

Choosing Materials for Museum Storage Glossary

Absorb- When one material takes in another substance into pores or interstices.

Adsorb- When a substance forms a thin layer on the surface of another material.

Activated charcoal- Charcoal/carbon which has been heated to the point that it adsorbs many substances, such as gasses, vapors, and some solids

Ageless- A commonly used oxygen scavenger/ absorbent.

Alkaline reserve- A material which contains an alkaline/basic substance to counteract acidity. A buffer.

Anoxic- Low or no oxygen

Artcare- A line of products manufactured by Nielsen Bainbridge incorporating Microchamber technology (patented zeolite system).

Backer rod- Long, narrow closed-cell polyethylene foam, usually round in cross-section and smooth-surfaced. Often used to make circular mounts by joining ends into a circle using hot melt adhesive. Trapezoidal backer rod has two smooth sides and two rough sides.

Buffered- containing an alkaline reserve, useful when in contact with cellulose-based materials.

Cellulose- a glucose polysaccharide which is the main component of plant cell walls.

Copolymer- a polymer made up from more than one component monomer.

Coroplast- a corrugated polypropylene sheet. Not all Coroplast is archival. It is widely manufactured for industry and commercial use with additives, plasticizers, and colorants.

Corrosion Intercept- A heat-sealable reactive film made of copper particles bonded in a polymer matrix, sacrificially reacts with corrosive gasses.

Closed-cell plastic- a plastic which contains small holes, or cells within the structure (such as a foam), in which the cells do not interlink. Cellular plastics are less dense than solid plastics, open-cell plastics are less dense than closed cell plastics.

Desiccants- A hygroscopic material used to absorb moisture in the surrounding area, such as in a microclimate.

Dissociation- the loss or separation of parts of, or information about, a collection object.

Escal- A clear multilaminar vapor-barrier film made up of a layer of ceramic-coated polyvinyl alcohol film and oriented polypropylene film, with layers of low-density polyethylene on the exterior surfaces to facilitate the ability to heat-seal the Escal film. Excellent vapor barrier for low humidity or low-oxygen environments, while allowing visibility of the contents. Becoming harder to find in the US.

Ethafoam- A trade name for a widely-used, closed-cell polyethylene foam that is considered stable.

Gasket- A material which is compressed between two surfaces in order to make the space air tight.

Hollytex- a polyethylene or polyester sheet made up of spunbonded continuous filaments, calendared for a smooth surface. Used as a support or interleaving material in museum storage.

Hot-melt adhesive- Most hot-melt adhesives used for assembling museum storage containers or supports are either polyethylene homopolymers, or polyethylene/vinyl acetate copolymers.

Lignin- A component of wood cell walls. When processed for paper, the lignin is broken down, and begins to release acids causing weakening and yellowing of paper.

Marvelseal- A laminate barrier film made of an aluminum layer between layers of transparent nylon film and heat sealable polyethylene. An excellent vapor barrier, it is good for creating low-oxygen or low-humidity microclimates. Due to its opacity, access to objects within the chamber is difficult.

Microchamber- the name for a patented zeolite system, developed by Conservation Resources International, and used in Nielsen Bainbridge Artcare products.

Microclimate- a small enclosed space in which the environment is independently controlled from the environment outside.

Oddy test- A test which determines whether a material is off-gassing damaging vapors by placing samples into a high temperature, high-humidity microenvironment with copper, silver, and lead coupons.

Off-gassing- when a material generates gasses.

Open-cell plastic- a plastic which contains small holes, or cells within the structure (such as a foam), in which the cells interlink with one another. Cellular plastics are less dense than solid plastics, open-cell plastics are less dense than closed cell plastics.

Polymer- A long-chain molecule made up of repeating bonded molecular components, or monomers.

Pacific Silvercloth- a dark-brown/black cotton flannel containing sacrificial silver particles. Pacific Silvercloth protects silver objects from sulfur-containing pollutants. It is used to make bags, line storage containers, or wrap silver and silver alloys.

PAT (Photographic Activity Test)- International Standard ISO 18916. The PAT tests for potential chemical interactions between photographs and the test material. It screens for oxidation and reduction reactions which could cause changes in the image and for chromophores which could cause yellowing in the support.

Permalife- This acid-free, lignin-free paper is made with 25% cotton stock, and bears a watermark.

Polyester (Melinex/Mylar)- clear, colorless, thermoplastic polyester (polyethylene terephthalate) film. Chemically inert and dimensionally stable. Good for visible enclosures, and useful for enclosing PVC objects to reduce leaching of plasticizers.

Polyethylene- a polyolefin that is available in many forms, including foams in planks, rods, and sheets of varying densities, boards, and thin flexible sheets, including opaque spun-bonded sheets and clear sheets such as used for zipper-lock bags. While the polymer is quite stable and inert, these materials can contain plasticizers and other additives that can migrate to objects.

Polypropylene- a relatively stable polyolefin used to make Coroplast, among other materials.

Reemay- a spunbonded polyester fabric made from long continuous fibers of Polyethylene terephthalate. Used as a support or interleaving layer in museum storage.

Relative humidity (RH)- The moisture in the air. Expressed as a percentage of moisture actually in the air, compared to the amount the air could hold if fully saturated. RH and temperature are interconnected, because air can hold more moisture when it is warmer, so the relative humidity changes when the temperature changes if the same quantity of moisture is in the air.

Scavengers- Absorbent/Adsorbent materials used to target specific substances, such as oxygen or pollutant scavengers.

Silica gel- a commonly used desiccant, available in a variety of forms.

Stabiltex- a very sheer, lightweight, open weave, polyester fabric. Stabiltex was used as a support backing, for covering fragile textiles, and as an alternative to silk crepe-line, and could be sealed on the edges using heat. Both it and a similar material used as a replacement, **Tetex**, are no longer widely available. Polyester organza is currently the closest available textile.

Teflon tape/ plumber's tape- a polytetrafluoroethylene sheet or narrow tape that is soft, chemically inert. It can be used to line storage mounts for or wrap objects with objects with particularly fragile surfaces.

Tri rod- Triangular backer rod, originally used in the log cabin industry, very fine-celled and smooth-surfaced. No longer easily available.

Tyvek- spunbonded using continuous high density polyethylene filaments. Good for everything from dust covers, to lining storage containers, and making padded internal support.

Unbleached cotton muslin- plain weave, 100% Cotton fabric. Muslin can vary in weight from light to medium and in texture from fine to coarse. Often starched and sized and should be washed before use with museum collections.

Unbuffered- No added alkaline reserve, generally neutral in pH. Better for use with photographs and animal-based materials.

Volara- closed-cell flexible Polyethylene foam. Very smooth surface, even on cut edges.

Zeolites- Microporous crystalline aluminosilicates which trap molecules (such as gaseous pollutants) within internal voids in their structure. They can be engineered to target specific molecules according to size and polarity