PRO™ CHEMICAL & DYE
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Marbling

Please read through the directions before starting.

FOR 3D OBJECTS, please refer to the directions titled "Marbling 3D Objects", available on our web site in the Download Center under the category titled Fabric Paint|Ink|Pigments

For cotton, silk or any fabric that is absorbent including cotton/polyester blends, 100% polyester or nylon. It is possible to marble on any surface that is capable of absorbing alum: paper, tennis shoes, eggs, unfinished wood, white painters gloves, etc. Experimentation is always necessary when you're Marbling.
Always do test samples before working on a large project. For additional information visit our website at ***www.prochemicalanddye.com***

Supplies

✓ Alum M101
✓ Methyl Cel M112
✓ Clear Household Ammonia *
* See Helpful Information
✓ Marbling Colors
✓ Marbling Surfactant (optional)
✓ Distilled Water (optional)
✓ White Distilled Vinegar (optional)
✓ PRO Dye Activator (or Soda Ash)
✓ Synthrapol OR Heavy Duty Laundry Detergent

Equipment

✓ waterproof tray that is 2" to 3" deep (5 to 7.5 cm) and a couple of inches longer and wider than the fabric to be marbled. White or light color is important so the Marbling Colors are visible while they are floating on the surface of the prepared Methyl Cel M112. A cardboard box that has been cut down to approximately 3" (7.5 cm) in height inside a white plastic garbage bag or a white photo tray will work well. A good size to begin with is 10"x10" (25 x 25 cm).
✓ newspapers (also, newspapers cut in quarter page size.)
✓ roll of paper towels
✓ clothes line & clothes pins (to hang fabric after marbling)
✓ stylus, teasing comb or toothpick
✓ 1 teaspoon measure
✓ buckets
✓ pair of rubber gloves
✓ clean sponge
✓ plastic drop cloth or newspapers to cover work space

Shake paints well, before using.

PART 1 Preparation

1. Scour the fabric by machine washing in HOT 140°F (60°C) water, or by hand in a pot on the stove with ½ tsp (2 gm) PRO Dye Activator or Soda Ash and ½ tsp (2.5 ml) Synthrapol per pound of fabric (454 gm, or 3 to 4 yards cotton muslin, or 8 yards 8mm China Silk, or 3 Medium T-shirts, or 1 sweatshirt), or use Heavy Duty laundry detergent. Rinse thoroughly and put into Alum Soak or let dry and Alum Soak at a later date.

2. Make the Alum Soak. Measure 1 gallon (4 liter) of 120°F (50°C) water into a 2 gallon bucket. Add 4 level Tbl (60 g) of Alum and stir until dissolved. While wearing rubber gloves, add the washed fabric (wet or dry) to the Alum Soak. Soak it for 10 to 15 minutes with intermittent stirring. Make sure the fabric is completely submerged and can move freely.

While wearing rubber gloves, remove the fabric and wring out excess soak solution, allowing alum soak to run back into the container for future use. *DO NOT RINSE!* Hang the fabric from a clothes line to dry and make sure it is not folded back on itself. *DO NOT* use a clothes dryer to dry Alum soaked fabric. Press with a COOL iron to remove any creases, if necessary. *DO NOT* press with a hot iron. After fabric is prepared with alum and dried, cut fabric to fit the inside dimensions of the tray.

Discard Alum Soak after 2 to 3 months or if Alum has crystallized around the edges of the soaking bucket. See Helpful information #8 at the end of this direction sheet. Do not store Alum Soaked cotton fabric for longer than 2 to 3 weeks before marbling, as the alum disintegrates cotton fibers.

3. Make the Methyl Cel M112. Measure 1 gallon (4 liters) of room temperature water 75° to 95°F (24° to 35°C) water into a 1 gallon (4 liter) bucket. Slowly stir in 3½ Tbl (25 gm) of Methyl Cel M112 powder. Continue stirring and add 1 tsp (5 ml) of CLEAR household Ammonia.

