

Conservation Glossary

A

abrade: to wear away by scraping, rubbing, grinding or friction.

abrasion: wearing away of surface material from a solid by the friction or action of another solid, a liquid or a gas (or combination); surface loss caused by friction.

absorption: penetration of a substance into the structure of another, such as through capillary action or as radiant energy passing into or through a material.

acetone: dimethyl ketone (CH₃COCH₃); a colorless, low boiling, volatile liquid soluble in water and many other organic liquids. Commonly used as a solvent for adhesives. Highly flammable.

acid-free: a term loosely used for papers and other materials which are often pH neutral or alkaline buffered; could be any pH from 6 up to 11; more descriptive and hence useful terms are "neutral" or "alkaline buffered."

acid-free paper: used primarily to describe paper which has been manufactured to remove residual acids, or potential acid forming materials, to leave a neutral pH product.

acidic: acid-forming; containing an excess of an acid-forming substance; having a pH value of less than 7.

acrylic: general term used to describe a fairly large family of polymers and copolymers where at least one principal structural unit (or monomer) is derived from acrylic or methacrylic acids or their esters, CH₂=CHCOOR, or CH₂=C(CH₃) COOR. Acrylic resins can be cast into sheets, extruded into rods or dissolved in a solvent to produce an adhesive.

acrylic copolymer adhesive: an adhesive based on an acrylic copolymer that is made with at least two different monomers.

acrylic resin emulsion, low viscosity: a dispersion of acrylic particles (usually in aqueous solution) made by emulsion polymerization, and having low solids content.

acrylic rods: extruded rods of acrylic resin (usually polymethylmethacrylate) made by melting the resin and forcing it through a die.

activated carbon: (See activated charcoal)

activated charcoal: amorphous carbon produced from charcoal which has been subjected to high heat (800-900oC) with steam or CO₂ to produce a porous, high surface area (about 3600 square feet/gm.) particle capable of efficient adsorption of gases, vapors and colloidal solids on its surface. Can adsorb material from air and other gases, and liquids such as water.

adhesive: any substance, organic or inorganic, natural or synthetic, that is capable of bonding other substances together by surface attachment.

adhesive, double-coated: an adhesive is applied to both sides of the paper or plastic carrier as in a double-coated tape.

adhesive transfer tape: a carrier film that is sprayed with an adhesive (usually an acrylic adhesive) and sometimes protected with a strip of silicone release paper. The carrier can be removed for application of the adhesive.

adsorption: The adherence of atoms, ions or molecules of a gas, or a mixture of gasses, a liquid, or material dissolved in a liquid, to the surface of another substance.

aerosolize: to convert a liquid into a colloidal suspension of micro-droplets, which facilitates its diffusion in air.

ALARA: As Low As Reasonably Achievable; used with respect to the level of exposure to radiation.

alcohol: commonly used to indicate ethyl or isopropyl alcohol. A generic term used to describe organic chemicals whose primary functional group is a hydroxyl (OH). The generic formula is C_nH_{2n}+OH. Alcohols are colorless liquids, with a wide range of boiling points. Alcohols (mainly ethyl and isopropyl) are used as a storage medium for the so called "wet", "fluid" or "spirit" collections. Alcohols can be used as solvents for adhesives and are often preferred to acetone which is more flammable.

alcohol, denatured: ethyl alcohol rendered unfit for human consumption by the addition of such compounds as gasoline, wood alcohol (methyl alcohol), diethylphthalate, butyl alcohol, petroleum naphtha, etc.

alkaline: Having a pH value greater than 7. The higher the pH the greater the alkalinity.

alkaline reserve: the presence of a compound (e.g., calcium carbonate) in paper at a level sufficient to neutralize acid that might, in the future, be generated from aging of the paper or from atmospheric pollution (ANSI Z39.48-1984). 3% is generally recommended.

