



# SAVING YOUR Treasures

*A Website about what you can do to protect and preserve the things of importance in your life*



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### GLOSSARY OF TERMS

**Acid-free:** "In principle, papers which contain no free acid and have a pH value of 7.0 or greater. In practice, papermakers consider a paper having a pH value of 6.0 or greater to be acid free. Such papers may be produced from cotton fibers, rags, esparto, jute, chemical wood pulps, or virtually any other fiber, with special precautions being taken during manufacture to eliminate any active acid that might be present in the paper pulp. However free of acid the paper may be immediately after manufacture, the presence of residual chlorine from bleaching operations, aluminum sulfate (alum) from sizing, or sulfur dioxide in the atmosphere, may lead to the formation of hydrochloric or sulfuric acid unless the paper has been buffered with a substance capable of neutralizing acids."

Electronic edition of Roberts, Matt, and Etherington, Don, **Bookbinding and the conservation of books: a dictionary of descriptive terminology**. 1982, Library of Congress, Z266.7.R62 686.3'03 810607974 ISBN O-84440-0366-O AACR2, prepared by Walter Henry, Preservation Department, Stanford University Libraries, Spring, 1994.

**Acidic:** A substance is labeled "acidic" when it measures lower than a 7 on the pH scale. The lower the number the more "acidic" the substance is. The pH scale is logarithmic which means that each unit along the scale is logarithmically not linearly, larger or smaller than the number next to it. So, changes in pH from one number to the next are very significant.

**Alkaline:** Also known as a "base", an alkaline substance measures higher than a 7 on the pH scale. The higher the number the more "alkaline" the substance is. The pH scale is logarithmic which means that each unit along the scale is logarithmically not linearly, larger or smaller than the number next to it. So, changes in pH from one number to the next are very significant.

**Ambrotype:** An early photograph in which the image is made by underexposing an image onto a wet collodion coated glass plate. The image was made to appear positive by placing it over a dark background.

**Archival:** This term is used loosely to describe a material that has been made for long-term stability. There is no official definition of the term, and it can be used to mean anything from "neutral at the time of manufacture" to "acid-free, lignin-free, sulfur-free, optical brightener-free".

**Bone china:** Bone china was developed in England in the 18<sup>th</sup> century to imitate and compete with Chinese porcelain. It combines animal bone ash with hard paste porcelain and fired at 1260°C.

**Buffered:** Materials can be buffered by incorporating an alkaline additive, like calcium carbonate, into their structure during manufacture. The alkaline additive, sometimes called an alkaline reserve, is designed to neutralize any acids that are formed by the base material during aging. . Buffered products should not be used around protein-based materials like silk, wool, some photographs, leather, parchment, or vellum.

**Calcium carbonate:** An inert solid material formed when slaked lime (calcium hydroxide) combines with carbon dioxide in the air. Calcium carbonate is used in conservation to polish silver. It is also used as a buffering agent.

**Cellulose:** Cellulose is the main complex carbohydrate polymer found in plant fibers. It is used in the manufacture of fibrous products such as paper, textiles, and explosives.

**Compo:** Composition or “compo” is used to decorate wooden frames. Compo can be made of a variety of mixtures such as wood pulp and adhesive; calcium carbonate and adhesive; plaster; or paper pulp and adhesive. It is usually cast or pressed into molds to form elaborate elements and then glued to the wood frame where it is varnished, painted or gilded.

**Conservator:** A conservator is an individual who, through formal training and practical experience cares for historic and artistic works. They provide direction and advice on the preventive care of collections including display, environmental control, storage, handling, packing, and shipping. Conservators also are specialists in the treatment of objects and the identification of materials and techniques that are used to make objects and works of art. See <http://aic.stanford.edu/about/coredocs/definingcon.pdf> .

**Conservation:** Conservation is the profession dedicated to the preservation of historic and artistic objects. Conservation aims to preserve all aspects of the object's original materials through documentation, treatment, and preventive care and through research and education.

**Conservation Assessment:** The Conservation Assessment is a tool designed to help institutions learn about their current ability to preserve their collections. Practices are measured against current professional best practice standards. The Conservation Assessment provides a report on the policies, practices, and conditions within an institution and focuses on the following areas: general institution overview, staffing, building and facilities, environmental control, collection and collection policies, exhibition, storage, security and safety, and emergency preparedness. The IMLS Conservation Assessment Technical Assistance Program, managed by Heritage Preservation, Inc. offers this technical assistance on a first come first served basis. Visit their website at <http://www.heritagepreservation.org/CAP/index.html> .

