

The page is framed by a decorative border of red batik patterns. The border consists of vertical and horizontal bands of repeating geometric motifs, including horizontal lines, vertical lines, and small dots, arranged in a grid-like fashion. The word "batik" is written in a large, elegant, serif font in the center of the page, with the letters in a dark red color that matches the border.

# batik

The roots of batik are ancient and spread throughout the world. No one knows exactly when people first started applying wax, rice paste, or even mud to cloth to resist dye. But what we know today as the process of batik brings centuries of cultural influences and an untold assortment of recipes, stories, patterns, processes, histories, hopes, beliefs and dreams.

Batik is known to have existed in China, Japan, India, Indonesia, East Turkestan, Thailand, Europe, and Africa. But it was on the island of Java in the Indonesian archipelago where batik emerged as one of the great art forms of Asia. Initially it was the pastime of privileged women but gradually batiked cloth became synonymous with artistry. As its popularity increased, more and more people became involved in batik production. Eventually it became the national costume worn all over the islands. When the Dutch colonized Java in the seventeenth century, batik was introduced into Europe.

In Africa, traditions of resist dyeing are woven into the histories of many tribes. The Yorubas of Southern Nigeria use cassava paste while the Soninke and Wolof tribes of Senegal use rice paste. Then there is the very famous mud cloths of the Bambara people of Mali produced by applying mud, from local ferrous ponds and colouring the cloth with a dye from tree bark.

China has a long history of batik, but today the technique is mostly practiced by nomadic tribes who live on either side of the South China border. Foremost among these tribes are the Miao who make exquisite batik cloth in combination with embroidery and applique. And in India batik changed again — wax drawing was combined with hand-painting. It belonged to the caste of indigo dyers and the cloth told intricate stories of religious legends. Even today, bards recite verses depicting the episodes illustrated in these batiked cloths.

Like many methods of hand produced cloth, batik processes are disappearing as they are replaced by more factory production methods such as silkscreening. But batik is a very needed cottage industry in many areas of the world as it is labor intensive, cooperative, and requires minimal capital.

## Batik Processes

*Only by understanding the process of batik or better yet trying one's hand at it can one fully appreciate the depth of beauty of a piece of Javanese batik or an African mud cloth or perhaps a Miao jacket. There are as many processes as there are peoples — each with a different resist recipe, a unique dye combination, an added step, or a different story. Much can be learned from these cloths. Hold them, study them, let them speak to you for they hold centuries of information. The batik processes outlined in this newsletter are based on products that are available in the West. They are meant to be a guide to get you started. From here, a world is waiting to be discovered. Experiment, push the limits, search for inspiration within roots and in new techniques.*

### The products required for batik are few.

#### FABRIC

For best results cloth made from natural fibers should be used. This would include cotton, silk, rayon, linen, and wool. It is best to choose a fabric with a tight, smooth weave. Despite the fact that most fabrics are scoured and bleached before you buy them, it is advisable to wash the fabric prior to use to remove any impurities which might hinder even dyeing. Soak fabric in warm water with a small amount of soap such as Synthrapol, then thoroughly rinse and iron while still damp.

#### WAX

The quality of the resist depends primarily on the composition of the waxes used. Beeswax, traditionally used, is strong and durable but is not resistant to alkali which is found in most dyes. Microcrystalline wax, a synthetic version of beeswax, has similar properties with more resistance to alkali. Paraffin wax has a lower melting point, is thin and crackles easily. Impurities in wax can be removed by heating the wax and straining it through a piece of muslin cloth. Different combinations of these waxes will give different results.

#### GENERAL PURPOSE WAX

1 part beeswax  
1 part microcrystalline wax  
1 part paraffin

#### COMMERCIAL READY-MADE BATIK WAX

2 parts paraffin  
1 part microcrystalline

#### STRONG WAX FOR TJANTING

2 parts beeswax  
1 part microcrystalline

#### CRACKLE WAX

4 parts paraffin  
1 part microcrystalline

The wax can be heated in an electric frying pan or in a substantial metal pot on a hot plate. Care and common sense must be exercised to avoid accidents.