(alpha) cellulose: the predominant and essential constituent of all vegetable tissues and fibers. Pure, long-chain alpha cellulose fibers are most easily obtained by washing cotton fibers with 17.5% caustic solution to remove other constituents.

alpha radiation: a stream of alpha particles (helium nuclei, mass 4, charge +2, as in radioactivity). A piece of paper or foil will stop the radiation.

alum-free: free of potassium aluminum sulfate or ammonium aluminum sulfate.

amorphous silica: pure, chemically inert silicon dioxide typically used as a dehumidifying or humidity buffering agent. May be white or may contain a color indicator which changes from bright blue to faded pink when saturated with water.

ampoule (ampule): a small, sealed, glass container.

anodize: to put a protective oxide film on aluminum or other light metal by an electrolytic process.

anodized aluminum: aluminum coated with a layer of aluminum oxide by an anodic electrolytic process.

ANSI: American National Standards Institute, Inc. Approval of an American National Standard requires verification by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

anti-tarnish agent: chemical agent, such as activated charcoal, which, when stored with metal objects, attracts sulfur pollutants, preventing them from reacting with the metal and creating tarnish.

anti-tarnish products: products, made of materials such as paper or cloth that are impregnated with chemicals, such as activated charcoal. When stored with metal objects, they attract the sulfur pollutants, preventing them from reacting with the metal.

APA: American Plywood Association.

archival: term loosely used to imply that products, particularly paper products, are suitable for preservation purposes.

Art-Sorb®: silica material with greater moisture buffering capacity than regular silica gel. Available in bead form sold by the pound or prepackaged in cassettes, and in 20x20in sheets. Sheets are made of a mixture of polypropylene and polyethylene containing 400g of Art-Sorb® particles per square meter.

ASTM: American Society for Testing and Materials.

audio hold-down tape: paper-based or plastic tape used to hold down the end of reel-to-reel audio tape.

B

bail-top jar: glass jar which incorporates a sealing device of heavy gauge wire and cam mechanism to lock down an all-glass lid against a rubber or neoprene (synthetic rubber) gasket.

baked enamel: a hard resin coating formed by cross-linking of the resin with heat. Very often, little or no solvents are involved. This type of coating is used on metal storage cases.

Bakelite: original name for phenol plastics made by Union Carbide, but now covers a range of different plastics; this plastic resin is commonly fabricated into hard plastic jar lids.

batting: non-woven natural or synthetic fiber wadded into a fibrous mass used for padding or stuffing.

bellows: a device that expands and contracts, or has a rising and falling top, to suck in air through a valve and blow it out through a tube.

beta radiation: a stream of beta particles (electrons, mass 0, charge -1, as in radiation). Requires at least 1cm thick aluminum to stop the radiation.

binder clips: spring steel clips used to hold multiple pieces of paper together. They come in a variety of sizes and strengths.

binder's board: gray paper board available in a variety of thicknesses. In appearance, it is similar to the board stock of note pads. Used for the covers of books.

Conservation Glossary

blocking: a term used to indicate that the emulsion layer of poly one print or negative will stick (attach or block) to another after prolonged contact.

blotting paper: an unsized, soft, spongy paper used to absorb liquids.

bolt axle: a simple axle for a wheel made from a nut and bolt.

bonded polyester batting: batting that has been bonded by any of many possible methods including sprayed resins, thermoplastic powder, or the addition of low melting fibers. High loft batting is often spray bonded.

bone folder: a small, hand-held tool made of bone or plastic, used to fold or crease paper or films.

borosilicate glass: glass which contains boron oxide. Versatile. Noted for its excellent chemical durability, and for its resistance to corrosion, heat and thermal shock.

buckram: starch filled, or pyroxylin-coated or impregnated linen or cotton cloth used to cover books.

