

# batik workshop

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***The basic principal of batik is that wax is a resist.***

Wax and water repel each other. Where you wax, dyes or paints will not penetrate the paper or fabric. Wax will not act as a resist on wet fabrics or papers. The fabric or paper must be dry before adding wax over subsequent layers of wax.

## Safety tips

***Wax is flammable, so treat with respect and ensure that it does not overheat. When the wax becomes too hot, it starts to smoke. Here are some good tips to consider:***



- Use a dedicated thermostat controlled pan or a commercially available batik wax pot such as available from [Abig.de](http://Abig.de) in Germany (shown to the right).
- Always turn off and unplug the heating element or appliance when leaving the room. Do not leave heated wax unattended at any time.
- Wax is flammable -- Never heat wax directly over an open flame or electric burner but instead use a specially made wax melting pot or double boiler.
- Wax melting pots usually feature metal basins and can become very hot. Avoid touching the heated bowl with your hands.
- If a small amount of hot wax is dripped on your skin, run it under cold water for at least five minutes and then peel off the wax. Seek medical attention immediately for any more serious burns to the skin.
- Always dispose of used batik wax and never reuse it. It may act unexpectedly when reheated, such as sputtering or popping like water added to hot oil.
- Always remove brushes from the wax pot -- do not leave them in it when not in use. If you do, the bristles can become damaged and lose their shape.
- While a fire is unlikely, it is important to understand ahead of time what to do in the event of an electrical fire.

***Follow safety guidelines as set by your local Fire Department to prevent electrical accidents and fires.***

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## Wax



***In this DVD Rosi uses batik wax, which is a very versatile, ready-made blended combination of hard and soft wax.***

However, you can make up your own blends of paraffin wax, beeswax and/or microcrystalline wax.

A blend of 50% beeswax and 50% paraffin wax is a good starting point and this provides a good resist and reasonable cracks. If you want lots of cracks, increase the proportion of hard, paraffin wax. On the other hand, if you really want to resist cracks, increase the proportion of soft beeswax. Another common blend is one-third each beeswax, microcrystalline wax and paraffin wax.

The required temperature of the hot wax will vary with different fabrics, but is usually set between 120-140° C (250-285° F). As a general rule, the wax must be just hot enough to penetrate the fabric on application and it should appear transparent on contact. *If it is not hot enough, the wax will appear milky and opaque on contact with the fabric and will not penetrate the fabric satisfactorily and it may flake off, allowing the dye to bleed under.*

On the other hand, if the wax is too hot it starts to smoke. It also becomes so fluid that it will not penetrate the material properly, and may froth on contact with the fabric. So make sure you maintain a consistent temperature of your wax by using a heating element that has a temperature control device, or monitor the wax temperature with a thermometer designed for that purpose.

***Do not apply wax to wet paper or wet fabrics, it will not form a resist. Batch fabrics before allowing to dry for 4-12 hours in order to allow the dyes to fix to the fabric. (See Chapter, 'Batching and Ironing the Wax Out' on the DVD) Once batched, the fabrics can be dried and more wax and color applied.***

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## Dyeing



*There are no hard and fast rules about mixing the chemicals and dyes – every batik artist has his or her own methods and short cuts – so treat these recipes as a starting point for your own experiments. Many dye distributors can recommend specific methods of dye preparation and use for the products available from their inventory. Always consult your distributor for the best*

*information on how to prepare and use specific dyes for your projects.*

## Urea

Urea is a hygroscopic or wetting agent that stops the dyes from drying out too quickly. Small and large quantities are easily available from textile craft suppliers.

Thoroughly dissolve four tablespoons of urea in one liter or two pints of warm water. The resulting solution is known as *Chemical Water*. If you have high humidity where you live then use less urea. If the conditions are very dry, you may require more urea in your chemical water.

If you live in a hard water-area, add one teaspoon of water softener such as Calgon (or Metaphos) to the urea before adding the water.



## Chemical Water

Chemical water is only used for dye painting / direct application (not immersion dyeing). It is a blend of water and urea and is used with fiber reactive dyes to create a dye solution. It helps to keep the applied dyes wet long enough for them to penetrate the fibers and produce bright colors. It can be reintroduced to the fabric when blending colors or when a softer color is desired. (See Section "Working with Silk" for thorough demonstration.)