**Crazing:** Minute cracks in the surface of glaze, glass, or painted surfaces.

**Crizzle:** Fine surface cracks in ceramic glazes (similar to crazing) and glass.

**Daguerreotype:** An early type of photograph in which the image is exposed directly onto a copper plate coated with a highly polished silver surface. The copper plate is made sensitive to light using iodine fumes and is exposed in a camera. Unlike later photographic processes, the daguerreotype is a direct positive-image process with no negative original.

**Data logger:** Electronic or battery-powered instruments that record environmental conditions such as temperature, relative humidity, and light levels over periods of time. Data loggers are connected to a computer terminal and proprietary software is used to download the recorded data and produce needed reports.

**Deionized water:** Water that has been treated to remove ions, microorganisms, and most other impurities.

**Distilled water:** Water that has been treated to remove all impurities such as solid materials, inorganic, and organic materials.

**Earthenware:** Earthenware is a porous ceramic body that is made of a mixture of materials including potash, feldspar, sand, and clay. It is very porous due to its low biscuit firing (first fire) at temperature around 1000°C. Due to its high porosity, earthenware is water permeable must be glazed to keep it watertight. Common forms of earthenware include slipware, creamware, terracotta, and delftware.

**Feldspar:** Feldspar is the name of a group of rock-forming crystals. It is usually used as an ingredient for earthenware and other ceramic bodies often with sand and clay.

**Ferule:** A ferule is the metal or plastic casing on a brush between the handle and the brush hairs. It holds the bristle portion to the handle.

**Fillet:** In framing, a fillet is a thin, inner frame placed between the paper and the glass to prevent contact between the two.

**Friable:** Easily breakable; crumbles; reduced to powder; occurs with organic and inorganic substances (paper, leather, glass, textiles, ceramics, etc.)

**Foot-candle:** A foot-candle is a non-metric unit of measurement used to describe light intensity. It is defined as the amount of light received by 1 square foot of surface placed a distance of 1 foot from the light source.

**Foxing:** Small, irregular yellow-brown spots/stains found on paper objects and works of art on paper. Conservators believe these marks are caused by mold or metal impurities in the paper.

**Fugitive colors:** Dyes and colorants that are unstable and easily dissolved by water or faded by light or other atmospheric exposure.

**Glassine paper:** a thin transparent or semitransparent paper often times used in wrapping, packing, and interleaving photographs, illustrations, books, and fine works of art. Acid-free glassine paper is commonly used in the storage of photographs and negative films. The use of acid-free glassine paper is highly discouraged in the storage of photographs for it may become embedded in the photographic emulsions on the photographs, especially in humid conditions.

**Gilt:** A coating of gold applied to a substrate through a variety of methods including electrolytic deposition, application of leaf, application of paint, and burnishing.

**HEPA filter:** High Efficiency Particulate Air filter. The filters are designed to remove 99.97% of all air pollutants that measure 0.3 micron or larger at a specified flow rate of air. A HEPA filter is essential for use in the cleaning of mold, asbestos, pesticide, lead, insect eggs, soot, or any other contaminants from heirlooms and museum objects.

**Heritage Health Index:** The Heritage Health Index is the first comprehensive survey ever conducted of the condition and preservation needs of our nation's collections. The project was conceived and implemented by the non profit organization Heritage Preservation, Inc. in partnership with the federal Institute for Museum and Library Services and other funders. To learn more about the survey and its findings visit <http://www.heritagepreservation.org/HHI/index.html>.

**Hygrometer:** An instrument that is used to measure relative humidity in the air. It contains a moisture absorbing and releasing element that dimensionally changes according to humidity changes. The dimension changes can be recorded.

**Hygrothermograph:** An instrument that is used to measure relative humidity in the air. It records temperature and relative humidity levels on a chart for a set period of time (one day, one week, one month, or two months).

**Inert:** An inert substance does not readily react; is chemically stable.

**Infill:** To replace missing areas of an object with similar material for support. The related noun is "fill" which describes the material used to fill in a loss.

**Infrared:** Infrared is a form of electromagnetic radiation. It is adjacent to the visible light spectrum, just beyond the longer wavelength red region. The energy of infrared radiation can break the chemical bonds in materials leading to the degradation of artifacts and works of art. It is detected by humans as heat.

**Inpainting:** To add colored or textured media to fills, repairs, or areas of loss in order to create a sense of continuity in a work of art or artifact.

**Japanese Haké brushes:** A wide brush used in Japan to apply damp sheets of paper on to a drying surface. The bristles are made of horse or other animal hair or plant fibers and are very absorbent and soft.