290 buffer: alkaline substance with a pH over 7, added to a material to neutralize acids or as an alkaline reserve to counteract acids that may form in the future.

buffered: having a buffer added to regulate the pH around a desired value.

burlap: a coarse cloth woven from jute fiber.

burnish: to rub and polish or make shiny or flat.

butt-glued: a joint in which the parts are glued together end-to-end or edge-to-edge. Also referred to as glued butt joint.

butyl (butyl rubber): a class of polymers based on butadiene ($H_2C=CHCH=CH_2$). Typically used in a blend with other synthetic elastomers in order to provide greater resistance to wear and low-temperatures.

butyl closure: containers for freezing that have a layer of butyl alcohol that seals the contents and prevents contact with air.

C

calender: horizontal cast iron rolls with hardened, chilled surfaces resting one on another in a vertical bank at the dry end of the papermaking machine. The paper web is passed between all or part of the calender rolls to increase the smoothness and gloss of its surface.

calendered: a paper or cloth that has been given a smooth surface by passing it through a calender one or more times. Paper which receives a minimum of calendering is said to have an antique finish. With more calendering it acquires a machine finish, then an English finish, and finally a supercalendered (highly glazed) finish.

caliper: the thickness of a material measured under specified conditions. Caliper is usually measured in thousandths of an inch (mills or points), or, under the metric system, in millimeters. It also refers to the instrument used to measure the thickness of a material.

caliper rule: a graduated rule with one sliding jaw and one that is stationary.

cam-lock jar: jar which incorporates a sealing device of heavy gauge wire and cam mechanism to lock lid against a gasket.

cane storage system: storage based on rods containing several holders for ampoules which are immersed into or retrieved from liquid nitrogen.

cellular silicone sponge (polydimethylsiloxane): a spongy material formed by incorporating a gas-evolving chemical in silicone rubber such that the gas forms cells as the rubber cures.

cellulose: Polysaccharide (glucose) polymer that is the main structural chemical in plant cell walls.

cellulose sponge: an elastic porous mass of interlacing plant material that will absorb water.

charcoal, activated: (See activated charcoal)

charcoal cloth: cotton flannel that has been impregnated with activated charcoal. As an anti-tarnish product, it is capable of adsorption of gases, vapors and colloidal solids on its surface. Can adsorb material from air and other gases; and from liquids such as water.

chloroform: trichloromethane; $CHCl_3$, a clear, volatile, dense, non-flammable liquid. Used as a solvent for polymethylmethacrylate sheets. Also dissolves fats, waxes, oils, etc. The vapor is harmful and should be used with caution. Methylene chloride often can be used as a substitute solvent.

clam-shell box: a protective enclosure consisting of a case and two trays, that fit into one another.

clear-view box: paper-based box with a clear polyester film window

compactor storage: high-density storage system in which storage units are mounted on rollers or tracks and moved together to minimize space.

coated prints: Polaroid® photographic prints that have been coated with a polymer immediately after exposure and developing to aid in stabilizing and preserving the image

coaterless prints: a recently developed Polaroid® process in which the print does not require an additional coating after exposure and development.

conservation quality: term loosely used to imply that a product is suitable for preservation purposes.

continuous monofilament random glass fiber mat: single strand glass fibers felted or intertwined in random orientation, used to make sheets and boards by impregnation and pressure.

Copenhagen jar (Danish jar): wide-mouth glass vessels with snap-on polyethylene lids.

corner rounder: a cutting tool with a curved edge used to cut and round off sharp corners.

corrugated: folded or shaped into parallel ridges and furrows so as to form a wavy surface.

corrugated board: two or more layers of paper sheets with a layer of corrugated paper glued between them. Available in single and double wall. Polyethylene/ polypropylene fluted board is sometimes referred to as plastic corrugated board.

crepeline: light weight, open plain weave silk fabric.

crosslink: The union of high-polymer molecules through a reaction initiated by chemicals, heat, or through irradiation. Crosslinking has the effect of bonding polymers into a network, which improves strength and heat resistance, and resistance to solvents. From a conservation standpoint, plastics crosslinked with radiation are generally preferred over those that have been chemically treated. Chemical reactions through natural aging also can cause crosslinking, sometimes leading to embrittlement.