- > DO NOT OVER HEAT WAX AS IT MAY IGNITE. MAINTAIN A TEMPERATURE OF ABOUT 248°F (120°C). WAX WILL SMOKE WHEN TOO HOT.
- > SHOULD FIRE OCCUR, SMOTHER POT OF WAX WITH LID OR DOUSE WITH BAKING SODA.
- > DO NOT HEAT WAX ON AN OPEN FLAME.
- > CLEAN OVERSPILT WAX IMMEDIATELY.

#### TOOLS

There are many tools used to apply hot wax to cloth. The tjanting and brush are traditional to hand drawn batik while copper stamps and rollers are used in production batik. Handmade tools for special effects are often seen in contemporary batik. Look after your tools. Use them with flexibility and imagination.

**TJANTINGS** — Tjantings come in many styles but basically they consist of a small metal reservoir with a fine spout attached. It has a heat resistant wooden handle. Hot wax is scooped into the reservoir and the tjanting is used much like a pen with the spout being the nib. Handling the tjanting is a matter of some skill but almost anyone can become adept at regulating the even flow of wax. Hold the tjanting in a relaxed position much as you would a pen and keep it horizontal to the cloth. Fill reservoir only half full. Insure the wax is always hot. Keep a small cloth handy to wipe spout before applying to cloth. Keep a gentle, even, and rhythmic pressure on the cloth.

**BRUSHES** — Brushes are used for both applying wax and dye. Wax brushes should be inexpensive natural hair or bristle. They need to be primed by first placing them in a lower temperature wax. Then they can be cooled and shaped in preparation for higher temperature wax. Wax brushes should be kept pruned of burnt bristles and reshaped before wax hardens. Brushes for applying the dye need to be tightly packed and absorbent. Many types of brushes can be used but a favourite are the handmade Japanese deer hair "surikomi" brushes. With proper care they will last a lifetime.

**BLOCKS** — Traditionally blocks are made from copper sheets and wires intricately formed into a motif and can be found in the markets of many Asian countries. Blocks can also be made by hand using any absorbent or heat conductive material. Metal, cardboard, felt, pipecleaners can all be used. Attach them to a block of wood (not larger than 6 inches square) to ensure insulation from the hot wax while printing.

#### DESIGNS

Draw on available resources such as photographs, books, fabrics, etc. But don't forget personal experience and attitude are the most valuable sources of inspiration. Keep designs simple at first to allow time to fully understand the three variables of batik: fabric, wax and dye. Work in an explorative manner and observe the spontaneous interaction between these elements. Enjoy the experience of drawing with molten wax with a tjanting and pouring on wax with a brush. Apply the three primary colors of dye and observe their blending, creating fresh, unpremeditated spectrums of color. Apply more wax and experiment with immersion in a dye bath.

#### COLOR

Color is the language of the batik artist. As you become more familiar with the process your eye will begin to discern the combination and layering of colour required for a specific effect. It is essential that the artist learns to anticipate the over-dyeing sequences. For instance, the first dye bath determines the direction of the overall color plan. Dye colors are transparent, therefore as each color is added it is affected by all previous colors it is over-dyeing. Any color which is to remain as it is must be covered with wax.

#### DYES

Dyestuffs suitable for making batik must be capable of being applied to natural fibers in cold water. A hot water dye would melt the wax and destroy the design. The dye most favoured by batik artists is the fiber reactive Procion MX manufactured by ICI. The recipes that follow list two methods for applying the dye. The first is the immersion method whereby each color is applied in succession through a dyebath. The second method is direct application. Here the dye is handpainted onto the fabric, multiple colors at a time. You will find you will use both methods on their own or in combination.

