



CCI Notes

11/4

Wheat Starch Paste

Introduction

Many museums use commercially available adhesives to repair and hinge paper artifacts. Unfortunately, many of these adhesives are chemically unstable and, in time, can disfigure the artifacts with which they are in contact.

Wheat starch paste is an adhesive recommended for use with paper artifacts, whether for hinging artifacts to mats, for making repairs, or for reattaching leaves in books.

Characteristics of Wheat Starch Paste

Wheat starch makes a smooth adhesive that remains tacky, even when diluted to a thin consistency. Once dry, it produces a strong, reliable bond.

Wheat starch paste has been used for centuries in the Orient, and has proved to be a suitable adhesive for direct, long-term application to paper.

Ingredients of Wheat Starch Paste

AYTEX-P is an unmodified, highly purified wheat starch. It contains approximately 87% to 91% starch, 9% to 13% moisture, and less than 1% fibre, protein, and mineral matter from the wheat germ. Other sources of purified, food-grade wheat starch are available and may be more accessible.

Use distilled water to avoid introducing contaminants into the paste.

Equipment and Supplies

- distilled water
- wheat starch
- double boiler (glass or stainless steel) or saucepan (domestic type, 2 to 3 litre capacity)
- pyrex graduated glass beaker (500 ml or 600 ml capacity)
- plastic or metal spoon
- heat source (bench-top single burner or domestic stove)
- storage container (glass, plastic, or ceramic, with a non-metallic lid)
- sieve or strainer (fine, non-metallic mesh)
- scales or balance (optional)

Preparing the Wheat Starch

Weigh out 30 grams of starch powder on the scales. If scales are not available, you may estimate that 30 grams will measure to the line marking 50 ml on a graduated beaker.

Put the 30 grams of starch powder into a glass or plastic container.

Using a graduated beaker, measure 300 ml of distilled water. Gradually pour 50 ml of this water into the container holding the starch powder, stirring continuously until all the lumps have dissolved and the mixture is smooth. Cover the mixture and let stand.

Cooking the Wheat Starch

Paste can be prepared in a double boiler or by using the following procedure.

Pour the remaining 250 ml of water into a beaker. Set this beaker in a pan containing enough water so that the beaker is surrounded but does not float or tip. Allow the water in the beaker to come to a boil. Stir the starch/water mixture, and pour it into the boiling water in the beaker, approximately 25 ml at a time, stirring continuously as it thickens. When all the starch/water mixture has been added, continue heating and stirring for another five to ten minutes. Remove the beaker containing the paste, and allow it to cool.

Thinning the Paste

When the paste reaches room temperature, it will have thickened appreciably. If the paste is too thick for a particular procedure, thin it by adding distilled water and stirring vigorously. Thinning at this point usually creates lumps, which can be removed by forcing the paste through a sieve. Subsequent dilutions can be achieved simply by adding water and stirring; lumps should not recur.

Storage

Store paste in a container made of glass, ceramic, or plastic that has a non-metallic lid and that has been sterilized with boiling water. At room temperature, the paste will last for at least three days; if refrigerated, it will last for at least seven days. Stored paste must be put through a sieve and thinned before it is used. Paste should be discarded as soon as it separates or sours.

Suppliers

AYTEX-P wheat starch (minimum order of 1 pound):

TALAS (Technical
Library Services)
213 West 35th Street
New York, NY
10001 U.S.A.
(212) 736-7744

Wheat starch:

University Products of Canada
Division of BFB Sales
6535 Mill Creek Drive, Unit # 8
Mississauga, ON
L5N 2M2
Toll-free: 1-800-667-2632
Tel.: (416) 858-7888
FAX: (416) 858-8586

also: supermarkets, health food stores

Saucepan, spoon, extra containers, sieve, hot plate:

kitchen supply stores, hardware stores, department stores

Pyrex graduated beaker:

scientific hardware suppliers, surgical suppliers, drug stores, kitchen supply stores

Distilled water:

drug stores, supermarkets

Scales:

scientific suppliers, kitchen or bathroom stores

References

- Clapp, Anne F. *Curatorial Care of Works of Art on Paper*. New York: Nick Lyons Books, c. 1987.
- Ellis, Margaret Holben. *The Care of Prints and Drawings*. Nashville, Tennessee: The American Association for State and Local History, 1987.
- Holm, Suzanne-Marie. *Le montage et l'encadrement des oeuvres sur papier*. Québec, Ministère des Affaires culturelles, 1986.
- Smith, Merrily A. and Margaret R. Brown. *Matting and Hinging of Works of Art on Paper*. Washington: National Program Office, Library of Congress, 1981.

Copies are also available in French.

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