the transparency of dye.

Materials:

- 100% cellulose fiber fabric, prewashed and ironed
- Fabric stretcher frame
- Jacquard Beeswax, Paraffin, Soy, or Batik Wax
- Tjanting tools, brushes, or other wax application tools
- Container for heating wax
- Dyes, chemicals and supplies for dyeing
- Electric deep fryer or frying pan
- Pencil or Jacquard Auto Fade Pen

Steps:

Be sure to prewash fiber to remove any dirt, grease or sizing. We suggest using Synthrapol®.

1. Stretch washed fabric on the stretcher. Lightly sketch design with a pencil or **Jacquard Auto Fade Pen**.
2. Melt the Jacquard Batik Wax, a mixture of beeswax and paraffin, or the soy wax. A deep fryer or electric frying pan are the most desirable tools for melting wax, because they reduce the risk of fire by maintaining a constant temperature. The wax mixture may ignite if it is too hot. If the wax mixture is smoking, then it is too hot. See <http://www.jacquardproducts.com/products/wax/> for melting point information for the waxes.
 - Alone, pure paraffin is too brittle and pure beeswax is too supple to give good crackle effects. 60% beeswax to 40% paraffin blend is a good place to start. To alter the crackle effect, change the ratio of beeswax to paraffin.
 - Soy wax is a fairly delicate wax and creating the crackle effect is difficult; however, the benefit offered in the ease of removal of the soy wax may well offset the loss of the crackle. Multi-layer dyeing using soy wax will require reapplication of soy wax because of its more brittle nature.
3. Using the tjanting tool, brushes, or other application tool, apply the hot wax to all the lines and areas which will remain white. Think of the wax application step as a process of retaining color rather than adding color. Let the tool you are using sit in the hot wax until it becomes the temperature of the wax.
4. The wax should penetrate the fabric. If the wax turns white and sits on the fabric, then it will not resist the dye. Raise the temperature of the wax and reapply.
5. When the wax is cool, run through a standard immersion dye bath using cool water. Don't make the water too cold or too hot. Room temperature is fine.
6. Lay the fabric flat to dry.
7. The dye process may have removed some wax from the fabric (especially when using soy wax). Carefully check for this and reapply wax to those areas.
8. Apply wax to the areas which are to retain the color dyed (step 4). When the wax is cool, you may dye with your next color. Remember that Procion MX dye is transparent. If the first dye bath was yellow, a second dye bath of pale red will produce orange fabric in the non-waxed areas. If the third dye bath is blue, the unwaxed orange areas will become brown.
9. Repeat steps 4 through 7 until the design is complete.
10. For **Jacquard Batik**, or **paraffin & beeswax** mixtures remove the wax by one of the following methods:
 - Crumble and abrade the surface to remove excess wax. Remove remaining wax by immersing fabric in simmering water, then cold water. Repeat the immersions until the wax is removed. If too much wax accumulates on the surface of the hot water, the fabric will pick up wax rather than dispose of wax. Ladle excess wax into another container to cool. A final immersion in fresh hot water will remove the last traces of wax. Any remaining wax can be removed with dry cleaning. All wax that was removed can be reused. **Never pour hot wax filled water down the drain or it will clog it.** This method does result in some loss of color.

- Iron the piece between sheets of unprinted newsprint. The newsprint will absorb the wax. You will have to refresh the newsprint when it gets saturated with wax. There will be residual wax with this method, but dry cleaning may remove the last of wax.
11. For soy wax removal; immerse fabric into a tub of VERY hot water with about 1 teaspoon of **Synthrapol®**. Agitate until the wax is dissolved then rinse in very warm water. It may take more than one hot water bath to completely remove all the wax.

Note: Newer, 'green' dry cleaners may not be able to remove residual wax.

[Back to top](#)

Dyeing Reed, Rattan & Wood with Procion MX Dyes

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Dyeing Reeds and Rattan

1. The reeds usually come tightly coiled and should be re-tied loose enough for the dye to flow between them.
 2. Soak the reeds in hot water for 1 hour to overnight to clean them and to wet them for dyeing.
 3. Prepare the dye bath:
 - 1 gallon hot water
 - 1 tablespoon Procion MX dye pasted
 - ½ cup plain salt (non-iodized)
- Stir until mixed.
4. Put the wet reeds into the dye bath and stir (turn coils over) every 10 minutes.
 5. When the reeds have absorbed the dye enough to be the color you want (the reeds will dry to a shade ½ as dark as when wet) add ⅓ cup soda ash dissolved in 1 cup hot water to fix the dye.
 6. Leave reeds in dye bath for up to 2 hours after adding soda ash.
 7. Rinse reeds under cold, running water.

