

Procion MX Dye

three easy techniques for beginners



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Background

Dyeing your own fabric is fun and can be super liberating. With a little practice you can make any color you want, in any value (lightness or darkness) and gradate it with any other color, allowing for an unlimited color palette. You can make any quantity that you need and can always make more of each color if you run out.

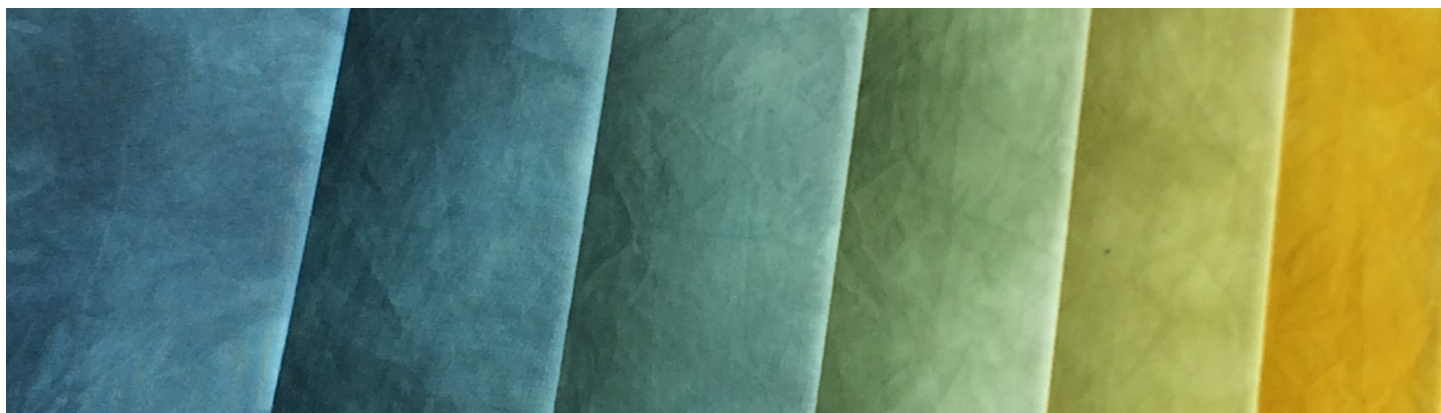
The uneven nature of hand dyed fabric adds a lot of depth to a project. Something to be aware of is that no matter how careful you are, the color never comes out exactly the same from dye bath to dye bath. This could be frustrating for some people, but if you expect it and love the small variations it's no problem. It's these variations that make each project completely unique.

Dyeing your own fabric requires more of a time investment than buying solids or prints simply because you can't run out and buy whatever you need. I order my dye and fabric online, so it takes some planning ahead and waiting for shipping. It also takes time to dye fabric and wash it out before you can use it. However, I find the process of dyeing fabric to be fun, exciting, and totally worth the effort and hope that you will, too.

The type of dye used in these instructions is Fiber Reactive Procion MX Dye. These dyes are made specifically for cellulose (plant origin) fibers such as cotton, linen, hemp, bamboo, rayon, and Tencel. They will also work on silk but the color does look a little different than it does on cotton. Fiber Reactive dyes form a chemical bond with the fibers and have excellent wash fastness and good light fastness. This means that after the initial washing out process, the dye will not fade with subsequent washings. Hand dyed fabrics should be kept out of direct sunlight because the sun will cause them to fade over time.

Many places sell Procion MX dyes and each company gives the colors their own names. They also create their own custom dye mixtures. Dharma Trading Company, Pro Chemical and Dye, and Jacquard Products are the three largest dye suppliers in the US and they each sell hundreds of different color mixtures.

These instructions include basic information on dyeing fabric a solid color, a fun technique called "low water immersion" and a simple gradation technique.



