

# Carriage House Paper

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## DIRECTIONS FOR THE USE OF AARDVARK LUSTER PIGMENTS

### THE NATURE OF LUSTER OR PEARLESCENT PIGMENTS

These colorants are finely ground pigment powders. They are combinations of mica, titanium dioxide and/or various iron oxides. The metallic colors listed produce metallic shades and effects **without** the use of actual metal flakes. Therefore, the pigments will not tarnish or oxidize, and will not degrade the finished papers or paper art. These pigments provide unique lustrous effects, ranging from soft, satin sheen to sparkling brilliance, and rich metallic lusters.

The individual mica particle in pearlescent pigments is generally a very thin, disc-shaped crystal. The crystals are readily oriented into parallel layers because of their shape. Being transparent, each crystal reflects only part of the incident light reaching it and transmits the remainder to crystals below. It is the simultaneous reflection of light from these many microscopic layers that produces the particular kind of shimmering luster that is called "pearlescence", or color by light interference.

Luster pigments are easy to use and safe. The same pigments are used in the cosmetic industry! There are no recognized health hazards other than creating a nuisance dust. If you are sensitive to dust exposure, we suggest wearing an approved dust respirator until the pigment is made into a water dispersion.

### GENERAL DIRECTIONS FOR USE WITH PAPER PULP

There are basically two ways of using pulp that has been colored with these pigments. One way is to use the entire mass of colored pulp to form the paper. The second way involves using the colored pulp only as a surface coating, applied onto a substrate of newly formed sheets of paper.

In the first method, where the particles of pigment are present throughout the sheet, the reflective effect of the pigment is most pronounced if thin sheets of paper are made. Since these pigments rely on light's reflections to give off their shimmering qualities, the mica particles that are below the surface of the paper become ineffective. Therefore, for satisfactory lustrous effects, a great deal of pigment may be needed in order to increase the reflecting layers.

In the second method, the pigments are mixed with a small quantity of pulp, which can then be applied over a base sheet of paper. The pigmented pulp may be put into a squeeze bottle and squirted or dripped on the sheet; it can be spooned onto the sheet; or it may be put into a papermaking vat for use in laminating a thin top sheet over the substrate. This method generally produces much more sparkle and luster than the first one, since the pigment is concentrated into the top surface of the paper, creating a layer of reflective brilliance.

A pigment retention agent is used in all of the procedures described below. If the directions are followed properly, the dry sheets of paper should be non-bleeding, with practically no rub-off of the pigment.

### SPECIFIC INSTRUCTIONS

#### 1. PEARLESCENT WHITE AND SUPERSPARKLE

These two pigments are similar in providing good overall luster. However, the pearlescent white, with its smaller sized particles (5-40 microns) produces a lustrous sheen; while the supersparkle, with larger particles (20-150 microns), produces a more sparkling and glittering effect. Both of them combine well with the metallic and iridescent pigments. They are also quite effective when combined with colored pulp. For instance, pulp colored first with Armadillo Pigment Blue-15, then with pearlescent white, produces a lustrous sky blue. Because the supersparkle and the pearlescent white contain titanium dioxide, a whitener, they will lighten whatever color to which they are added.

#### For sheet formation:

-1/2 lb. dry pulp (approx. 2/3 sheet of Manila hemp or 1 sheet of cotton linters).  
Hydrate or beat in Hollander beater.  
-Add 3 TBLS. retention agent to pulp, and mix approx. 5 minutes  
-Add 4 TBLS.(2 oz.) of pigment to a cup of water and mix thoroughly until powder is dispersed. Add to pulp.

#### For surface coatings:

-Start with a watery quart of pulp (equivalent to 10 grams of dry pulp or a 5" x 5" square of abaca; or 9" x 4" piece of cotton linters hydrated in a blender)  
-Stir 1 TBLS. retention agent into pulp  
-Stir 1/2 TBLS. pigment into a cup of water. Add to pulp.

