



## Carriage House Paper

79 Guernsey Street  
Brooklyn, New York 11222 USA

Orders: 800-669-8781  
Tel/fax: 718-599-PULP

Technical information: 617-232-1636

---

## DIRECTIONS FOR USE OF CARRIAGE HOUSE RETENTION AGENT

Carriage House Retention Agent is a cationic poly(amine) specifically manufactured for the retention of pigments, dyes and other fillers in paper pulp.

The following brief notes have been abstracted from the book, *Color for the Hand Papermaker*, by Elaine Koretsky, published by Carriage House Press, 1983.

Please note that all pigments, dyes, and other chemicals should be handled with care. For more information as to the proper precautions in working with art materials, contact: Center for Occupational Hazards, 7 Beekman St., New York, NY 10038. The Center has several detailed publications on this important subject.

www

The directions given are based on the coloring of 450 grams (1 lb.) of dry pulp. Adjustments may have to be made for various kinds of pulps, and for differences among various kinds of pigments and dyes.

The first step is to beat or hydrate the pulp in 10 liters (2.5 gal.) of water.

### 1. Application of pigments:

Add 30 grams (2 tbs.) retention agent\* to the pulp, and beat or mix at least 10 minutes. Add 30 grams (2 tbs.) of a water-dispersed pigment\* to the pulp and beat or mix at least 10 minutes. Drain the pulp, and rinse if desired. If dry, powdered pigment is used, make a water dispersion of the pigment first, before adding to the pulp, by pasting it with water or a few drops of alcohol, then adding more water and dispersing the pigment as well as possible. Be aware that for deeper colors, more pigment has to be used, with a correspondingly greater amount of retention agent; for tinting, less. With certain pigments, to obtain maximum depth of color, up to 75 grams (5 tbs.) of retention agent may be necessary. However, be aware that there is a saturation point, at which the pulp will simply not hold any more pigment satisfactorily.

### 2. Application of dyes, either direct dyes or fiber reactive (e.g., Procion) dyes:

Follow the directions given on the dye packages for use with cotton cloth, adapting them to pulp. Remember to hydrate or beat the dry pulp first, before application of the dye. When the dye and other substances (i.e., salt and/or soda ash) have been used, and the coloring procedure is finished, add 20 grams (4 tsps.) retention agent\* to the pulp and mix or beat for 10 minutes. Then drain and rinse the pulp. The retention agent will definitely minimize rinsing in the case of direct dyes, and will help somewhat in the case of fiber reactive dyes.

\* the amount of retention agent or pigment should be diluted in at least a half liter (2 cups) water, so that it will be better dispersed in the pulp.