crosslinked polyethylene: a hard insoluble resin composed of ethylene monomer (H₂C-CH₂), polymerized and crosslinked by the addition of a reactive initiator.

crosslinked polyethylene foam: a foam made either by introducing a gas or including a gas-evolving chemical to polyethylene as it crosslinks.

crosswelder machine: machine capable of heat sealing across polyester sheeting. Used to create pockets, divisions, etc.

cryoprotective chemical agent: a substance that is added to cell cultures to help protect them against the lethal effect of freezing (e.g., DMSO and glycerol).

D

Danish jar: (See Copenhagen jar)

DASH: one of several electronic audio tape formats similar to the laser-read compact disc (CD) format, but for tape.

denatured alcohol: (See alcohol, denatured)

dental floss: waxed thread used to clean between the teeth; has been used as sewing thread.

dental stone: a filled, plaster-like compound that sets in the presence of water.

desiccant: soluble or insoluble chemical agent that has such an affinity for water it will withdraw it from other materials. Soluble chemicals are calcium chloride and glycerol, insoluble ones are bauxite and silica gel.

dimethylsulfoxide (DMSO): (CH₃)₂SO, a viscous liquid used as a solvent in laboratories, and as a cryoprotective agent. Water soluble and cell-wall active.

DMSO: dimethylsulfoxide double-wall board: a double thick (about 1/4in) corrugated paper board. Corrugation layers can be parallel or cross-directional.

E

electro-photographic: generic term for the photocopying process (e.g., xerography).

electron irradiation: to treat by exposing to electron radiation. (e.g., to crosslink).

electron radiation crosslinked: a material, such as a synthetic polymer, in which crosslinking is initiated by electron irradiation.

Conservation Glossary

electron micrograph: a photograph of an image generated by an electron microscope, typically using Polaroid® film.

enamel paint: a finely ground, resin-containing oil paint that dries relatively harder, smoother, and glossier than ordinary paint.

enameled aluminum: aluminum coated with enamel paint.

encapsulation: to support fragile paper between two sheets of polyester film, held together by double-coated tape, machine sewing or heat seal. The preservation method does not alter the document in any way and is easily reversible.

EPA: Environmental Protection Agency (U.S. government agency)

epoxy coated: coated with epoxy resin; often heat-cured.

epoxy resin: a resin based on monomers containing epoxy groups; easily cross-linked, often cross-links as it polymerizes. The monomer is:

O

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(-C — C-)

ethanol: (See ethyl alcohol)

ethyl alcohol: grain alcohol, spirits of wine. The second most simple of the primary alcohols. Formula: C₂H₅OH.

ethyl methacrylate/methyl acrylate copolymer: (Brand name: (Acryloid® B-72, Paraloid® B-72) a composition frequently found in acrylic varnishes, and adhesives; the common formula of 70% EMA to 30% MA has a softening point of ≈40°C and is soluble in acetone and toluene, along with others.

ethylhydroxyethylcellulose: a modified cellulose often used as a thickener or as an adhesive in some conservation applications.

excelsior: fine curled wood shavings, used especially for packing fragile items extruded

channel: a “U” shaped piece of metal or plastic which has been formed by forcing hot (or cold) material through a die to produce a continuously formed piece.

extrusion frames: a frame made of extruded channel.

