

e-COLOR

Natural Dye System

Natural dyes are known for their beautiful and multi-hued shades. The e-color Natural Dye System offers the dyer ease of use: a single mordant for all colors and crystalline extracts. The pigments are of the highest quality and their production process conforms to ecologically sound methods.

E-color dyes are non-toxic, but they are highly concentrated. They should not be ingested or come into contact with eyes or skin. Wear a dust mask and gloves when working with powders and dyeing.

Madder – This is the fleshy root of the plant. Source of orange, peach and rust shades. Use .5% - 5% WOF

Osage - Wood of the osage bush. Source of yellow and ochre. Use .01% - 2% WOF

Cochineal - A scale insect harvested from the prickly pear cactus. Use .01% - 2% WOF

Cutch – This is the heartwood of the tree. Source of browns. To yield a darker brown, fabric must be oxidized as a last step. Use at 3% - 15% WOF.

Indigo – This is the above ground growth of the plant. Source of blues. Requires "reduction". Use 3% - 15% WOF.

Water - Mineral and chlorine can change color and prevent dye uptake. Use only filtered or distilled water.

Utensils - Only non-reactive materials: glass, stainless steel, or enamel. Since indigo dyeing requires less heat you may use a large plastic bucket as a dye-vat.

Measurements - Most dyers work in grams. For customers who do not have a dye scale, we have included an approximate equivalency chart on the last page.

WOF - *weight of fabric* - All measurements are based on this amount.

Fabric - Use natural fabrics (cellulose or protein) that have not been bleached. We have had good results with some rayon's. Fabrics should be washed before dyeing.

Water Ratio - 25 to 1- A one pound dye lot will require twenty-five pounds of water, or twelve and one-half quarts (approx. 12 L)

Ecowet - As a wetting agent, Ecowet enables good saturation. Use at 4% WOF.

Mordant – Mordents help dye to adhere to fibers, influences colors and increases lightfastness.

INSTRUCTIONS:

Mordanting

All e-color dyes (except Indigo) require the fabric to be treated with mordant before dyeing.

1. Weigh fabric (WOF).
2. Wash the fabric using TNA Soap to remove dirt and sizing.
3. Fill a pot with enough water to cover fabric easily.
4. Add Ecowet to pot – use 4% WOF
5. Add damp fabric to pot
6. Heat slowly, allowing ten minutes to reach 120°F. This is called the "wetting out" process.
7. Dissolve mordant (17% WOF) into a separate container. Add mordant slowly. If you add it too quickly it will bubble up and spill over. Stir until completely dissolved.
8. Add mordant to dye bath. Agitate fabric well and stir frequently while holding temperature at 120°F for ten minutes.
9. Raise dye bath temperature to 180°F over a period of ten minutes.
10. Hold the temperature at 180°F for ten minutes and agitate often.
11. Remove fabric.

You may save premordanted fabric for up to twenty-four hours in a zip lock bag. Do not let fabric sit in puddles or dry out too fast.

Dyeing - Madder, Cochineal, Osage and Cutch. (Indigo is described separately)

1. Mordant fabric.
2. Weigh out dye according to the depth of color desired following WOF percentages.

3. Fill a pot with enough water to cover fabric easily.
4. Dissolve dye in a small amount of warm water and add to dye bath.
5. Place damp, premordanted fabric into the dye bath. Raise temperature to 120°F and hold for ten minutes, agitating frequently.
6. Raise temperature to 180°F, over a period of ten minutes and continue to stir. Maintain at 180°F for ten minutes.
7. Remove fabric. Rinse in cold water.
8. Wash fabric in cold water with TNA Soap.

Cutch only - After the ten minutes in the 180° dye bath, add 30% Hydrogen Peroxide - 10mL Hydrogen Peroxide per one gallon of water, to dye bath and boil for ten extra minutes. This is only needed for Cutch concentrations of 5% WOF or more.

Making the Indigo Dye Bath

This is very easy with our special “pre-reduced” indigo. Dipping and folding instruction are available in a wide variety of books written about the subject (please inquire) but to prepare a bath to use;

1. Use water that is 60-70°F (20-24°C)
2. Mix the following in about 3-5 L of water
 - 20gm Pre-reduced Indigo
 - 80gm of Sodium Hydrosulphite (better) **OR** 80 gm Thioureadioxide
 - 100gm Sodium Carbonate
3. Let foam settle
4. Prepare (mordant) fabric and dip cloth into dye bath.
5. Remove and let air dry. This is when the indigo color shows up (oxidizes).
6. Repeat dipping 2-3 times for a deeper shade.

Dyeing - Purples, Greens and Other Mixes:

Greens and purples are obtained through double dipping. Since both green and purple require Indigo: dye first with either Osage

(yellow) or Cochineal (pink, red), rinse and wring out and then re-dye in the Indigo vat.

Countless combinations can be achieved, though, using all the dyes. If you are mixing a colour that does not require any blue, combine dye concentrate powders right in the dye bath. This is one of the advantages of the e-color Natural Dye System.

Below is an Equivalency Chart. Please test all fabrics before dyeing a large quantity. The amounts below are approximate.

Equivalency Chart:

1lb = 453 gm 1 quart = 32 oz
 1 quart = 908 mL 16oz = 1 lb
 16 Tbsp = 1 cup 3 tsp = 1 Tbsp
 1 oz = 28.37 gm

| Fabric | Oz | lbs | Grams | Measure |
|--------------------------|------------|-----|-------|------------|
| Mordant - 17% WOF | | | | |
| 10 lbs | 27 | 1.7 | 771 | 4 3/4 cups |
| Ecowet - 4% WOF | | | | |
| 10 lbs | <u>6.5</u> | .4 | 184 | 3/4 cup |

Dye Concentrates:

Cochineal 1 tsp = 1.44 gms
 Madder 1 tsp = 2.24 gms
 Indigo 1 tsp = 3.2 gms
 Cutch 1 tsp = 4.8 gms
 Osage 1 tsp = 2.24 gms

Thiourea Dioxide 1 tsp = 3.2gms
 (Use 3.83% weight of Indigo powder)

100% Sodium Hydrochloride
 1/2 tsp = 2.75 gms
 (Use 16% weight of Indigo powder)

For further question please do not hesitate to contact us at:

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