**Lignin:** A component of the cell walls of plants. It is unstable, light sensitive, and as it ages, breaks down into acid components. It contributes to the degradation of paper products, and it can be largely removed during the paper making process.

**Lux:** A lux is the international standard unit of measurement to describe light exposure. It is defined as the amount of visible light per square meter illuminated on a surface. One lux = 0.093 foot-candles.

**Marvelseal®:** Marvelseal® is a material made of layers of aluminized polyethylene and polypropylene film. It is resistant to the transmission of water, water vapor, and other atmospheric gasses making it suitable for humidity controlled shipping or in the fabrication of storage bags. Marvelseal® is ideal for lining shipping crates, exhibit cases, and shelving to reduce the amount of off-gassing from exposed wood surfaces. It is available from most conservation suppliers.

**Microclimate:** A microclimate is a smaller, self-contained environment within a larger environment. A microclimate can constitute an advantageous change from the ambient environment (buffered RH changes) or a detrimental change (condensation in an enclosed space).

**Microcrystalline paste wax:** A paste wax made with microcrystalline waxes of differing melting points, a solvent (usually Mineral Spirits), and other additives. Paste wax recipes are customized for the intended use. For example a paste wax recipe for an outdoor sculpture in Alaska will have a different formulation than a paste wax recipe for use in Las Vegas.

**Microcrystalline wax:** Microcrystalline wax is a refined, paraffinic wax that is crystalline in structure. It is colorless, odorless, and translucent and is a by product of the petroleum refinement process.

**Mylar®:** Trademark name for inert sheets of clear polyester. Mylar is often used in the storage of fragile objects such as paper or photographs. It is available from most conservation and archival suppliers. Conservation grade polyester materials include Mylar D by DuPont and Melinex 516 by ICI.

**Neutral:** Scientists consider a solution to be neutral when its pH level is 7. This means the solution is neither alkaline nor acidic.

**Nitrate Film:** Film made from nitrated cellulose polymers. Highly nitrated film base, used for movie film and early photographic negatives, can be chemically unstable and has been known to spontaneously ignite upon degradation.

**Nitrile gloves:** Nitrile gloves are synthetic gloves that have low resistance to friction, are easy to slide on, have a higher degree of flexibility, and solvent resistance.

**Off gassing:** Emitting volatile chemicals, often acids and pollutants.

**Patina:** The change in appearance of an object's surface that may be seen as a different color, saturation, or texture. On metals, it is a form of corrosion or oxidation. On organic materials, it is often caused by oxidation and by use wear, where skin oils and other materials are deposited on the surface. Patina can be natural or artificial; desired or disfiguring.

**Permeable:** Allows water (or gasses) to pass through.

**pH:** pH is the measure of hydrogen ion activity in a solution. The scale ranges from 0 to 14. Each number increment specifies a ten fold increase in hydrogen ion activity. Acidic solutions range from 0 to 7, with 1 being the most acid. A pH of 7 is neutral. Alkaline solutions range from 8 to 14, with a maximum alkalinity of 14. The pH can be measured, always in water, with pH strips or with a pH meter.

**Photographic Activity Test (PAT):** PAT is an internationally recognized standardized test for the safety photographic storage materials (ISO Standard 18916).  
[http://www.imagepermanenceinstitute.org/shtml\\_sub/srv\\_pat.shtml](http://www.imagepermanenceinstitute.org/shtml_sub/srv_pat.shtml)

**Pile:** The yarn or supplementary threads (in velvet and/or rugs, for example) that stand up from the plain of the weave.

**Polyester:** An inert plastic that is recognized as being safe for storage of artifacts. It is frequently used in making plastic sleeves, folders, and encapsulations. Conservation grade polyester materials include Mylar D by DuPont and Melinex 516 by ICI.

**Polyethylene:** An inert plastic that is recognized as being safe for the storage of artifacts.

**Polypropylene:** A chemically stable plastic recognized as being safe for the storage of artifacts.

**Polyvinyl Chloride (PVC):** PVC is a chemically *unstable* plastic and is not recommended for the storage of objects. PVC degrades as it ages and emits compounds that form hydrochloric acid that can be very damaging to paper-based collections.

**Porcelain:** Porcelain is a hard, translucent ceramic body that is vitreous or semi-vitreous and is made with feldspathic minerals. Hard-paste porcelain is fired around 1450°C while soft-paste porcelain is fired around 1200°C. It is a hard, non-porous, waterproof ceramic body. Porcelain fused intimately with applied glazes.

**Porous:** Material that contains many small, interconnected holes (pores) that allow water, air, or other materials to pass through them (permeate). Permeable.