F

felt: a compressed, densely matted unwoven fabric of wool, sometimes with rayon or hair; also made of polyester or other plastic fibers.

ferrotyping: a term used to indicate an increase in surface gloss of the image surface (over time) at the point of contact between two photographic prints.

fiberglass: a plastic resin (typically a polyester) reinforced with fine (about 0.005 to 0.2mm dia.) glass fibers.

fiber spunbonded olefin: a spun bonded non-woven sheet of olefin polymer, such as polyethylene. (Brand name: Tyvek®) (See spunbonded)

filler: an inert material added to paper, resin, etc. to modify their properties and improve quality.

fixed: securely placed or fastened, permanently and definitely located; to have hardened and preserved tissues by immersion in solution (i.e., formalin) that quickly coagulates living tissue.

flame-seal: to seal a container (i.e., case, vial, ampoule, etc.) air-tight, by melting the glass opening with an open flame.

flannel: a loosely woven, generally cotton fabric with the weave concealed by a napped surface.

flint glass: soda-lime glass. Has fair to moderate resistance to corrosion, and low resistance to heat and thermal shock. Commonly used as window and bottle glass.

fluted vinyl cord: extruded vinyl cord of various diameters having channels (flutes) along its length. Used as spline material for window or door screens.

foam core: layer of plastic foam laminated on the outside by paper based material.

foil-backed adhesive: very thin sheet metal with a coating of adhesive on one side; used in labels and stickers, and certain types of laminates.

formaldehyde: the simplest of the aldehydes (HCHO). Has a boiling point of -21°C, and in water solution boils about 98°C. Used in the synthesis of many organic materials, and as a fixative and tanning agent. Poisonous!

formalin: an approximately 30-40% formaldehyde/water solution. Poisonous! (See formaldehyde)

friable: able to be easily rubbed, crumbled or pulverized into a powder.

friction fit: parts which are held together by friction so that they are not easily separated.

fume-free: free of smoke, vapors, or gas.

G

galvanize: to apply an electric current; to plate (metal) with zinc, originally by galvanic action.

gamma radiation: high-energy photons emitted spontaneously by a radioactive substance; a stream of gamma rays. 2in or more of lead are used to stop them.

gasket: a packing of deformable material in the form of a sheet or ring used to make a pressure-tight joint.

gauge: a tool to measure any physical dimension, such as the thickness, or gauge (ga), of wire.

gauss : a measure of the density of flux of a magnetic field.

gelatin: partially degraded collagen, the major connective tissue protein of animals. Gelatin is made by extracting hide scraps, hooves, tendons, or bone with dilute acid or steam.

genitalia vials: glass tubes or jars usually containing the organs of the reproductive system of insects.

gesso: a material made from a mixture of chalk or whiting and gelatin or casein glue.

glass crocks: all-glass, wide-mouth containers that are sealed with a metal clamp, with a turn-screw providing sealing pressure against the lid through a gasket of rubber or similar material.

glass fibers: fine flexible fibers made from glass; used for heat and sound insulation, fireproof textiles, acid-resistant fabrics, retainer mats for storage batteries, panelboard, filters, and electrical insulating tape, cloth, and rope. Glasses low in alkali have high electrical resistance, while those of higher alkali are more acid-resistant. They have very high tensile strengths.

glass fiber mat: fine glass fibers felted or intertwined in random orientation; used to make sheets and boards by impregnation and pressure.

glassine: lightweight, translucent paper. For stability, transparency should be obtained from mechanical processing rather than chemical treatments or additives. pH should be close to neutral.

glue gun: a hand-held device for applying hot-melt adhesive. A rod of solid thermoplastic adhesive is pushed through the hollow heated metal tip.

glycerin: (See glycerol)

glycerol: trihydroxypropane $C_3H_5(OH)_3$. Syrupy liquid with a boiling point of 290°C. Soluble in water. Hygroscopic, cryoprotective.

grit: relating to the size of a hard sharp granule (as of sand) that is adhered to sandpaper; also used to describe powdered abrasives.

ground glass jar: a glass vessel with finely ground surfaces on its inside neck, mated with a carefully matched glass stopper with sealing surfaces ground to fine roughness.

gypsum: hydrated calcium sulfate $CaSO_4 \cdot 2H_2O$; used make plaster, as a paint pigment, for coating paper and to make gypsum cement.

gypsum cement: portland cement (finely ground high calcium limestone) mixed with raw gypsum to retard the set.