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Chemical water is easy to make. Begin by mixing a quart or one liter of chemical water for your batik projects. Use small amounts as needed and store the remainder in an airtight container, in a cool, dark place. It will keep indefinitely if it is not contaminated with dye or activator. Make sure you label the jar with the formula and date

### FIXING SOLUTION / ACTIVATOR *(made with SODA ASH)*

*Dyes need an alkali fixing-agent to make them bond to the fibers. A solution made with Soda Ash generates the chemical reaction that bonds or fixes the dye molecules to the fiber.*

*For direct dyeing applications, you can either pretreat the fabric with the fixing solution or add the fix to the dyes themselves but then the lifespan of these mixed dyes is limited.*

*When dip dyeing, the fixing solution is added to the dye bath during the dipping process.*

### SODA ASH (for FIXING SOLUTION)



Soda Ash or Sodium Carbonate is the chemical fixative needed to generate the chemical reaction with the dyes and fix them into the cloth. Once Soda Ash is added to dyes the resulting dye solution must be used up within 4 - 8 hours to ensure the dyes fix to the cloth.

***Tip: In most of the projects in this DVD, Rosi has pre-soaked the fabric in soda ash rather than mixing the soda ash with the dyes. As a result, the dyes will last longer (up to 4 weeks) if stored in a cool place in an airtight container.***

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*To prepare the fixing solution:*

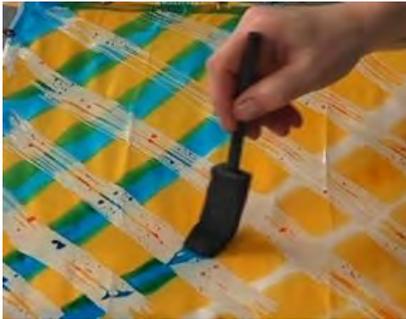
1. Thoroughly dissolve two heaped teaspoons of soda ash in tepid water.
2. Top up to one liter (two pints) with cold water.
3. Store in a sealed container at room temperature.

*For pre-soaking of fabrics:*

1. Dissolve 3 Tablespoons per liter of water.
2. Soak the fabric in the soda ash solution between 10 – 20 minutes.
3. Squeeze out excess dye and work with it wet or line dry out of the sun to work with it dry. Do not rinse the fabric nor tumble dry as residue soda tends to be left behind on the drum.
4. Pour remaining soda ash into a clean container.
5. Cap, label and store in a cool place. Solution can be reused for 2-4 months.

*Soda-soaked cloth can be stored dry for later use. Cotton and viscose can be stored indefinitely but silk needs to be worked on within a week.*

## APPLYING COLOR



There are two basic methods of applying the color:

- 1} *Direct Application* where the dye is hand-painted on to the fabric with a brush, sponge or spray bottle
- 2} *Dip or Immersion Dyeing*, where successive colors are applied by immersing the fabric in a dye bath.

You can work a design entirely in one method or can combine them. The method of application governs the way in which dyes are prepared. The amounts of dye, water and chemicals you will need depend on the fabric to be dyed and the methods to be used. Weigh the dry fabric or determine the amount of liquid needed to immerse it. Use as little water as possible because the dye reacts with the water as well as the fabric.

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## PROCION TYPE MX DYES

Procion type MX Dyes are cold water fiber reactive dyes. These dyes are used for dyeing natural fibers, such as cotton, linen, hemp, silk viscose/rayon. They won't work on synthetic fibers such as nylon or polyester, nor can you use them to dye wool.

Different fabrics will take up the dye colors differently.

For example, cellulose fibers (e.g. cotton) will take a dye color differently from protein fibers (silk). Experiment with different weights and weave of fabric. Keep a note of which ones absorb more dye and vice versa.



*Tip: Prepare some fabric swatches before starting your project. You can increase the amount of chemical water (dilution) to lighten the color on the fabric, or increase the amount of dye concentrate to darken the solution. Note your swatches with ratios used to refer to when working on your project.*

## DRYING AND FIXING THE DYES (BATCHING)



*For wall art or fabrics Rosi does not intend to wash, she often avoids batching the fabrics and just allow the dyes to dry naturally, and then re-wax and dye again. However for wearable or items that may get wet or exposed to water, it is essential to batch before drying to achieve the maximum benefit of the dye color molecules bonding with the fibers in the cloth.*

To ensure that the dyes are fixed then you need to extend the reaction time of the dyes. Dye molecules penetrate fibers more effectively when moisture is present. The process of increasing the time taken for the wet fabric to dry is referred to as 'batching'.