## WHAT YOU WILL NEED

• Stainless steel, enamel, plastic or glass containers for measuring, mixing and dyeing. Do not use galvanized metal or aluminum for mixing or storage. • MASK and GLOVES • SODA ASH (Sodium Carbonate) – an alkali fixative for reactive dyes. • SALT – a leveling agent (works to produce even dyeing) • UREA – a hygroscopic agent which draws moisture from the atmosphere. This is required for batch dyeing or handpainting. • PROCION MX POWDER DYES • DIRECTIONS

## SAFETY IN USE

Although no chemical is entirely free from hazard, these products will present a low to no health risk, provided that good standards of studio hygiene are observed in their use and storage. All persons handling them should take precautions to avoid accidental ingestion, inhalation, skin/eye contact and should be aware of any limitations of use of specific products. While dyes and the chemical associated with their use are not highly toxic, they are industrial chemicals and should be handled with care. If chemical products get into the eyes by accident, wash thoroughly with water and obtain medical treatment. Prolonged or repeated contact with skin should be avoided. Wear rubber gloves and use implements to stir solutions and dyebaths. Inhalation of dusts should be avoided. If the dyes are handled where particles may become airborne, a suitable dust respirator should be worn. Obviously, chemicals should not be taken internally, and food, drink and smoking materials should be prohibited where chemicals are employed. The utensils used for dyeing should not be used for other domestic purposes (eg. food). A final suggestion: Children and animals are naturally curious. Do not leave open jars or bottles where little hands and paws may get to them. Safety data sheets on individual products are available upon request.

## RECIPE FOR DYEBATH METHOD

To dye 1 lb. of fabric. (approx. 3 adult t-shirts OR 1 pair medium weight pants OR 4 meters medium weight fabric)

COLOR VALUE	PROCION MX DYE	SALT	WATER	SODA ASH
PALE	3/4 tsp. (3.75 g)	3 Tbsp. (45 g)	2 1/2 gal. (9.5 L)	3 Tbsp. (45 g)
MEDIUM	2 1/4 tsp. (11.25 g)	9 Tbsp. (135 g)	2 1/2 gal. (9.5 L)	3 Tbsp. (45 g)
DARK	6 tsp. (30 g)	1 1/2 cup (360 g)	2 1/2 gal. (9.5 L)	3 Tbsp. (45 g)
DEEP	12 tsp.+ (60 g+)	2 1/2 cup+ (600 g+)	2 1/1 gal. (9.5 L)	3 Tbsp. (45 g)

*You will seldom need to mix dyes to the deep formula, however to obtain a rich black, this formula is necessary. We recommend mixing 1 part Navy MX2GA to 3 parts Black.*

## DIRECTIONS

1. Dissolve dye into a small amount of water. Insure there are no lumps. 2. Into another larger container, pour required amount of water (approx. 105°F). Add dissolved dye solution. Container should be large enough to allow the fabric to float freely. 3. Add prewetted fabric to the dyebath and stir well. 4. Dissolve salt completely in warm water. Add salt to dyebath and stir continuously for 10-15 min. Stir occasionally for another 15 min. 5. Dissolve soda ash in hot water. It is important that the soda ash is completely dissolved. Add to the dyebath. Stir continuously for 5 min. Stir occasionally for another 30 min. (For maximum permanence and depth of shade, allow fabric to remain in dyebath for an additional 30 min.) 6. Fabric may be rinsed in a washing machine or utility sink. Rinse the dyed cloth well in cold water, then raise the temperature to hot and add Synthrapol. Use 30 ml. of Synthrapol to 500 g. of fabric. Rinse again.

*Note: Rinsing is one of the most important steps in the dye process. This is not optional. It is necessary to remove unaffixed dye particles from the fabric. It should not be rushed. Water should run absolutely clear at the last rinse.*

## NOTES

1. Procion MX dyebaths cannot be stored and reused. Once the process had been completed, the dyebath cannot be reactivated. 2. When dyeing turquoise, some dyers prefer to substitute Glauber's Salt (Sodium Sulfate) for plain salt to achieve more brilliant shades. This applies to Turquoise MXG only. 3. The depth of shade is determined by the amount of dye not used in the dyebath. 4. Removing the fabric from the dyebath before the process is complete in an attempt to get lighter shades will only result in decreased wash and lightfastness. 5. To produce darker colors or different shades than originally anticipated, add more dissolved shades to the dyebath prior to adding the soda ash. Once the soda ash has been added, the dye becomes permanent and the color will not change significantly. 6. Remember Procion MX Powder Dyes are for natural fibers only. They will not dye the polyester in poly/cotton blends. 7. Dyebath method may be done in a washing machine for larger projects. We recommend this procedure be done by those already familiar with the dyeing process.