H

hacksaw: a tool having a hardened fine-toothed blade held in a bow-shaped frame used to cut metal, wood or other hard materials.

Halon: Halogenated hydrocarbon fire extinguishing agents, either bromochlorodifluoromethane (Halon 1211) or bromotrifluoromethane (Halon 1301).

HDPE: High-density polyethylene.

headlamp: a hat or headband with a battery-operated light attached on the front which allows a person to work in the dark with their hands free.

heat gun: a hand-held device usually consisting of an insulated handle, an electrical resistance wire heater and a fan. It produces a stream of intensely hot air.

Conservation Glossary

heat-set adhesive: neutral pH thermoplastic adhesive, typically supplied in sheet form. Activated with a heated press or iron. Bonds on cooling. Typically used to mount photographs, lithographs, etc.

heat-set tissue: tissue paper coated with a thermoplastic (often acrylic-based) adhesive.

herbarium: a collection of dried plant specimens, usually mounted and systematically arranged for reference; a place that houses such a collection.

hermetically sealed: sealed air-tight, usually by flame sealing the open glass neck of the container (i.e., case, vial, ampoule, etc.).

high-density polyethylene: polyethylene that has been produced to be linear and highly crystalline (90%).

hook and loop material: a flexible, (typically nylon) reusable fastening system involving the pressing together of two parts: one, a textile with many tiny flexible hooks covering its surface, and two, a matching textile, the surface of which is covered with tiny loops. Entanglement of hooks and loops joins the pieces. They can be pulled apart and refastened.

hot-melt adhesive: a thermoplastic adhesive that is applied in the molten state and forms a bond on cooling to a solid state.

hot-melt glue gun: (See glue gun)

hot wire cutter: electrical resistance wire held in a bow frame. Cutting action is by melting. Commonly used to cut plastic foam.

humidity indicator card: a paper-based card impregnated with an adsorbing desiccant which changes color when the ratio of the actual vapor pressure of air reaches its saturation vapor pressure at a certain temperature.

hydrolysis: a chemical reaction in which a compound reacts with the ions of water (H⁺ and OH⁻) to produce a weak acid, a weak base, or both.

hydroperoxides: functional groups of the form (-R-O-O-R-), which can be a weak link in a molecule, breaking to form radicals and can form colored compounds.

hydrophilic: readily absorbs water.

hygroscopic: ability to attract or absorb moisture from the air.

India Ink: a permanent black ink made of lampblack and blue binder; some varieties are waterproof.

I

inflorescences: buds or blossoms on plants.

insect traps: various types of devices using a combination of chemicals that both attract and kill insects.

integral-type prints: Polaroid® photographs in which the developer, fixer, and image are combined in a single polyester package (i.e., SX-70 film).

interleaving: placing a blank piece of tissue or other paper between the bound leaves of a book.

interleaving paper: pH neutral or buffered paper placed between the bound leaves of a book or between documents; often used to absorb acids and slow the deterioration of the object.

ips: inches per second; the speed at which tape moves through a recording or playback device.

isopropanol: (See isopropyl alcohol)

isopropyl alcohol: secondary propyl alcohol, rubbing alcohol, (CH₃)₂CHOH. Colorless, clear flammable liquid soluble in water, ether, alcohol, acetone.

J

jersey: a soft, elastic knitted cloth of natural or synthetic fibers.

jig: a device, often with metal surfaces, used as a guide for a tool or as a template.

joint compound bucket: strong 5 gallon plastic buckets with resealable lids, commonly sold filled with house paint or joint compound, or can be purchased empty.

jute: either of two Asiatic plants of the genus Corchorus, useful for their fiber.

K

knit fabric: a fabric produced by a process which interlocks loops of yarn.

kraft paper: a strong paper or cardboard made from sulfate-process wood pulp; unbleached varieties used for wrapping paper and shipping cartons.