Supplies and Equipment

Dye Supplies

2 oz. containers of Procion MX Dye
1 lb Soda Ash
2 lbs Salt
1 lb Water Softener (if you have hard water)
1 bottle of Blue Dawn
Cotton fabric

Equipment

Dust mask (for particulates, available at hardware stores)
Rubber gloves (regular kitchen dish washing gloves are perfect)
Plastic spoons
Measuring cups
Measuring spoons
Small plastic cups (disposable plastic cups or yogurt cups for dissolving dye)
Larger plastic buckets (such as quart, gallon, 3 gallon, 5 gallon)
Long handled plastic spoons
Clear Plastic box with lid for measuring dye powder and storage
Newspaper
Spray bottle filled with water
Old towels for clean up

Safety First!

All equipment used for dyeing should be reserved only for dyeing.

Never use measuring spoons, cups, or anything else for food after it has touched dye.



About the Supplies

Fabric

Any type of cellulose fabric will work with Procion MX dyes. Fabric that is labeled mercerized or PFD (Prepared For Dyeing) will give you the best color results because it has been treated specifically to accept dye. I prefer to use Dharma Trading Company's Mercerized Cotton Print Cloth or Kona Cotton PFD, or Robert Kaufman's PFD Kona Cotton. Regular cotton fabrics such as muslin, quilter's cotton, old cotton sheets, Osnaburg, cotton flannel, or regular Kona Cotton are perfectly suitable, but the color will most likely look lighter than it would on mercerized or PFD fabric.

Soda Ash (Sodium Carbonate)

Soda ash is used to ensure chemical bonding between the dye and fabric. It is the most important auxiliary because without it the dye will not bond with the fabric and you will only get a pale color that is neither wash fast nor light fast. It is a mild alkali and can be irritating to skin. Gloves and safety glasses should be worn when working with soda ash. It is called Pro Dye Activator from Pro Chemical and Dye or Soda Ash Fixer from Dharma Trading Company.

Salt

Salt helps push the dye into the fabric so you get even color. If you forget to add salt, it's not the end of the world unless you want perfectly smooth, even color. If you prefer more mottled, uneven color you can leave the salt out on purpose. Non-iodized salt is the best. I prefer to use pickling salt because it is non-iodized and dissolves quickly in water. Regular table salt is also fine to use.

Water Softener (Metaphos)

Water softener is necessary if you have hard water - water that contains minerals such as calcium or magnesium. Hard water can cause spotting on your fabric and can make it difficult to wash all the dye out of your fabric. Using a chemical water softener is an inexpensive fix to this problem. Adding a small amount to your dye bath will eliminate any hard water spotting and adding some to the final wash out stage in the washing machine will help get all the dye out. Each company calls it something different, but what you want is sodium hexametaphosphate. From Dharma Trading Company it is Water Softener, from Pro Chemical and Dye it is Metaphos, and from Jacquard it is Calgon.

PRO TIP - Not sure if you have hard water? If you have noticed a white, chalky residue on your dishes after using a dishwasher or on the inside of your shower or bathtub you probably have hard water. If you're still not sure, most local hardware stores sell an inexpensive home water test kit.

Dye Process - solid/immersion dye

Gather all of your dyeing supplies and fabric before you start. Always wear rubber gloves when working with dye and auxiliaries, while measuring dye powder, stirring dye baths, and washing out fabric. Make sure to always wear a dust mask when working with dry dye powder. Once the dye is completely dissolved in water you can remove the dust mask.

PRO TIP:

Create your own dye mixing box by laying newspaper down in the bottom of a plastic tub and spritzing it with water. Then measure your dye powder in there. It will help keep the dye particles from floating around. And you can store your dye supplies in there when you're done! Safety first!



1. Soak the fabric in warm water

Fill up a large bucket with enough warm water so that your fabric can be

submerged and move freely. Let the fabric soak while you are getting everything else ready.

This step will help the dye distribute evenly through the fabric for smooth results. When you are ready to dye your fabric, gently squeeze out some of the excess water before adding the fabric to the dyebath.