## 2. GOLD, BRONZE, COPPER, SILVER AND RUSSET

These metallic-looking pigments all contain a certain amount of iron oxide, so they have better coverage properties than the pearlescents. They can be combined with each other, or with pearlescent white or supersparkle to produce intermediate shades. For instance, bronze added to copper will produce red tones; gold with supersparkle will produce gold sparkle; while silver added to pearlescent white will produce a pewter shade.

### For sheet formation:

1/2 lb. dry pulp; hydrated or beaten  
Stir 2 TBLS. retention agent into pulp  
Stir 2 TBLS. metallic pigment into a cup of water. Add to pulp

### For surface coatings:

1 qt. pulp  
Stir 1 TBLS. retention agent into pulp  
Stir 1/2 TBLS. metallic pigment into cup of water. Add to pulp

## 3. IRIDESCENT: RED, ORANGE, BLUE, GREEN, VIOLET

These pigments provide a high degree of color play by light interference. Each pigment creates a twin color, one by reflection and the other by transmission. For example, depending upon the way the light is hitting the iridescent violet, the viewer perceives either pale yellow-green, or a shimmering violet. Many variations are possible when combining the iridescents with the regular Aardvark pigments. It should be noted though that mixing iridescent pigments with each other does not result in increased color play, but leads to a marked reduction in color intensity.

### For sheet formation:

1/2 lb. dry pulp; hydrated or beaten  
Stir 3 TBLS. retention agent into pulp  
Stir 4 TBLS. iridescent pigment into cup of water. Add to pulp

### For surface coatings:

1 qt. pulp  
Stir 1 TBLS. retention agent into pulp  
Stir 1/2 TBLS. iridescent pigment into cup of water. Add to pulp.

Results are much more effective with this process of surface coating than when using it for sheet formation. A particularly striking effect of the iridescent pigments is achieved by laminating a thin top sheet to a colored substrate. For instance, try laminating a thin sheet of mitsumata colored with iridescent blue onto a sheet of paper colored with Aardvark quindio red.

## 4. USE OF COAGULANT

When a synthetic coagulant is mixed with pulp that already contains either Carriage House retention agent or sizing, the pulp will flocculate, that is, coagulate and form large clumps. This phenomenon can be used to create some very special effects, and is especially effective with luster pigments. The flocculated pulp can be left in its clumpy stage, or the clumps made smaller by dispersing the pulp in more water, or by using a blender to separate the clumped fiber further. In any case, the flocculant keeps the pulped fibers distinct from other pulps, and maintains the integrity of individually colored pulps in the papermaking vat.

For example, pour into a mixing bucket, 1 qt. of watery mitsumata or abaca pulp that has been colored with Aardvark pigment violet 23 and 1/2 TBLS. of iridescent violet (using retention agent, according to the previous instructions). Add 1 TBLS. of the viscous coagulant, and stir vigorously. Add more coagulant if necessary until the fibers separate themselves from the water into small clumps. Remove any especially large clumps. Pour the coagulated pulp into a vat of water. Fill a second vat with pulp colored with Aardvark Pigment black-7. Then:

1. First layer - make a jet black sheet
2. Second layer - dip an edge of the same mould, with the black sheet still on it, into the violet vat; lift up and tilt mould so that the black sheet is coated with a thin layer of small clumps of fibrous iridescent violet.
3. Couch sheet onto felt.

For more information on this technique, refer to the article, "Decorative Papermaking; Special Effects Using Luster Pigments or You Can Do What They Tell You Not To", by Donna Koretsky, published in *Gathering of Papermakers*, Carriage House Press, 1988.

## 5. OTHER APPLICATIONS

These luster pigments are not only effective when combined with paper pulp. They may also be mixed with watercolor, acrylic medium or ink bases, for use as a paint. It may be interesting to note that these same pigments are commonly used in car paint, cosmetics, and the plastics industry.

## 6. PRECAUTIONS

Handle all pigments and other chemicals with care at all times. Observe the precautions on the labels: Do not ingest or inhale. All colorants and other materials described have been personally tested by the Carriage House Studio. But the Carriage House Studio or Aardvark Colors does not assume responsibility for unsatisfactory or harmful results incurred by users of these products and methods.