Stony Creek Colors

HYDRO VAT

RECIPE INSTRUCTIONS

This is the fastest vat and works well for all types of fabrics. We are using Rit Color Remover as the chemical reducing agent because it is widely available for a gallon vat. You can use hydro or thiourea dioxide if those are more accessible to you.

Ingredients: This recipe is for a 2-gallon vat

- 15g of Stony Creek Colors Natural Indigo (25%) or 10g of Stony Creek Colors High Purity Indigo (40%)
- 15g of Rit Color Remover (contains sodium dithionite also known as hydrosulfite)
- 4 g of Sodium carbonate for protein-based fibers (wool or silk) or 10 g for plant-based fibers (cotton or linen)
- 2 gallons of water
- A pot (minimum of 2.5 gallons)

Preparing the Dye Vat:

- 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 dyeing.
- 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 with more hot water.
- Sprinkle in ¾ of the Rit Color Remover, stir gently, and screw the cap onto the jar.
- 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 or while at the bottom, gently rotate to try to get that indigo into suspension.

- Meanwhile, fill your pot with just under 2 gallons of water at about 120F-140F (remember you still need to add your 1-quart stock solution to this pot). Room temp water is fine but may take slightly longer to reduce.
- Add remaining Rit Color Remover and sodium carbonate. The target pH of your vat should be around 10 after the stock is added. 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 vessel with 120-140 F water.
- Add the stock solution to the vat vessel (2.5-gallon pot). Stir gently without splashing and wait 10-15 minutes for it to go fully into reduction.

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Dyeing with Indigo:

- 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.

For plant-based fibers 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 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" sometimes do not need to be scoured.

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.

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.

- Wearing gloves, pre-wet scoured material with water then submerge the materials into the vat carefully. You want to minimize the amount of oxygen you are adding to the vat by adding slowly and not lifting up and down a lot.

Tip: To get your materials more evenly dyed, we suggest gently rub the material with your hands staying submerged below the surface for a few minutes. If you are dyeing shibori or tied garments and not worried about even tones throughout, you can place them in there and fish them out when ready.

- 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.

- Then, taking care not to agitate, stir or drip back into the vat, remove the materials.

- As the materials are being removed, let them drip into a nearby bucket. The indigo rich contents of the bucket can be recycled back into the vat when you recalibrate it for later use.

- Allow a minimum of 10 minutes and a max of 30 minutes between dips so the fiber can fully oxidize with the material hanging in a shady spot. When you're happy with the depth of color. Remember 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!

Tip: If you want a very light color for your final garment, make the vat less strong by adding less indigo stock, and do shorter dips. You want at least three dips even if they are short. Rinse in cool water until a lot of the unfixed indigo is rinsed off.

- For the integrity of the fiber, add a bit of vinegar or citric acid to the final soak (especially for protein-based fibers like wool and silk). Then rinse again! Indigo may still rub off so we would suggest being careful with your first few times wearing the garment (DON'T sit on any white couches!).

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Want to dye something bigger? For A 10 Gallon Vat You Will Need:

- 70g 25% SCC indigo
- 70g Rit Color Remover
- 18g sodium carbonate for wool or silk and 26g for cotton
- 1-quart jar for stock solution
- Use a 10 gallon (40 quarts) stainless steel pot and use 9 gallons of water for your vat which can be found online or in most big box stores