2. Dissolve the dye powder

Measure the required amount of dye powder, from the recipe in chart 1, into a small plastic container. Use a clean measuring spoon for each dye color so your dyes don't get contaminated. I keep a little plastic container filled with water and a towel in my dye-measuring box so I can rinse and dry my measuring spoons in between each color. When all of the dyes needed for one color are measured into the container, add a small amount of room temperature water and stir well to dissolve the dye.

3. Prepare the dye bath

Measure the required amount of warm water for your dye bath recipe in chart 1 into a plastic container that will easily fit the water and your fabric and leave plenty of room for stirring. Add the salt and stir well to dissolve. If you have hard water, add the required amount of water softener and stir well. Then add the dissolved dye from step 2 and stir well.

4. Add fabric to the dye bath

Stir the dye bath again and add the damp fabric. For even results stir regularly for 15 minutes. For mottled or uneven color you can leave the fabric in the dye bath without stirring or stirring only occasionally.

5. Activate the Dye

At this point the dye has not bonded with the fabric. It is necessary to activate the dye to make it chemically bond with the fibers so that the color you get is what you want and to make it wash and light fast.

To activate the dye, dissolve the required amount of soda ash from your recipe in a small amount of water. Push the fabric to the side of the dye bath with your gloved hand or a long handled plastic spoon and add the dissolved soda ash to the bath by pouring it down the side, not directly onto the fabric. Stir well.

6. Stir the Fabric for 30 - 60 minutes

The fabric must remain in the dye bath for at least 30 minutes after the soda ash is added for the dye to fully react with the fibers. For darker colors and black, it is often helpful to leave the fabric in the dye bath for 45 - 60 minutes. For the most even color, stir the dye bath regularly during the 30 minutes. For mottled or uneven color less stirring is required. You can decide which look you prefer.

7. Wash out Fabric

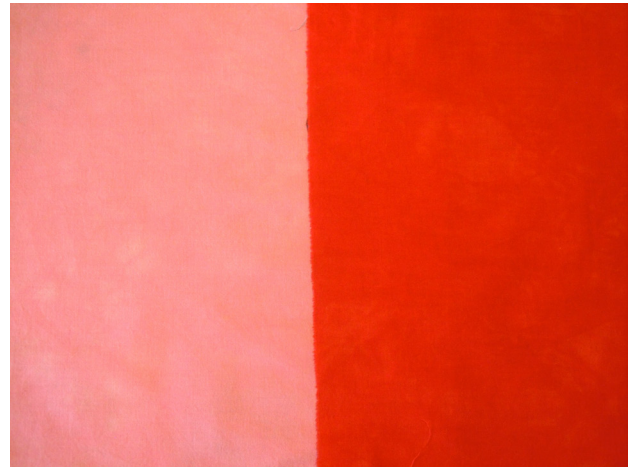
Start by rinsing the fabric with cool water until the water runs clear. Gradually increase water temperature to hot and continue rinsing until the water is clear. Add a couple drops of blue dawn to a container of hot water and swish fabric for a couple of minutes. Rinse the fabric again with hot

Repeat the last two steps until there is no trace of color in the rinse water. Gently squeeze out excess water.

Washout tips:

After the initial rinsing with cool water you can let the fabric soak in hot soapy water for an hour or two, then rinse out.

Don't let different colored dyed fabrics lie in a pile during the washout process. Dye can easily transfer from one fabric to another at this stage.



These two fabrics were dyed the same color, but the one on the right wasn't activated with soda ash.



Fabric that was stirred regularly, on the right, compared to fabric that was not stirred, on the left.

Dye Chart 1

When you are first starting out, it's helpful to keep notes on what you're doing. Make note of how much fabric you use, how much salt and soda ash, and how much of each dye powder you used. The chart below will help you get started with quantities.

The dye powder amounts listed are the total amounts needed for a range from pale to dark colors. You can use the total amount of one color, or combine more than one color to achieve the total amount needed. For example, to mix a pale purple on 1/2 yard of fabric, I would want 1/8 – 1/4 tsp. of dye powder total, so 1/8 tsp. of blue plus 1/8 tsp. of red might be a good place to start.

