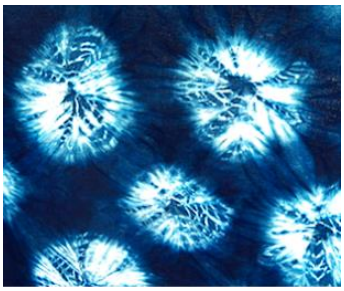

Take And Make Kits

Indigo Dyeing

Supplies

The supplies included in this kit are:

- 10g of Stony Creek Colors High Purity Indigo
- 15g of Rit Color Remover (contains sodium dithionite also known as hydrosulfite)
- 10g of Sodium carbonate (soda ash)
- 2 quarter-yard pieces of cotton fabric (ready for dyeing)
- pH test strips

The supplies you may need to provide are:

- White fabric, clothes, or yarn (they must be 100% plant fibers, like cotton or linen, or protein fibers, like wool. They can not have any synthetic fibers in them. Try t-shirts, tote bags, or napkins.)
- Two 2.5 (minimum) or 5 gallon buckets
- Quart Jar
- Stir stick or non-kitchen use utensils
- Electric kettle or stove top for heating water
- Dishwashing style rubber gloves
- Clothesline or drying rack
- ½ - 1 cup of distilled white vinegar
- Marbles (optional)
- Mask (optional)
- Protective eyewear (optional)
- Marbles (optional)
- pH-neutral detergent (such as Synthrapol or Orvus Paste) (optional)

Instructions

You will need to work in a well-ventilated area. You will most likely want to work outside. Be sure you have plenty of room to work that you don't mind getting stained, or put down something to protect the area, like a tarp or plastic tablecloth.

Optional preparation: Scour fabric

Scouring is a hot water wash that removes industrial sizing, dirt, waxes, oils, lanolin (wool), sericin (silk) and pectic substances (plant-based fibers) from your fabric. The fabric we are providing does not need to be scoured but it doesn't hurt if you scour any other cotton you want to dye.

- For plant-based fibers, like cotton or linen, use 2 tsp Synthrapol or detergent (neutral soap) and 8 tsp soda ash (alkaline surfactant) per pound of fabric. Add scouring agents to your very hot water wash in a machine, or to a clean bucket/pot of very hot water (above 160 degrees F) and let scour for an hour while stirring. Scouring ensures even take up of the dye. *Fabrics sold as "Ready for Dyeing" do not need to be scoured.*

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- Protein-based fibers, like silk and wool, are usually best scoured by hand using Orvus Paste (1 tsp per 1 lb fiber being dyed) or gentle soap with hot water that doesn't exceed 160 degrees F, so as not to damage or "felt" the fibers.

Tip: You can scour a bunch of materials at once and do not need to dye them all right away. Just make sure they are dry before you store them.

Preparing the Dye Vat

For the Indigo dye to bond with the fibers of our material, we need to create a vat for our material to be submerged in, and that vat liquid must have the oxygen content reduced for the Indigo molecules to be water soluble. Once water soluble with reduced oxygen in an alkaline solution (pH 10-11.5), the dye can form weak bonds to the fiber. To have the dye permanently bond to the fiber, it then needs to be re-oxidized by simply air drying it for a bit. Reduced Indigo will appear yellow-green, while oxidized Indigo is deep blue, this change will occur before your eyes when you initially pull out the material from the vat and expose it to the air.

1. Pre-wet the indigo in the quart jar. Mix the indigo with enough water to wet it out entirely, getting rid of gritty clumps.

Tip: An easy way to hydrate the indigo is to add it to water in a glass jar with a tight-fitting lid and some marbles; shake well for a few minutes. If you do this, we suggest you remove marbles before dying.

2. First, you will need to make a "stock solution". Add the pasted indigo and half of the sodium carbonate to a quart jar and fill about a third of the way with 140 F water. Make sure both powders are thoroughly mixed and then fill the jar nearly full of more hot water.
3. Sprinkle in ¾ of the Rit Color Remover, stir gently, and screw the cap onto the jar.
4. Let the stock solution sit to reduce for at least 15 minutes. You should see the color go to green or yellow.

Tip: It is a good idea to place this mason jar upright and sealed into a larger container in case it leaks. Placing it in warm water will help speed up the reaction. If after 15 minutes you slowly turn and rotate the jar and see a lot of settled indigo at the bottom, gently rotate to try to get that indigo into suspension.