## RECIPE FOR BATCH DYE OR HANDPAINTING METHOD

### Prepare a Soda Soak Solution

1/2 Cup Soda Ash  
1 Gallon Hot Water  
Large Plastic Container

1. Dissolve the soda in hot water. This solution will keep indefinitely at room temperature and can be

*Recipe for Batch Dye or Handpainting Method – continued*

reused to soak more fabric later. 2. Soak the fabric for 30 min. Wring excess solution back into container for reuse. Dry fabric in preparation for waxing and painting.

### Preparing the Dye Solution

COLOR VALUE	PROCION MX DYE	SALT	UREA	WARM WATER
PALE	1/2 tsp. (2.5 g)	2 tsp. (10 g)	1/2 tsp. (2.5 g)	1/2 cup (125 ml)
MEDIUM	1 tsp. (5 g)	1 Tbsp. (15 g)	1 tsp. (5 g)	1/2 cup (125 ml)
DARK	2 tsp. (10 g)	2 Tbsp. (30 g)	2 tsp. (10 g)	1/2 cup (125 ml)

Dissolve all ingredients completely in the warm water. Dye solutions may be kept for up to one week in a covered container. The freshest dye solutions will produce the brightest colours



## BATIK - step by step

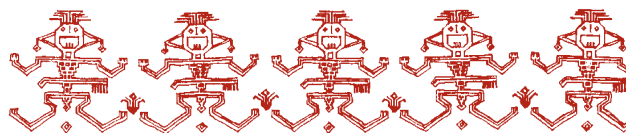
1. Scour fabric.
2. If applying by hand, presoak fabric in soda soak solution and dry.
3. Transfer design to fabric.
4. Some batikers like to stretch the fabric (or t-shirt) on a frame. Others prefer to place on top of newspaper topped with a piece of wax paper.
5. Prepare the dye — either a stock solution for hand-painting or a dyebath for immersion. Establish the lightest to darkest colors you will be using. Remember the overdyes... if you are dyeing with yellow and then turquoise, you can achieve green by allowing yellow areas to be overdyed with turquoise.
6. Heat the wax until it flows smoothly and penetrates the fabric. If it looks transparent on the fabric it is ready. If it looks opaque it is not hot enough.
7. Apply wax to any part of the design which is to remain white.
8. Dye the first (and lightest) colour. If you are immersing, be careful to keep the fabric flat so that the wax does not crack (unless you want the hairline cracks in the design)
9. Lay the fabric flat to dry. Hanging may cause the dye to run and become uneven at this stage.
10. When dry, wax and dye can be applied again. Continue until the cloth is how you want it.
11. Remove the wax by either boiling or ironing. This can be done right away if all dyeing has been done by immersion dyebath method. If you have hand applied dye, it is best to roll the cloth between two sheets of plastic and allow it to cure for 24 hours prior to removing the wax.

### Removing the wax by boiling:

First flake off as much wax as you can. Immerse the cloth in boiling water for 3 to 4 minutes. Take it out and submerge in cold water. Wax will float to the surface and should be scooped out to use again. Do not pour down the sink! You may need to repeat this a few times before all wax is removed. Finally wash in water with a half teaspoon of Synthrapol and then rinse well.

### Removing the wax by ironing:

Again, flake off as much wax as you can. Make a thick pad of newspaper. Place cloth between two layers of clean newsprint and iron on top of pad. Change newsprint as it becomes saturated. When no more wax is coming out, wash fabric in very hot water and half a teaspoon of Synthrapol. Rinse.



### Some Final Comments...

Experiment with different wax recipes for different effects such as crackle or no crackle. If combining dye methods, it is usually easier to hand apply dyes first. All the wax can be removed part way through the batik process. In this way areas can be enclosed again with wax and unrelated color progressions can be achieved. For instance, a yellow can be reserved with wax and a purple laid right next to it. Try lightly dampening the fabric before waxing. This creates a fragile layer of wax with a unique crackle design.