	1/4 yard fabric	1/2 yard fabric	1 yard fabric
dye powder	1/16 - 1/2 tsp	1/8 - 1 tsp.	1/4 - 3 tsp.
water	2 cups	1 liter	2 liters
salt	1 Tbsp.	2 Tbsp.	1/4 cup
soda ash	1/4 tsp.	1/2 tsp.	1 tsp.
metaphos (if needed)	1/8 tsp.	1/4 tsp.	1/2 tsp.

Notes on color:

Dye colors do not mix like paint colors. Adding black dye to another color will not dull the color like black paint does. I find it helpful to think of black like dark gray blue. Adding it to yellow will give you different greens and adding it to red will give you purples.

Some colors are stronger than others, meaning that when you mix them you will see more of that color. For example, if you are attempting to mix a true orange you might mix half yellow with half red. This will result in a very reddish-orange. Yellow is a lighter, weaker color and needs to be added in larger quantities to red and blue in order to see its effect.

There is no such thing as white dye. To achieve very pastel colors use the smallest measurement of dye needed for the amount of fabric you have.

Don't judge a color too soon. It is impossible to know exactly how a color will turn out until after the dyed fabric has been washed and dried. A color may look a certain way when you first add your fabric and then change once you add the soda ash. It will look much darker in the dye bath than after it is all done.

Interesting results can be had from over dyeing fabric. If you dye your fabric a color that you're not excited about you can put it into another dye bath after the fabric has been washed out. The new dye color will overlay the previous color for a new third color. Think of your color wheel here: yellow fabric over dyed blue will result in green fabric.

Low Water Immersion Dyeing

This is a super fun, easy technique that creates beautiful color mixtures and texture on fabric. It uses less dye, less water, and no salt. Also, no stirring. Win!

1. Get fabric wet. Squeeze out excess water and put the fabric in a container. A small container will result in more mottling. A large container will allow for more color mixing and smoother transitions. You choose!
2. Dissolve dye in water according to the chart below. This is your dye solution. Use up to three dye solutions for each piece of fabric. Each solution can be mixed from multiple dye powders if desired.

	1/4 yard fabric	1/2 yard fabric	1 yard fabric
dye powder	1/2 tsp.	1 tsp.	2 tsp.
water	1/4 cup	1/2 cup	1 cup

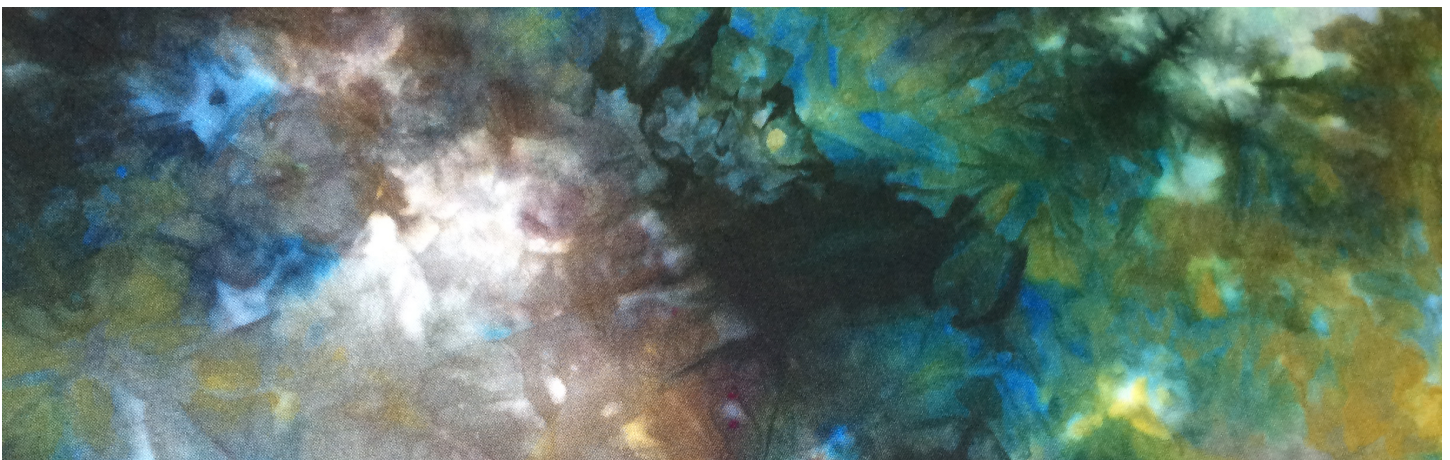
3. Pour dye solutions over fabric. Now you can either leave the fabric alone for distinct color areas, or you can squeeze or poke the fabric and turn it over for more color mixing.