5. Meanwhile, fill your pot or bucket with just under 2 gallons of water at about 120F-140F (a little hotter than bathwater), remember you still need to add your 1-quart stock solution to this bucket/pot. Room temp water is fine but may take slightly longer to reduce.
6. Add remaining Rit Color Remover and sodium carbonate. The target pH of your vat should be around 10 after the stock is added. Use the provided test strips to test the solution throughout the process. If you aren't getting close to that, add more sodium carbonate. Prepare the vat by adding the remaining Rit Color Remover to the vat bucket/pot with 120-140 F water.
7. Add the stock solution to the vat bucket/pot. Stir gently *without splashing* and wait 10-15 minutes for it to go fully into "reduction" (become water soluble under alkalized conditions to bond with fibers).

Dyeing with Indigo

1. Wearing gloves, pre-wet scoured material with water then slowly submerge the materials into the vat *carefully*. You want to minimize the amount of oxygen you are adding to the vat by being gentle and not lifting the material up and down over the surface. Carefully and slowly work the indigo particles into the fabric by massaging the fabric under the surface. If there are drips into the vat, splashes or bubbles created, oxygen (from the air) is being added, making the vat less potent and reducing the amount of material you can dye.

2. For all indigo dyeing, regardless of vat type, you want to build up color through successive dips. Start with longer dips (5-10 minutes) and then follow up with shorter dips (30 seconds - 1 minute) to deepen the shade, taking care not to agitate, stir, splash or drip back into the vat.
3. Remove the materials. To reduce the amount of splashing from drips falling into the vat, try to wring out the material underneath the surface before bringing it up, then bring it up slowly. As the materials are being removed, let them drip into a second nearby bucket. The indigo rich contents of the bucket can be recycled back into the vat when you recalibrate it for later use.
4. Allow a minimum of 10 minutes and a max of 30 minutes (don't let it completely dry) between dips so the fiber can fully oxidize with the material hanging in a shady spot or rinse in a separate bucket of clean, tepid water. When you're happy with the depth of color, remember that some of the indigo will rinse off, and that plant-based fibers tend to dry a few shades lighter than their color when wet. So, if you love a color you have reached in the vat, at least dip it one more time!

Note: If you want to get the most out of the Indigo stock, don't rinse between dips and collect the drips to add back into the vat later. If you want to have a better indication of the material's shade of blue, rinse between dips.

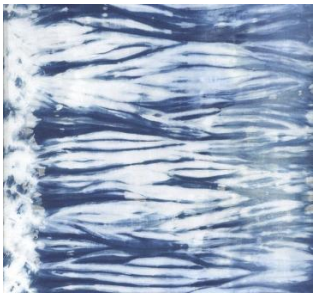
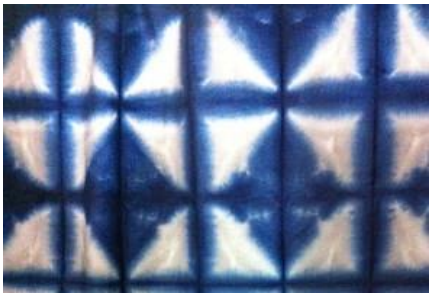
5. When you have finished your dips, the dye needs to be set into the material. Fill the second 2.5 or 5 gallon bucket/container and add distilled white vinegar to neutralize the alkalinity of the fibers. If using 2.5 gallons of water use ½ cup of vinegar, or 1 cup of vinegar if using 5 gallons of water. Let the material sit in the water-vinegar solution for 5-20 minutes, depending on the density and how much material there is.
6. Rinse the remaining excess dye and vinegar water solution out of the material with warm or hot water. Indigo may still rub off a bit so we would suggest being careful with your first few times wearing the garment (DON'T sit on any white couches!).

These instructions came from the following website: https://www.stonycreekcolors.com/pages/vat-recipe

What next?

To dye patterns into your fabric, you can try any tie-dyeing technique. One Japanese form of tie-dying that is traditionally used with indigo is called shibori. Shibori involves several methods of folding, twisting, scrunching and binding to create different patterns. You can see a few ways to create shibori techniques at these websites:

- https://honestlywtf.com/diy/shibori-diy/
- https://diyprojects.com/shibori-tie-dye/
- https://www.marthastewart.com/1540786/shibori-dyeing-techniques

If you would like to learn more about dyeing cloth and yarn, try one of these ebooks, available through Hoopla:

- Tie-Dye 101 https://www.hoopladigital.com/title/14762336
- DIY Tie-Dye https://www.hoopladigital.com/title/14276200
- Hand Dyeing Yarn And Fleece https://www.hoopladigital.com/title/12584024
- Batik And Tie Dye Techniques https://www.hoopladigital.com/title/11603269

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