MAKING YOUR OWN WATER-SOLVED PAINT

How to prepare and grind pigments
to make tempera, watercolor, and fresco paint

Natural Pigments

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INTRODUCTION

WHY GRIND pigments into paint? Why not simply mix them together with a palette knife? There are two basic reasons for doing so: To break down agglomerates of pigment particles and to evenly disperse pigments into the paint. Most artists are aware of the need to smoothly mix pigment with a binding medium, but few are aware of how breaking agglomerations of pigment particles can also improve the saturation of the paint color. Fewer still know about the possibilities that grinding pigments afford for altering the visual appearance of pigment in paint.

Dispersing pigment into a paint binder with a muller on a flat surface helps to breakdown agglomerations of pigment particles that have clumped together due to moisture and other weak binding forces. This helps to not only make the final paint smoother, but improves on the opacity and color of the paint. However, it is a common mistake to think that the force of grinding actually grinds pigment particles into smaller sizes. Greater mechanical force must be applied to do so. One way to do this is with a mortar and pestle. A pestle directs the entire force to a single point whereas a muller applies the spreads the same force across its flat-bottomed surface. In addition, the pressure applied to the concave surface inside a mortar creates greater forces to break the particles into smaller ones. The action of grinding in a mortar can reduce the particle size of the pigment and, in some cases, substantially alter its color.

Not all pigments improve in color and appearance by being ground to a very fine powder and then mixed with a binding medium. For example, the natural mineral malachite loses its color saturation the finer it is ground.

On the other hand, some mineral pigments, like cinnabar and lapis lazuli improve their chromacity when grinding to the finest possible particle sizes.[1]

Many synthetic pigments available to artists today are already prepared in extremely fine grades, since they are made from precipitated chemical compounds. Whereas this makes for very uniform and small pigment particles that offer some advantages in covering power and tinting strength, it also eliminates the interesting textures and subtle chromacity found in natural pigments. At the very least, it does not allow the artist to control the pigment to its best potential in paint. Grinding pigments gives you the possibility to overcome this limitation.

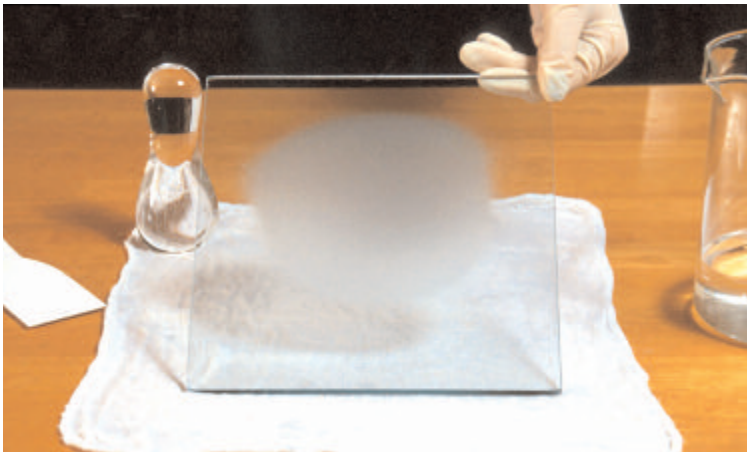
Rublev Colours dry powdered pigments are made by Natural Pigments (www.naturalpigments.com) to careful specifications that do not destroy the pigments best qualities and allow the artist to refine them for his or her own use through levigation (washing) or grinding. Some Rublev pigments are raw materials that may require further processing by the artist to achieve certain desired effects. Rublev pigments can be used as they come out of the jar or you may grind them to smaller particle sizes and separate into different grades for special visual effects. As you become more aware of these possibilities, you may want to experiment, paying close attention to the way the pigments look when mixed with your favorite medium, whether it is oil, egg, acrylic emulsion, casein, lime plaster or gum Arabic.

> CAUTION: Always wear a NIOSH-approved dust mask while grinding or working with any dry powdered pigment to avoid inhaling the dust. Wear protective clothing and gloves while working with pigments.

1 Thompson, Daniel V. *The Materials and Techniques of Medieval Painting*. New York: Dover Publications, 1956. Page 86.

STEP 4: Place the muller onto the small pile of silicon carbide paste and begin moving it in circular motions extending to the edges of the surface. The corners of the grinding surface do not need to be roughened. Continue to grind with this motion for 5 to 10 minutes.

STEP 5: When you have completed grinding the surface, visually inspect it to see if it has been roughened by holding it up to a light at an angle. If the surface was smooth and shiny to begin with, you should notice a matte appearance where you have been grinding.



NOTE: It will be necessary to remove accumulated silicon carbide paste from the sides of the muller using a scraper. Periodically scrape the paste into a small heap to the center of the grinding surface to continue grinding.

To avoid contaminating your pigments, clean your tools well by washing with soap and water.

GRINDING AND DISPERSING PIGMENT

NOW that the grinding surface has been prepared, you can begin to disperse pigments and make your own paint. Lets grind some pigment intended for a water-solved vehicle, such as egg (tempera), animal glue (distemper) lime (fresco) or gum Arabic (watercolors). Disperse pigments only in distilled water. Tap water may contain a large amount of minerals and perhaps bacteria that can contaminate your paint.

STEP 1: Place a small amount of pigment in a heap at the center of the prepared surface. Start by working with about several tablespoons of pigment.

STEP 2: Add a small amount of water to the heap of dry pigment a few drops at a time. Do not add too much water at the start.