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*Here's how it's done:*

1. Sandwich the wet or damp unrinsed fabric between two sheets of plastic sheeting.
2. Place the rolled fabric in a cool room away from direct sunlight.
3. Batch for 4-12 hours or even overnight. This keeps the fabric wet and allows the molecular reaction to continue, creating a deeper color.
4. Rinse off excess dye in cold water and a few drops of rinsing agent (Synthrapol) or mild detergent in a bucket. The rinsing agent helps prevent color contamination.
5. Machine wash in cold water with the rinsing agent and if necessary machine wash again but in warm water 40-60°C. Allow to line (air) dry or machine dry.

### **SAFETY NOTES WHEN WORKING WITH DYES**

- Always wear rubber gloves and an overall or apron when working with dyes.
- Always wear a face mask to avoid breathing in dye powders.
- Do not eat, drink or smoke in the dyeing area.
- Equipment must be reserved for use with dyes and nothing else.
- Clearly label containers for dyes and chemicals.
- Never use hot water with dye powders as it will melt the wax.
- Make sure there is adequate ventilation.

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## SGRAFFITO AND CRACKLING



**Etching** (also referred to as sgraffito) can be used to add controlled shapes and random texture to a batik design. Wax is brushed all over the fabric, then a pointed tool (tapestry needle, meat skewer, tips of scissor blades etc) are used to scratch or scrape designs through the wax. When dye is applied, it penetrates through the etched marks into the fabric. To aid the coloring you can mix the dye with a drop of cooking oil, which also helps to break

down the wax.

Another interesting effect is **Crackling** (or Marbling.) Crackling involves crumpling up or folding an area of waxed fabric to create random cracks, then applying color. This effect is often regarded as a basic characteristic of batik, but traditionally in Indonesia, cracks in the wax were seen as a sign of poor workmanship.

The technique can be used for surface design and in art projects to great effect, and the resultant marbled veins can help to unify a picture.

You can create different cracking effects by varying the mixture of wax. A good mixture of wax for cracking is 70% paraffin wax and 30% beeswax or microcrystalline wax.

***Tip: Control over crackling can be achieved by varying the thickness of wax applied to the fabric. Cracks in a thick layer of wax will give strong lines of color without bleed. On the other hand, cracks applied to a thin layer of wax will allow color to penetrate beyond each crack and give a pale color to the cloth. For the best results, before applying color, place the crackled waxed fabric in a freezer or a refrigerator for a few hours and you will find the cracks are more defined.***

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## DISCHARGING (Bleaching)



- *Bleach is a strong oxidizing agent and very corrosive. Follow the manufacturer's instructions for use and disposal. Avoid inhaling bleach fumes.*
- *As a rule of thumb -- the stronger the bleach solution the faster the reaction. However, fast discharges often result in stark contrasts of colors.*

Cheap household bleach can be used straight from the container, but stronger thicker solutions can be diluted. For fast reaction, use

1-part bleach with 1-part water. For slower more controlled reaction, dilute 1-part bleach with up to 5-parts of water.

Bleach weakens the fibers of the fabric, so take care not to leave the fabric in the solution too long (never more than five minutes). Time the discharge carefully, and note the times taken to achieve different shades of color.

*Never bleach on silk or wool as it destroys the fibers and the fabric disintegrates.*

Bleach mixes can be saved and reused (store in an airtight sealed container). Bleach tends to break down the wax and makes it less adhesive. If you are going to discharge at different stages, you may have to re-wax some areas. Some colors do not bleach to white. Discharged areas can be waxed and dyed again.

*To neutralize or stop the bleaching process, the best method is to use is a stopping agent such as Bleach-stop, Bleach-out, or Antichlor. No matter how much you rinse it carries on bleaching a little. So the best way to stop it is to add a stopping agent to the rinsing water. Follow the manufacturer's instructions for propose use and disposal of this product.*

Visit Rosi's website when you have time,

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*and if you enjoyed this workshop, let her know!*

VISIT WEBSITE

