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## How to Marble

### Materials and Equipment

#### 1. Fabric or Paper

Most plain, woven fabrics are suitable for marbling. Cotton, silk, linen, wool and most cotton/polyester blends may be used with the Marbling Colours. Synthetic fabrics and leathers may require experimentation. If using paper it should be firm enough to prevent tearing. Do not use paper with glazed or sized surfaces.

#### 2. Alum

Also known as Aluminum Sulfate or Potassium Aluminum Sulfate. It is used after mixing with tap water as a mordant to make the colours adhere to the fabric or paper. The former is preferred by paper marblers as it is less acidic and therefore does not cause deterioration over a long period of time. Use a plastic dish pan or bucket to soak the fabric OR a sponge brush and smooth surface to evenly coat it.

#### 3. Marbling Colours

There are a few brands out on the market; Pebeo Marble, Liquitex, Setacolor Pearl, and our own G&S Marble Colours. All brands have their own advantages and liabilities.

#### 4. Marbling Bases

Size bases are made from vegetable matter which is added to water to thicken it and form the suspension mixture upon which the colours float. Advanced Marbling Base or Pebeo Base are ready to use in approximately 1 hour. Carrageen Moss or Sodium Alginate may also be used. Both are extracts of seaweed and must be prepared the day before using. Carrageen Moss is usually cooked, Sodium Alginate is not.

#### 5. Marbling Trays

A great variety of containers may be used, they should be 1/2" to 1" larger all around than the fabric or paper to be printed. The classic marbling tray is 3" deep, an average size would be 20" x 26". It is easier to print from a shallow container and easier to see the floating designs if it is a light colour. Ready made containers such as plastic dish pans, cat litter boxes, photography trays or rating pans may be used. Base containers may be made very simply from a cut down cardboard box slopped into a white garbage bag. Very large trays may be improvised by nailing 2" x 4" boards at the corners, use a plastic drop cloth draped over the center and edges of the boards and filled with base.

#### 6. Design Tools

Use a stylus for free style marbling and for drawing colour into patterns. The stylus can be a thin wooden stick, a T-pin, a Knitting needle, a stick pin, etc.

Rakes and combs are used to form other types of patterns. These may be purchased or made. Ordinary hair combs or hair pick work well. Combs may be made by pushing nails, Straight pins or T-pins into the corrugation of a 1" wide strip of cardboard and taping over the top. The teeth should be evenly spaced and long enough for easy manipulation. A row of straight pins stapled and taped to a narrow piece of wood also makes a good comb. The comb cannot be wider than the tank and must be a couple of inches shorter to make a zigzag motion.

Whisks and drop brushes are used to apply many drops on the size at one time. Whisks to splatter paint may be made by putting a rubber band around one end of a bundle of broom bristles.

Eyedroppers or plastic applicator bottles can be used to apply colours. The applicator bottles can be resealed and used to store the colours.

#### 7. Newspaper

Cut strips of newspaper into 2" wide strips as long as the width of the tank. Use them to scrape excess paint from the surface of the size. Newspaper may also be used to cover the work area and to dry printed fabric. Garbage bags and rags or paper towels also come in handy.

## Procedure

### Step 1 - Alum Mordant - Do this the day before Marbleizing

First wash the fabric to remove dirt, oils and finishes to allow for good colour pick-up and penetration. Dry and iron or iron dry to remove wrinkles.

Next prepare the alum mordant solution. Use 2 Tbsp. of alum per litre or quart of warm tap water. Stir to dissolve. Add the fabric and soak for 15 minutes, (20 - 25 minutes if you are reusing the solution), with intermittent stirring. Remove fabric allowing alum solution to run back into the container for future use. Do not rinse. Hang or lay flat to dry. If there are wrinkles in the fabric iron it lightly, but do not use steam.

Mordant may also be applied to the fabric with a foam brush or sponge. Wear rubber gloves. Lay the fabric on a firm surface, make sure the solution penetrates the fabric and is applied evenly. Allow to dry flat. Seal excess solution and store in a cool place. Fabric may be cut to size before or after applying the mordant.

Paper may either be coated using a sponge or soaked in the solution. Paper is usually weighted down while drying to prevent wrinkling. An overly concentrated alum solution can cause colours to flake off the paper. Mordanted fabric or paper does not need to be printed all at once, it may be stored out of direct light for several days.