4. Activate the dye. Dissolve soda ash from the chart below and pour it over the fabric.

	1/4 yard fabric	1/2 yard fabric	1 yard fabric
soda ash	1/4 tsp.	1/2 tsp.	1 tsp.
water	1/8 cup	1/4 cup	1/2 cup

5. Let the dye work for at least 30 minutes. 45 – 60 minutes is ideal, especially for dark colors. During this time you can either leave the fabric alone, or if you want more color mixing and softer looking results, you can squeeze or turn the fabric over periodically.

6. Wash the fabric out.



Easy Gradation Dyeing



These instructions create a 5-step gradation in a really quick, easy process. The process is super flexible, so you can increase or decrease the number of fabrics to create more or less gradation steps in your sequence. Use Chart 1 on page 7 for quantities of water, salt, soda ash, and metaphos for each individual dyebath in the sequence.

Dye procedure for five step gradations

1. Cut 5 pieces of fabric the same size. Soak them all in a bucket of warm water.
2. Line up 5 plastic containers that will hold enough water for the recipe (from Chart 1 on page 7) with room for fabric and stirring. Label each bucket with a piece of tape and number 1 through 5. Add the required amount of water to each bucket.
3. Add the required amount of salt to each bucket and stir well.
4. In a small, dry container measure the amount dye powder listed below for the dye solution. You can mix this total amount from multiple dyes if you want. Dissolve with 1/4 cup warm water and stir it well.

	1/4 yard fabric	1/2 yard fabric	1 yard fabric
dye powder for solution	1 1/2 tsp.	1 Tbsp.	2 Tbsp.

5. Add dye solution to each dyebath using the following sequence.
Add 1/8 cup dye solution to bucket #5
Add 1/8 cup water to the dye solution container and stir well.
Add 1/8 cup of the new dye solution to bucket #4.
Add 1/8 cup water to the dye solution container and stir well.
Add 1/8 cup of the new dye solution to bucket #3.
Add 1/8 cup water to the dye solution container and stir well.
Add 1/8 cup of the new dye solution to bucket #2.
Add 1/8 cup water to the dye solution container and stir well.
Add 1/8 cup of the new dye solution to bucket #1.
Discard the last 1/8 cup of dye solution.
6. Stir each dye bath again. Add one piece of damp fabric to each dye bath and stir well for 10 minutes.
7. Add the required amount of soda ash to each dye bath and stir well.
8. Stir dye baths well for 30 - 60 minutes. Then wash, following the usual washing instructions.

