



KODAK RELIABLE IMAGE TIP # 70



Preservation Dictionary

Acids

A varied group of chemical substances that when dissolved in water create a hydrogen ion concentration in the solution greater than 10^{-7} . Different acids react in different ways with their environments. Many acids can be reactive with photographs and storage enclosures, shortening their life span.

Adhesive

A substance that causes two or more materials to bond. The action of bonding varies among adhesive types (e.g., pressure-sensitive vs. glue).

Alkali, alkaline, or base

A varied group of substances that when dissolved in water create a hydrogen ion concentration less than 10^{-7} . This term has also been used with paper products to imply the inclusion of an alkaline buffer.

Archival

A term often used to imply that a product will be stable over time and/or not be reactive with enclosed photographs. The term currently has no standard definition or quantifiable method for verification.

Bleed-through

The migration of a colorant from one side of a material to the other.

Blocking Digital image

Any image stored as numerical values on optical or magnetic media. This term is also used for any print created from such a set of stored numerical values.

Fading

The gradual loss of color due to the breakdown of colorants to invisible forms.

Gelatin stain

The yellow or brown discoloration of the clear gelatin binder layer in black-and-white or color photographic prints. Additional stain may be created in color prints when environmental or enclosure pollutants react with residual dye coupler chemistry in the print.

Glassine

A translucent paper storage enclosure most often used for photographic negatives. This material can become permanently embedded in gelatin under very humid conditions. ISO has determined glassine inappropriate for use as a photographic storage enclosure.

ISO (International Organization for Standardization)

An international standards organization that develops manufacturing and performance standards for a wide a variety of industries.

Kappa number

A numerical value indicating a paper's relative lignin content.

Lightfast

A term used to describe a colorant resistant to fading on exposure to light.

Lignin

A chemically complex substance found in many plants that bonds the cellulose fibers. Lignin can be largely removed during pulping, but the cost of low-lignin papers is higher than that of high-lignin or groundwood papers. Lignin is believed to contribute to the degradation of both papers and photographs.

Migration

The movement of chemicals through media. This term is often used to describe the movement of acids between adjacent materials, such as storage papers and enclosed photographs.

Out-gassing

The emission of volatile pollutants into the atmosphere. It is the mechanism by which most harmful chemicals from scrapbook products reach photographs.

Oxidation

The chemical action of electron removal from one atom or molecule by another atom or molecule. This action is often cited as the cause of image fading in black-and-white photographs. Removal of an electron from an atom of metallic silver converts that silver to an ionic, and invisible, form. Oxidation is also implicated in the degradation of color images and papers.

pH

The negative logarithm of the hydrogen ion concentration of an aqueous solution. It is the numeric scale measuring acidity/alkalinity. A pH of 7 is neutral; pH values below 7 indicate acid and above 7 indicate alkali or base.

pH testing pen

A pen containing a pH indicator dye that is used to assess pH. The user spreads a fine layer of the indicator dye on an object's surface and compares the resulting color to a reference.

Pigment

A non-soluble substance used as a colorant. Pigments are generally more stable than dyes, but they produce a narrower color gamut.

Plasticizer

A chemical added to plastics to increase their pliability. The most notable plasticized photo storage material is flexible PVC, which has been shown to exude its plasticizer onto the surface of enclosed images. ISO storage standards recommend against the use of PVC in photograph storage enclosures.

Polyester

A plastic generally considered safe by ISO for use as a storage enclosure for photographs. However, many of these plastics are treated with thin coatings to modify their chemical and surface properties, so polyester products should still pass the PAT.

Polypropylene

A plastic generally considered safe by ISO for use with photographs. However, many of these plastics are treated with thin coatings to modify their chemical and surface properties, so polypropylene products should still pass the PAT.

PVC

Polyvinyl chloride, a plastic generally considered unsafe by ISO for use with photographs due to its plasticizer content and potential for emission of hydrochloric acid upon its degradation. Note that PVC comes in both flexible and rigid forms. The harmful plasticizer is used only in the flexible form.

Rag paper/board

A paper or board with high long-fiber cotton content. Cotton fiber contains no lignin and has historically been considered the most appropriate material for use in photographic storage enclosures and framing packages. It is generally higher in cost than wood pulp papers. Recent research has shown that papers made from delignified, bleached wood pulps may be as safe for use with photographs as papers made from cotton pulps. It should be noted that despite the quality of pulp (wood or cotton) used in paper making, a variety of other paper additives could be reactive with photographs.

RH

Relative humidity, a measure of moisture content in the air. Moisture is crucial to many of the chemical reactions that harm photographs. Reducing air moisture content can significantly extend the life of photographs. However, extremely low humidity can cause irreversible physical deformation and embrittlement of photographs. ISO has recommended that RH levels be kept between 30% and 50%. High humidity can lead to the growth of molds on photographs or the bonding of photos to each other or surrounding scrapbook products (see Blocking).

Silver image interaction

Any action that chemically alters metallic or ionic silver in a black-and-white photograph. This typically takes the form of image oxidation and silver ion reduction.

UV light

Electromagnetic radiation in the range of 300 to 400 nanometers. UV radiation is not visible, and therefore "UV light" is a misnomer. UV radiation has been implicated in the degradation of photographs and papers. Reducing overall image exposure to UV radiation through the use of alternate light sources (daylight and fluorescent lights emit a high degree of UV radiation, tungsten emits a low degree), low light intensity, or special UV filters will extend the life of the exposed image.

Water-soluble

A term used to describe any material that dissolves in water.