### Step 2 - Marbleizing Bases

Sodium Alginate must be prepared the day before using. Mix 1 Tbsp. of Sodium Alginate per litre or quart of lukewarm water, stir very well or use a blender to mix and set side overnight to dissolve. Reduce with lukewarm water to the consistency of heavy cream before using. Sodium Alginate must be stored in the fridge, it may be reused until it either becomes too thin or grows mold.

Advanced Marbleizing Base M112 is ready to use in about an hour and a half. Dissolve 1 tablespoon of the powder per litre of warm water. Mix until all powder has been dispersed and then add now and NOT BEFORE 1/3 tsp of clear household ammonia for each litre of water. Stir until the solution has slightly thickened. Allow to stand in a sealed container for an hour and a half. It is now ready to use. Do not make batches of 8 litres or more in one container at one time.

Pour the base gently into a marbleizing tray to a minimum depth of 1 inch. Surplus base should be covered and stored. The base and the tray should both be at room temperature. Skim the base with a strip of newspaper to reduce surface tension and to remove dust and air bubbles. Hold the strip at a slight angle to the surface of the base bath and gently move the paper toward you, do not agitate the base. Repeat 6 times. It is helpful to know that if the base mixture is too thin the colours will sink. If it is too thick the colours do not spread out enough. Thicker bases are used for designs that require greater control.

### Step 3 - Application of the Colours

Begin with just two or three colours. Apply the paint drop by drop holding the applicator tip close to the size. The colour will spread into a round shape and then stop. The circle of colour is usually about 3" in diameter. Add other colours until the entire surface has been covered with paint. The more drops of colour, the more intense the colour yields as the later drops will not spread as much.

It is not unusual for a little colour to sink below the surface of the base during application. Once you notice that the colour has sunk, do not add any more colour. Pour a small amount out and thin with colourless extender. Continue to applying colour. If colour still sinks refer to "Trouble Shooting".

Certain colours may spread too quickly and wide. The main causes are the base being too thin. You can add a few drops of anti-spread to slow the colour spreading.

Take a stylus and begin to manipulate the colours to form patterns. Pull the colours until the desired design has been produced. Move the stylus tip on the surface of the paint. Wait until the colours stop moving before printing the fabric.

### Step 4 - Printing Fabric or Paper

Hold the fabric right side down with one hand at each end and let it droop in the center to form a U shape. Lower the drooped center to the surface of the base and then release the sides in a continuous smooth motion so no air is trapped underneath. Do not force the cloth or paper under the surface of the bath. Allow the paint to saturate a few seconds. Lift the fabric up by the far corners in a peeling motion and lay it face up on several pieces of newspaper or a plastic covered board.

Rinse gently in cool bucket of water to remove excess size and place on clean newspaper to dry, paper should be

placed on a smooth surface.

Sometimes there is enough colour left on the base to make a second print but it will be fainter than the first. Sometimes more colour can be added and manipulated to make another print.

Skim the surface of the size with a lean strip of newspaper to reuse size. Repeat until the size is clear of colour. You are ready to print again.

**Colourless Extender:** the extender may be applied to obtain clear areas in the pattern or it may be mixed with the colours to pastel them. It may also be applied to the surface of the base under the first colour to prevent rapid spreading, or it may be applied at the edges of the tray after the colour is laid to force the colour away from the tray sides.

#### Step 5 - Final Processing

After the fabric is dry, iron it on the back side for one minute at the hottest setting for the fabric. Wash in G&S TNA soap in lukewarm water. Rinse in cool water and dry.

## Trouble Shooting

If the colours appear grainy on the surface of the size either the base or the colours are too cold, both should be about 700F.

If colours sink into the size the colours might be too cold, the base might be too thin OR the colours might require a little thinning. To make the base thicker, mix separately a very thick solution then add it to the thin solution. Do not add powder directly to the thin solution since it contains the ammonia and the powder will not dissolve properly. To thin the colours, add a little colourless extender before applying to size.

If the colours are too pale on the paper or fabric, use a stronger mordant solution. Add up to three tablespoons of alum to one litre of water.