Dyeing Wood

Tub Dye Method: The wood can be dyed according to the standard Procion MX immersion dyeing instructions and left to set in the dye bath for 12 hours after the soda ash has been added.

Direct Application Method: Apply the dye, soda ash and water directly to the wood as in the standard tie dye. Let the wood set 4 to 24 hours and rinse.

These are just two of many methods that can be used to apply dyes to wood.

Although Procion® MX dyes were not developed specifically for dyeing wood, pastel and watercolor effects can be achieved on untreated wood. Sometimes the addition of a small amount of ethyl alcohol (rubbing alcohol from the drug store) will greatly increase the penetration of the dye solution into the wood.

[Back to top](#)

Hints & Tips for Dyeing with Procion MX Dyes

Safety Considerations

- Always wear rubber gloves.
- Wear a NIOSH/MSHA dust mask or respirator when working with dry powders. Inhaling the dye powder or soda ash in large quantities may cause serious health problems.
- Use measuring cups, spoons and utensils for dyeing only. Don't mix with kitchen utensils.

Standardized Colors

There are 11 standardized colors in the Procion MX line. All other colors, no matter the manufacturer, are mixed formulas of two or more of these standardized colors. We offer a broad range of colors for your convenience, but the ultimate dyer only needs to stock the standardized colors.

Standardized Color List:

- | | |
|-----------------------------|------------------------|
| • PMX004 – Lemon Yellow | • PMX072 – Medium Blue |
| • PMX020 – Brilliant Orange | • PMX076 – Cobalt Blue |
| • PMX034 – Magenta | • PMX128 – Warm Black |
| • PMX040 – Fuchsia | • PMX231 – Violet |
| • PMX068 – Turquoise | • PMX232 – Bright Blue |
| • PMX070 – Cerulean Blue | |

Dyeing with Procion MX Dyes

- Dye spilled on surfaces can be cleaned with bleach or household cleansers.
- Use a hand cleaner, such as **Reduran** to remove dye from skin. Do not use bleach since it dissolves protein (like your skin!).
- For an even take-up of dye in immersion dyeing, soak the fiber in clear water for at least 15 minutes to wet completely. If the fiber has been washed, do not dry, move directly to dyeing.
- **Synthrapol®** is a more effective washing agent than regular soap, especially when turquoise, fuchsia and any color mixes containing these dye colors are used. These colors require increased time and care in washing out the excess dye. Often several hot soap soaks are necessary.
- Mix powdered dye with a small amount of water to form a paste when dissolving. After all lumps are removed, gradually add more water until the dye is thoroughly dissolved. For quicker pasting, add 2 drops of **Synthrapol®** before adding the water.
- Because of the nature of dyestuffs (some being denser than others) dye colors will vary in volume when measured by weight. One may certainly measure by volume (by the teaspoon or tablespoon), however, if you intend to recreate specific tones or hues we recommend measuring by weight.
- Altitude, water quality (mineral or chlorine content), humidity, dye bath temperature, brand and purity of vinegar and/or soda ash can all influence the dye process. Perfume, whiteners and brighteners in household detergents and soaps can totally change the dye color. Two seemingly identical runs can have quite different results if any of these variables change.