Keep stirring for 1 to 2 minutes or until the Methyl Cel solution begins to look clear. Then stir intermittently for 30 minutes. Methyl Cel M112 base is ready for Marbling after 30 minutes. For best results let sit 12 hours or overnight. Prepared Methyl Cel M112 can be stored for 3 to 4 months at room temperature without loss of thickness.

If you have very alkaline water, we've found it helpful to add 1 tsp (5 ml) of White Distilled Vinegar to each gallon (4 liters) of prepared Methyl Cel M112. This brings the marbling base back to a neutral pH and seems to help the marbling colors float better.

PART 2: Marbling

1. Prepare the work space. Cover your work space: table, rinse area and under the clothesline with newspaper or a drop cloth. Position your marbling tray near the edge of the table with a garbage can or bag under it to catch excess drips. Fill the marbling tray with 2" to 3" (5 to 7.5 cm) of prepared Methyl Cel M112. Set up a rinse area with a 5 gallon (20 liter) bucket of room temperature water. Hang up the clothesline and have clothes pins handy.

> *Before marbling store prepared Methyl Cel M112 and Marbling Colors in the same room, as they should be the same temperature, ideally between 60° to 80°F (16° to 27°C).*

2. Skim the surface of the Methyl Cel M112 by dragging one of the strips of newspaper across the surface of the Methyl Cel M112 and discard the paper. This evens out the surface tension, clears the bubbles and removes any Marbling Color left over from the previous print. Do not worry about the few bubbles or Marbling Color that will remain along the edges of the marbling tray as they will not disrupt the pattern.

3. Shake the Marbling Colors well before each use and periodically during the Marbling session. With a push pin poke a very fine hole in the nozzle of the applicator bottle. It is important to test the Marbling Colors before beginning to Marble. To do this, hold the Marbling Color very close to the Methyl Cel surface and place one drop of color on the surface. The Marbling Color should float and spread out into a circle anywhere from one half inch to two inches (1.5 to 5 cm). Repeat this process with each color. Test them together to make sure that they all float when sharing the same surface. If the Marbling Color does not spread as desired see Helpful Information #2 at the end of the directions.

4. Drop the color. Once all the colors have been tested, begin Marbling by placing drops of your first color on the Methyl Cel. Place as many drops as desired. Move on to the second color, the third, until the surface is covered. Drops may be placed side by side or on top of the previous color so that concentric circles are made. The more drops of color applied, the deeper the color.

5. Make the pattern. Manipulate the Marbling Colors on the surface with a stylus, teasing comb or toothpick into the pattern desired. Make free form or traditional patterns.

6. Lay the fabric on the Methyl Cel, by holding it in both hands by diagonal corners. Make a gentle fold in the center of the fabric and allow it to drop first so that the center makes contact first. Then allow the fabric to drop steadily out to the edges, in a smooth fluid motion.

7. Remove the fabric and rinse lightly by dipping into the 5 gallon bucket filled with room temperature water. Do not rub the fabric. Several dips may be required to remove excess Methyl Cel M112. Very gently squeeze excess water from the fabric and hang on a clothesline to dry.

8. Dry fabric. After marbled fabric is air dried, allow to cure for seven to ten days before washing. This will insure proper adherence of Marbling Color. Then fabric may be washed with lukewarm water, gentle agitation and mild soap. Rinse in room temperature water 75^{o}to 95^{o}F (24^{o}to 35^{o}C) and dry.

9. Clean the surface of the Methyl Cel. Drag one of the strips of newspaper across the surface of the Methyl Cel M112 and discard the paper, just like you did in Step 2. <u>As you use continue using your Methyl Cel, there will be color under the surface that gradually builds up. This will not alter your color on the marbled eggs. Your eggs or wooden objects only pick up the colors that are floating on the surface.</u>

MARBLING PAPER

Paper is very easy to marble. Just follow the same procedure as for fabric, with only the two differences listed below.