Resources

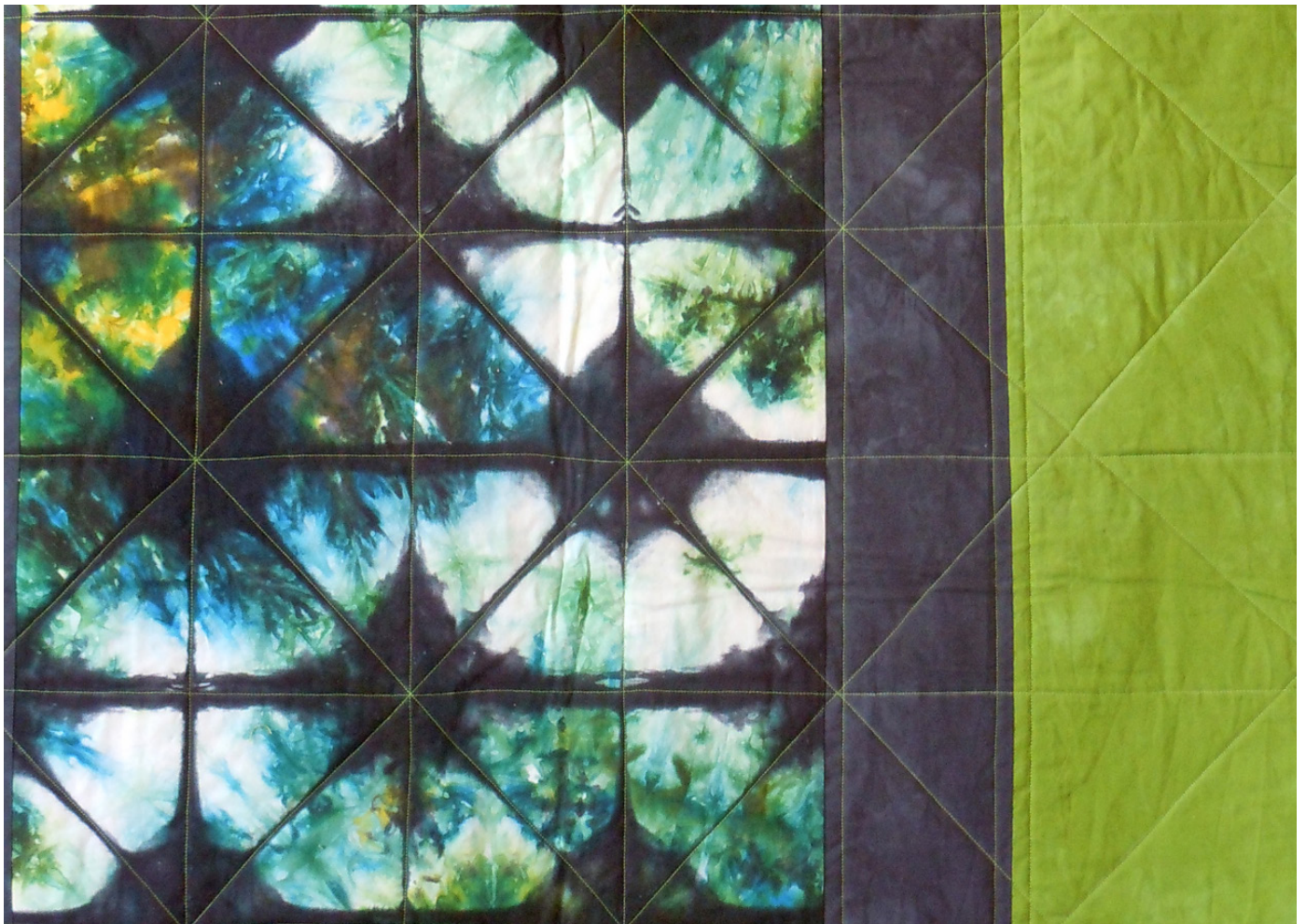
Supplies

Dharma Trading Company
Fabric, dyes, auxilliaries, information
www.dharmatrading.com

Pro Chemical and Dye
Dyes, auxilliaries, information
www.prochemicalanddye.com

Colorado Wholesale Dye Corp.
Dyes, auxilliaries
www.grateful-dyes.com/

Dick Blick
Jacquard Procion dyes
www.dickblick.com



Feel free to get in touch!

email: kim@kimemquilts.com

instagram: @kimemquilts

Please tag me if you post your fabric dyeing adventures on instagram. I would love to see what you make!