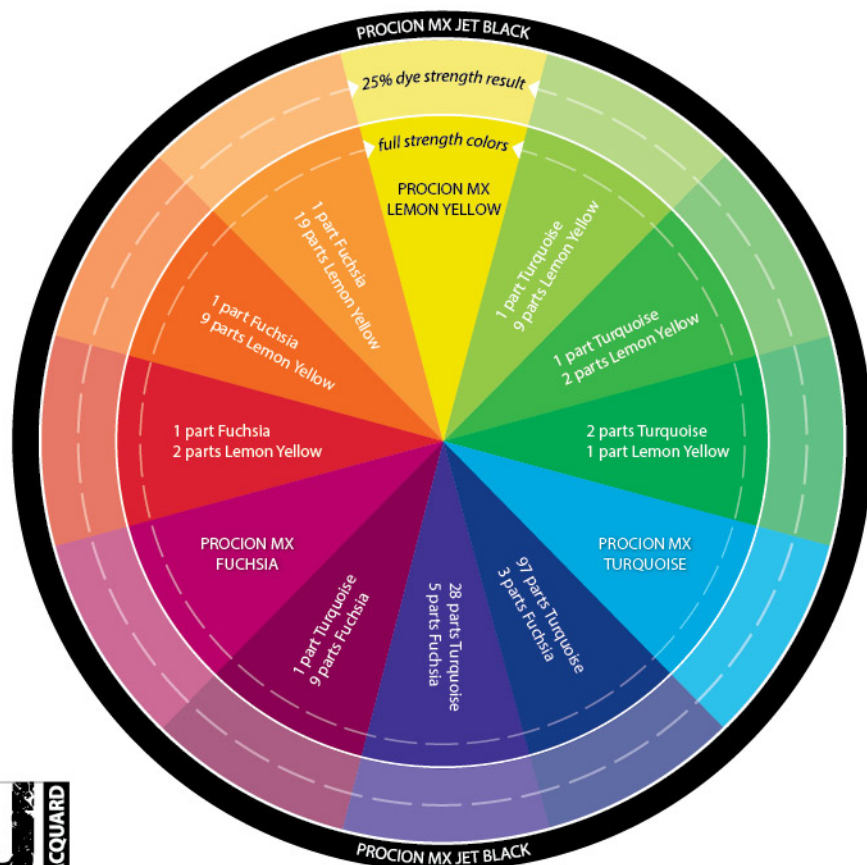
Rinsing Procion MX Dyes

For wool or other fibers that may felt use only cool water in each rinse as well as the soap soak. Gentle handling during rinsing is also important to reduce the possibility of felting.

1. While wearing gloves, rinse the dyed fiber first with cool water, then with increasingly warmer water.
2. After 3 or 4 rinses, when the water is nearly clear, prepare a soap soak. Use 2 to 3 gallons of very warm tap water and 1½ teaspoons of **Synthrapol®**. The fiber should sit in this soap bath for 5 to 10 minutes.
3. Rinse 3 or 4 additional times with warm water.
4. Using either **Jacquard's Dyeset Concentrate** or **Jacquard's iDye Fixative** during the initial rinse will further ensure long lasting colors.

[Back to top](#)

PROCION MX DYE - COLOR MIXING CHART



PROCION MX - COMPLEX COLORS MIXING RATIOS



GRAPE
1 part Fuchsia
3 parts Turquoise



JADE
1 part Lemon Yellow
13 parts Turquoise



PERIWINKLE
1 part Fuchsia
19 parts Turquoise



OLIVE GREEN
1 part Fuchsia
16 parts Turquoise
17 parts Lemon Yellow



CRANBERRY
9 parts Fuchsia
1 part Jet Black



CORAL**
1 part Fuchsia
3 parts Lemon Yellow



TEAL
5 parts Jet Black
2 parts Lemon Yellow
66 parts Turquoise



BURGUNDY
6 parts Fuchsia
9 parts Lemon Yellow
7 parts Turquoise
6 parts Jet Black



BURNT SIENNA
3 parts Fuchsia
10 parts Lemon Yellow
6 parts Turquoise



CHESTNUT
1 part Fuchsia
16 parts Lemon Yellow
11 parts Turquoise



BLUE-GREY
1 part Fuchsia
80 parts Turquoise
20 parts Jet Black



VERMILLION
4 parts Turquoise
17 parts Fuchsia
36 parts Lemon Yellow

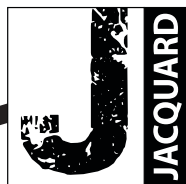
***Should be used in pastel shade 25% or
1/4 tsp/1 g dye for 4 fl oz/118 ml water for batching*



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PROCION MX COLOR FORMULA GUIDE

There are 11 standard Procion MX colors (see Procion MX technical information). All other colors, no matter the manufacturer, are mixed using formulas of these 11. We offer this extended palette for your convenience, and many of our colors are used in these recipes.