1. Alum Soak for paper

4 level Tbl (60 g) Alum
2 quarts (2 liters) HOT 120°F (50°C) water

Stir until dissolved. While wearing rubber gloves, use a clean sponge and apply the alum solution to one side of the paper and hang it to dry. You can also pour the alum soak into a shallow tray that is large enough to hold the paper and lay a sheet of paper on the surface. Make sure the entire sheet is dampened. Lift the paper off of the surface and hang to dry. Mark the untreated side so you will know what side to marble. Stack the sheets facing the same direction and place a heavy book on top to press the sheets as flat as possible. Paper must be dry to pick up the marbling colors.

2. Rinse

After Marbling, carefully lift the wet print by the corners and lay the paper patterned side up on a rinse board that is larger than your paper. Rinse it by gently pouring cool water over the patterned surface. This will remove any residue of Methyl Cel M112. Hang marbled paper from a clothes line with clothes pins to dry or lay flat on a smooth surface.

Helpful Information to know

The marbling components are non-toxic and water based. Methyl Cel M112 base is bio-degradable and is safe to dispose of down the drain or into any septic or city disposal system. All of these products are environmentally safe and user friendly. All Marbling colors may be intermixed to blend a full rainbow of colors.

* AMMONIA Use only a clear household ammonia that contains a clear ammonia or ammonium hydroxide solution. Some ingredients that are added to ammonia are alcohols, non-ionic surfactants, perfumes, detergents or color. Any of these ingredients can disrupt the surface tension and will not allow the marbling colors to float. Old ammonia will not allow the Methyl Cel M112 to set up, resulting in a thickened layer of Methyl Cel M112 forming at the bottom of the solution.

✔ Keep work area and tools clean. DO NOT clean equipment with soap; use only water and a stiff brush.

✔ If you have hard water try using Distilled water to make the Methyl Cel base. Water impurities can disrupt surface tension so that colors will not float.

Sinking Colors

1. Skim Methyl Cel M112 surface just before laying down drops of color.

2. Marbling Color needs additions of Marbling Surfactant. Add Marbling Surfactant, 3 or 4 drops at a time directly into the actual Marbling Color, and shake. Test again and continue adding the Marbling Surfactant until the color floats and spreads out. Make sure Methyl Cel M112 is skimmed before each test drop and test between additions of Marbling Surfactant. The more Marbling Surfactant that is added to the Marbling Color, the better it will float and the wider it will spread and consequently the lighter the color. Be careful not to add too much Marbling Surfactant as it can not be removed after it is

added. You can also try Synthrapol, dishwashing soap or rubbing alcohol as the surfactant, but use one drop at a time.

3. Methyl Cel M112 is too thick. Thin with tap or distilled water.

Fast spreading Colors

4. Methyl Cel M112 may be too thin. Make another thicker batch of Methyl Cel M112 thicker by mixing 5 Tbl (35 g) Methyl Cel M112 powder per gallon of water.

5. Drop Colorless Extender onto the tray containing the Methyl Cel M112 before adding the Marbling Colors. This will change the surface tension and slow down the Marbling Colors.

Grainy Colors

6. Shake Marbling Colors well before each use. Marbling Colors are tiny particles of colors that settle, so they need to be shaken well before being used.

Jagged edged Colors

7. Skim surface and drop Marbling Colors again.

Alum solution has crystals around the edges of the bucket

8. Heat until Alum crystals re-dissolve or discard and make new solution.

Colors wash off in the rinse bucket

9. Fabric had not been washed adequately before Alum was applied, inhibiting penetration of alum. Wash fabric in HOT water with detergent.

10. Alum soak solution is too weak: colors will not bond well to the surface and will be pale, uneven and or streaked.

11. Alum soak solution is too strong: Colors will adhere to alum and will flake off in the rinse.

Fabric has white fold marks in the marbled areas

12. Fabric did not uniformly absorb alum. Soak less fabric in Alum solution at a time and stir intermittently.

13. Fabric was not laid on the M112 surface with a fluid movement.

Fabric is tender and ripping after marbling

14. Alum soaked fabric was put in the clothes dryer or ironed. Line dry fabric after the Alum soak. If you need to iron the fabric treated with Alum, make sure your iron is on the lowest setting.