**Potash:** Potash is potassium carbonate often derived from wood ashes. It is used in the manufacture of glass, soap, and as a fertilizer.

**Preventive Conservation:** Preventive conservation is an applied form of conservation that seeks to delay the natural or accidental degradation of cultural objects through proactive measures that address safe conditions for management, storage, use, transportation, or exhibition of collections.

**Pre-washed:** Pre-washed fabrics have been washed prior to purchase. To pre-wash fabric at home, wash the fabric in a clothes washer with a gentle detergent, such as Ivory Snow®. Do not use bleach, fabric softener, or any other laundry additive. Use the extra rinse cycle, if it is available. Dry the fabric with no fabric softener.

**Psychrometer:** A psychrometer is an instrument used to measure the moisture content of the air. It compares the readings between a wet-bulb thermometer and a dry-bulb thermometer to determine the relative humidity or used electronic means to do the same.

**Rag:** A term used to describe paper or paper products made from fabric linen or cotton fibers. Traditionally, before the 1840's, actual discarded rags were cleaned and degraded and used to make paper pulp. Rag pulp paper is of high quality and is acid free and lignin free.

**Relative Humidity (RH):** The amount of water that the air can hold at a specific temperature. It expresses the relationship between moisture in the air to the maximum amount of moisture that could be present in the air at a given temperature. RH is expressed as a percentage.

**Reversibility:** Reversibility is an important tenet in conservation. It is the ability to undo a treatment procedure without negatively altering the work of art or artifact.

**Safe fabrics:** Safe fabrics include pre-washed white or unbleached 100% cotton, 100% linen, or a 100% cotton/linen blend. Some dyes are unstable over time or can interact with certain materials such as silver. Dyed fabrics should be avoided. Some polyester and nylon fabrics can be safe if they are not dyed or coated with harmful chemicals such as fire retardants and surface finishes. It is best to check with a conservator before selecting polyester and nylon fabrics.  
<http://www.cr.nps.gov/museum/publications/conservation/18-02pdf>.

**Safe solid foams:** Safe solid foams are generally made of safe polymers or are made using inert materials so that they do not emit harmful chemicals upon aging. They include polyethylene and polypropylene foams that are made without aggressive catalysts. Some common brand names are Ethafoam® (dow.com) and Volara® (voltek.com).



**Safe plastics:** Safe plastics are plastics that do not emit harmful chemicals upon ageing. They are safe for the storage of heirlooms. They include acrylic polymers, polyethylene, polypropylene, Teflon®, polycarbonate, polystyrene, and polyester (Mylar D®). They can be made into solid sheets, film, or plastic bags. Generally, food grade polyethylene and polypropylene bags and boxes are safe. Look for the symbols 1: PETE (polyethylene terephthalate), 2: HDPE (high density polyethylene), 3: LDPE (low density polyethylene), 4: PP (polypropylene), and 5: PS (polystyrene) and in the recycling triangle on the bottom of boxes and other containers.

**Solvent:** A solvent is a liquid that is capable of dissolving or dispersing a solid or other liquid. Conservation solvents are volatile solutions such as acetone, Mineral spirits, alcohols, etc. that can be used to remove a compound from an object surface or used to aid in penetrating a thick or solid material. They have serious health affects and should be used with great care following all safety instructions.

**Stoneware:** Stoneware is a type of ceramic body that is vitreous or semi-vitreous. It is a hard, strong, impermeable ceramic body. Stoneware is fired between 1200°C and 1350°C. It is often used for industrial and exterior applications.

**Text block:** A text block is the stack of leaves or gatherings of paper that are to be bound into a book. The text block does not include the endpapers or boards that are added during binding.

**Tintype:** A tintype is a positive image on a sheet of thin iron coated with black lacquer. The iron is coated with a wet collodion solution and placed in the camera. The late was immediately processed after exposure.

**Ultraviolet:** Ultraviolet (UV) is not visible to the naked eye. The wavelengths are shorter and more powerful than those in the visible and infrared regions. UV light rays are longer than X rays. UV rays can be very damaging to works of art and artifacts.

**Unbuffered:** Unbuffered material contains no alkaline chemical additives to counteract the formation of acids. Unbuffered storage materials are preferred for items with proteins such as wool, silk, and horn.

**“Wet” clean:** To clean by immersion in water or with a water-based solution.

**Zeolite:** Microcrystalline structures that can trap acid gasses, oxidizing gases, and atmospheric pollutants. These are used in clumping kitty litter and were developed for the shrimp farming industry to absorb and hold the acids produced in tanks by shrimp.

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