If you wish to use the primary colors and black exclusively in your mixes, please see our Procion MX Color Wheel Mixing Chart: <https://www.jacquardproducts.com/s/Procion-MX-Color-Wheel-Mixing-Chart.pdf>.

GENERAL DYEING RECOMMENDATIONS:

- The color formulas presented here are very reliable, but temperature, type of fabric, amount of salt used, fiber type, soda ash used and dyeing method (batching or immersion) can affect the final color.
- The batch dye method was used for color swatches because it yields the deepest and brightest results.
- Running dye tests with these recipes is recommended, before large dye runs.

Using the Parts Method:

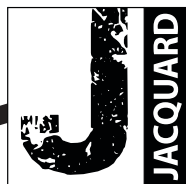
1. Determine the total amount of dye needed for your fiber and divide by the total number of parts to get 1 part.
2. Multiply the 1 part by the number of parts for each color to get the amount you need for that specific color.
3. Repeat with other colors.

NOTE: Measuring small amounts of dye can be made easier with a stock solution. Add one teaspoon (tsp) of dye to $\frac{1}{2}$ cup of water. Use the chart below to get the stock solution equivalent in partial cups, teaspoons and tablespoons.

Dry Dye Powder	Equivalent Stock Solution Volumes (1 tsp in $\frac{1}{2}$ cup)
1 tsp dry dye powder	= $\frac{1}{2}$ cup / 24 tsp / 8 tbsp
$\frac{1}{2}$ tsp dry dye powder	= $\frac{1}{4}$ cup / 12 tsp / 4 tbsp
$\frac{1}{4}$ tsp dry dye powder	= $\frac{1}{8}$ cup / 6 tsp / 2 tbsp
$\frac{1}{8}$ tsp dry dye powder	= 3 tsp / 1 tbsp
$\frac{1}{16}$ tsp dry dye powder	= $1\frac{1}{2}$ tsp / $\frac{1}{2}$ tbsp

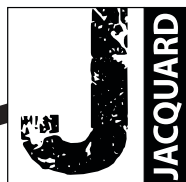
TIPS:

- 1% dye by weight of fabric is a light color.
- 4% by weight of fabric is a dark color.
- 1 lb = 453 grams
- 1 tsp ~ 3 grams
- 6 tsp ~ 4% dye for 1 lb
- 3 tsp ~ 2% dye for 1 lb
- Batching (as in tie dye) gives full color development.
- When immersion dyeing, use 3x more Salt than Soda Ash to get the deepest shade of dye.



‡ = "Cracking Colors" (colors that separate in a tie dye from the ones that "look" pure).

Swatch:	Color Formula:	Parts Method:	Procion Colors:	Tsp Method:
	Daffodil	9 parts 1 part	Lemon Yellow #004 Golden Yellow #010	2 ¼ tsp ¼ tsp
	Goldenrod	16 parts 1 part	Lemon Yellow #004 Brilliant Orange #020	4 tsp ¼ tsp
	Wheat ‡	18 parts 1 part	Golden Yellow #010 Warm Black #128	2 ¼ tsp ⅛ tsp
	Pea Green	9 parts 1 part	Golden Yellow #010 Medium Blue #072	2 ¼ tsp ¼ tsp
	Apricot	9 parts 1 part	Golden Yellow #010 Brilliant Orange #020	2 ¼ tsp ¼ tsp
	Harvest Orange	18 parts 9 parts 1 part	Golden Yellow #010 Brilliant Orange #020 Warm Black #128	2 ¼ tsp 1 ⅛ tsp ⅛ tsp
	Red Brick	9 parts 9 parts 1 part	Golden Yellow #010 Fire Engine Red #030 Warm Black #128	2 ¼ tsp 2 ¼ tsp ¼ tsp
	Tangerine ‡	11 parts 6 parts	Golden Yellow #010 Fire Engine Red #030	2 ¾ tsp 1 ½ tsp
	Red Orange	11 parts 6 parts	Golden Yellow #010 Carmine Red #032	2 ¾ tsp 1 ½ tsp
	Rose Hip	9 parts tone with	Fire Engine Red #030 Warm Black #128	2 ¼ tsp 1/16 tsp
	Antique Rose	9 parts 1 part	Fire Engine Red #030 Warm Black #128	2 ¼ tsp ¼ tsp
	Rose	11 parts 6 parts	Carmine Red #032 Golden Yellow #010	2 ¾ tsp 1 ½ tsp
	Burnt Orange	18 parts 1 part	Brilliant Orange #020 Warm Black #128	2 ¼ tsp ⅛ tsp.
	Berry Red	2 parts 1 part	Carmine Red #032 Golden Yellow #010	4 ½ tsp 2 ¼ tsp
	Dark Pink	9 parts 1 part	Magenta #034 Medium Blue #072	2 ¼ tsp ¼ tsp
	Berry Sorbet ‡	6 parts 3 parts 1 part	Fuchsia #040 Turquoise #068 Warm Black #128	1 ½ tsp ¾ tsp ¼ tsp
	Orchid ‡	1 part 1 part	Fuchsia #040 Turquoise #068	2 ¼ tsp 2 ¼ tsp
	Plum	2 parts 1 part	Fuchsia #040 Medium Blue #072	3 tsp 1 ½ tsp



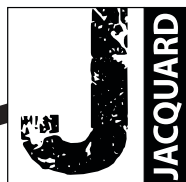
‡ = "Cracking Colors" (colors that separate in a tie dye from the ones that "look" pure).

Swatch:	Color Formula:	Parts Method:	Procion Colors:	Tsp Method:
	Lavender	9 parts 4 parts	Medium Blue #072 Fire Engine Red #030	2¼ tsp 1 tsp
	Amethyst ‡	1 part 1 part	Magenta #034 Cerulean Blue #070	2¼ tsp 2¼ tsp
	Maroon ‡	3 parts 1 part	Carmine Red #032 Navy #078	3 tsp 1 tsp
	Purple Violet ‡	1 part 1 part	Fuchsia #040 Cerulean Blue #070	4 tsp 4 tsp
	Red Violet ‡	1 part 1 part 1 part	Navy #078 Fuchsia #040 Cobalt Blue #076	2¼ tsp 2¼ tsp 2¼ tsp
	Pansy Purple ‡	1 part 1 part	Fuchsia #040 Navy #078	2½ tsp 2½ tsp
	Blue Violet ‡	9 parts 4 parts 4 parts	Navy #078 Fuchsia #040 Cobalt Blue #076	2¼ tsp 1 tsp 1 tsp
	Navy (Red Shade) ‡	1 part 1 part	Brown Rose #126 Navy #078	2½ tsp 2½ tsp
	Blue Slate	2 parts 1 part	Medium Blue #072 Warm Black #128	3 tsp 1½ tsp
	Dark Cobalt ‡	2 parts 1 part	Navy #078 Warm Black #128	1½ tsp ¾ tsp
	Chambray Blue	12 parts 1 part	Cobalt Blue #076 Warm Black #128	1½ tsp ⅛ tsp
	Storm Blue	9 parts 1 part	Medium Blue #072 Warm Black #128	2¼ tsp ¼ tsp
	Mountain Blue	9 parts 1 part	Cerulean Blue #070 Warm Black #128	2¼ tsp ¼ tsp
	Indigo	1 part 1 part	Medium Blue #072 Navy #078	1½ tsp 1½ tsp
	Postal Blue	1 part 1 part	Cobalt Blue #076 Navy #078	2¼ tsp 2¼ tsp
	Prussian Blue	1 part 1 part	Cerulean Blue #070 Navy #078	5 tsp 5 tsp
	Dark Periwinkle ‡	9 parts 5 parts 2 parts	Navy #078 Cobalt Blue #076 Fuchsia #040	2⅞ tsp 1⅞ tsp ½ tsp
	Dusty Blue ‡	9 parts 1 part	Turquoise #068 Brilliant Orange #020	2¼ tsp ¼ tsp

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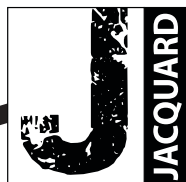
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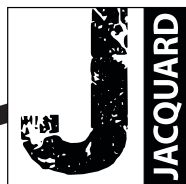
‡ = "Cracking Colors" (colors that separate in a tie dye from the ones that "look" pure).

Swatch:	Color Formula:	Parts Method:	Procion Colors:	Tsp Method:
	Seafoam Blue ‡	4 parts 1 part	Cerulean Blue #070 Rust Orange #016	1 tsp ¼ tsp
	Blue Mist ‡	9 parts 1 part	Turquoise #068 Rust Orange #016	2¼ tsp ¼ tsp
	Malachite ‡	5 parts 1 part 1 part	Turquoise #068 Lemon Yellow #004 Warm Black #128	2½ tsp ½ tsp ½ tsp
	Blue Spruce	1 part 1 part	Lemon Yellow #004 Cobalt Blue #076	2¼ tsp 2¼ tsp
	Spruce	1 part 1 part	Navy #078 Lemon Yellow #004	2¼ tsp 2¼ tsp
	Grass Green	9 parts 5 parts 5 parts	Lemon Yellow #004 Cerulean Blue #070 Medium Blue #072	4½ tsp 2¼ tsp 2¼ tsp
	Yellow Green	18 parts 1 part	Lemon Yellow #004 Medium Blue #072	2¼ tsp ⅛ tsp
	Chartreuse	18 parts 1 part	Lemon Yellow #004 Turquoise #068	2¼ tsp ⅛ tsp
	Vermillion Green ‡	1 part 1 part	Turquoise #068 Golden Yellow #010	2¼ tsp 2¼ tsp
	Lime Green	22 parts 9 parts	Lemon Yellow #004 Turquoise #068	2¾ tsp 1⅛ tsp
	Spring Green ‡	13 parts 10 parts 3 parts	Lemon Yellow #004 Turquoise #068 Medium Blue #072	6½ tsp 5 tsp 1½ tsp
	Shamrock ‡	20 parts 20 parts 9 parts	Lemon Yellow #004 Turquoise #068 Medium Blue #072	5 tsp 5 tsp 2¼ tsp
	Fern Green	11 parts 6 parts	Lemon Yellow #004 Cobalt Blue #076	2¾ tsp 1½ tsp
	Sage ‡	1 part 1 part	Rust Orange #016 Cerulean Blue #070	1½ tsp 1½ tsp
	Warm Grey ‡	1 part 1 part	Rust Orange #016 Cerulean Blue #070	4 tsp 4 tsp
	Cool Grey ‡	3 parts 2 parts	Cerulean Blue #070 Rust Orange #016	3 tsp 2 tsp
	Avocado Skin	2 parts 1 part	Lemon Yellow #004 Navy #078	3 tsp 1½ tsp



‡ = “Cracking Colors” (colors that separate in a tie dye from the ones that “look” pure).

Swatch:	Color Formula:	Parts Method:	Procion Colors:	Tsp Method:
	Artichoke ‡	2 parts 1 part	Turquoise #068 Rust Orange #016	2 tsp. 1 tsp
	Khaki ‡	1 part 1 part	Turquoise #068 Rust Orange #016	2¼ tsp 2¼ tsp
	Fatigue Green ‡	1 part 1 part 1 part	Cobalt Blue #076 Rust Orange #016 Lemon Yellow #004	1 tsp 1 tsp 1 tsp
	Tungsten ‡	1 part 1 part	Rust Orange #016 Medium Blue #072	1½ tsp 1½ tsp
	Raw Umber ‡	1 part 1 part	Rust Orange #016 Medium Blue #072	4 tsp 4 tsp
	Raw Sienna ‡	2 parts 1 part 1 part	Lemon Yellow #004 Medium Blue #072 Brilliant Orange #020	3 tsp 1½ tsp 1½ tsp
	Pottery	28 parts 9 parts	Rust Orange #016 Brown Rose #126	3½ tsp 1⅛ tsp
	Terra Cotta	28 parts 9 parts	Rust Orange #016 Burgundy #124	3½ tsp 1⅛ tsp
	Light Terra Cotta	1 part 1 part	Rust Orange #016 Burgundy #124	½ tsp ½ tsp
	Burnt Umber	1 part 1 part 1 part	Brown Rose #126 Warm Black #128 Brilliant Orange #020	2¼ tsp 2¼ tsp 2¼ tsp
	Red Clay	1 part 1 part	Burgundy #124 Fire Engine Red #030	2¼ tsp 2¼ tsp
	Cerise	2 parts 1 part	Carmine Red #032 Medium Blue #072	3 tsp 1½ tsp



PROCION MX

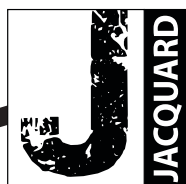
Technical Info. Chart

PROCION MX COLOR INFO

A cold water fiber reactive dye. Use it for immersion dyeing, tie dye, batik, airbrush, garment dyeing, screen printing, spatter painting, gradation dyeing and more. Procion MX fiber reactive dye will dye all cellulose (plant) fibers and some protein (animal) fibers. Common cellulose fibers are cotton, linen, jute, ramie, sisal, and rayon.

There are 12 standardized colors (**in bold below**) in the Procion MX line. All other colors, no matter the manufacturer, are mixed formulas of two or more of these standardized colors. We offer these colors for your convenience, but the ultimate dyer needs only to stock the standardized colors.

Item #	Color Name	Trade Name	C.I. #	Solubility gm/l @	Wash Fastness	Light Fastness	Dis-charg-ability
				120F/50C	1-5	1-7	
PMX 004	Lemon Yellow	MX-8G	Yellow 86	120 g/l	5	5 to 7	Good
PMX 010	Bright Golden Yellow	MX-3RA	--				
PMX 011	Antique Gold		--				
PMX 016	Rust Orange	MX-GRN	--				
PMX 020	Brilliant Orange	MX-2R	--				
PMX 028	Bright Scarlet	MX-BA	--	130 g/l	5	3 to 5	Minor
PMX 030	Fire Engine Red	MX-BRA	--				
PMX 032	Carmin Red	MX-BA	--				
PMX 034	Magenta	MX-5B	Red 5	40 g/l	5	3 to 5	Moderate
PMX 035	Hot Pink		Red 5	40 g/l	5	3 to 5	Moderate
PMX 040	Fuchsia	MX-8B	Red 11	70 g/l	5	3 to 6	Minor
PMX 042	Raspberry		--				
PMX 050	Deep Purple		--				
PMX 058	Marine Violet		--				
PMX 068	Turquoise	MX-G	Turquoise 140	115 g/l	4 to 5	4 to 6	Minor
PMX 069	Aquamarine		--				
PMX 070	Cerulean	MX-G	Blue 163	120 g/l	5	5 to 7	Moderate
PMX 071	Teal		--				
PMX 072	Medium Blue	MX-R	Blue 4	55 g/l	5	6 to 7	Minor
PMX 076	Cobalt Blue	MX2G-150	--				
PMX 078	Navy	MX-4RD	--				
PMX 079	Midnight Blue		--				



Item #	Color Name	Trade Name	C.I. #	Solubility gm/l @	Wash Fastness	Light Fastness	Dis-charg-ability
PMX 086	Forest Green	MX-CBA	--				
PMX 094	Emerald Green		--				
PMX 097	Bright Green		--				
PMX 105	Olive Green		--				
PMX 106	Bronze		--				
PMX 107	Avocado		--				
PMX 119	Chocolate Brown		--				
PMX 124	Burgundy	MX-RDA	--				
PMX 126	Brown Rose	MX-SBR	--				
PMX 128	Warm Black	MX-CW-NA	--				
PMX 150	Jet Black		--	100 g/l*	4 to 5	5	Moderate
PMX 170	Ecru		--				
PMX 180	Peach		--				
PMX 184	Bubble Gum		--				
PMX 192	Lilac		--				
PMX 199	Ice Blue		--				
PMX 201	Robin's Egg Blue		Turquoise 140	115 g/l	4 to 5	4 to 6	Moderate
PMX 210	Pale Aqua		--				
PMX 211	Neutral Grey	C-KG	--	100 g/l @ 30°C	4 to 5	4 to 5	
PMX 231	Violet	MX-G	Violet 14	Good	3	3 to 4	Moderate
PMX 232	Bright Blue	BLUE CIBRA-CRON F	--				

Solubility - g/l = grams of dye per liter of water

Wash Fastness - 1 = worst; 5 = best

Light Fastness=worst; 7=best-ranges accommodate variables include substrate (cotton or viscose) & depth of shade (2/1, 1/1, 1/25)

Dischargeability - this information allows the clever tie dyer the ability to create amazing combinations of color by using a very dischargeable dye with a less dischargeable dye ie. Turquoise & Yellow, discharged=turquoise revealed in a green background.