L

laminated: made up of several different bonded layers.

late logarithmic growth: the latter part of the growth curve when cells and/or microorganisms are still growing at an exponential rate.

lathe: a machine for shaping an article of wood, metal, etc. by holding and turning it rapidly against the edge of a cutting tool.

lignin: Amorphous organic mixture of phenol-like chemicals deposited between the cellulose fibrils in the cell wall. Produces acidic substances in paper.

lignin-free: does not contain any lignin, whether chemically modified or not; it does not mean that the fibers do not contain ground wood; any lignin (> 0.1 to 0.3%) is unacceptable; the fact that a wood fibre paper is labeled as chemically processed, is no guarantee that the product does not contain lignin; many papers contain a mixture of pulps of widely varying qualities.

liquid nitrogen freezer: an insulated device used to 'snap freeze' biological material by controlled immersion into liquid nitrogen (boiling point -195.8oC). Also used for long-term storage.

lyophils: materials generated by the process of lyophilization.

lyophilization: freeze-drying

M

magnetometer: instrument used for measuring magnetic intensity.

mechanical freezer: a freezer that utilizes gas (freon, ammonia NH₃), compression, decompression, and convection to bring temperatures to sub-H₂O-freezing temperatures.

metal oxides: finely ground oxides (commonly chrome and iron oxides) bonded to polyester audio tape; able to be magnetized; the actual recording medium of audio tape, computer diskettes, etc.

methyl methacrylate: a monomer (H₂C=C(CH₃)COOH) used to make acrylic plastics, such as sheets and rods.

microcup: small glass cup used to house dissected insect parts.

microfoam: (See polypropylene foam)

microorganisms: a microscopic organism, such as bacteria, protozoa, viruses, etc.

microslide: a glass microscope slide, usually 1in x 3in.

mill finish: a surface characteristic of rolled metal products; slightly napped finished characteristic of worsted fabrics.

mineral spirits: a petroleum distillate that is used especially as a paint or varnish thinner.

monofilament: a single untwisted synthetic filament (as of nylon).

monomer: a simple molecule capable of combining with molecules to form a polymer; a repeating structure within a polymer.

mounted: attached to a support and arranged or assembled for use, examination, or display

MSDS: Material Safety Data Sheets. Provided by manufacturers. They include data on the volatility, flammability, toxicity, and other safety related information concerning a specific chemical or material.

muslin: any of a variety of fine cotton cloths of plain weave.

N

needle punched batting: Batting that is formed by fiber entanglement using barbed needles. Needle punching tends to compress the batting. Medium to low loft batting is often needle punched.

Neoprene: (See polychloroprene)

nitrile rubber: a synthetic rubber which is a copolymer of acrylonitrile (CH₂=CHCN) and butadiene (CH₂=CH-CH=CH₂), which can be represented as (CH₂-CH=CH-CH₂-CH₂-CHCN); highly oil resistant.

non-woven fabric: a material held together by means other than weaving, such as felted, spun bonded, heat-bonded or needle-punched fabric.

non-woven polyester/polytetrafluoroethylene laminate: a thin layer of non-woven polyester fibers bonded to polytetrafluoroethylene to form a vapor-permeable, but not liquid water permeable, laminate.

Conservation Glossary

Nylon: (brand name) a polyamide

O

off-gasing: the process of releasing (usually slowly) volatile materials (including organic acids) from woods, some paints, some polymers, etc. Many of these volatile materials contribute to the deterioration of objects.

olefin: any of the family of unsaturated (having a carbon-carbon double bond) hydrocarbons. (e.g., ethylene and propylene)

opacifier: a substance that absorbs or reflects light; used to prevent light passing through a substance.

oxidation: originally used to describe a reaction in which oxygen combined with another substance; the term is now used to describe any reaction in which electrons are transferred. Generally, oxidation will result in the deterioration of museum specimens.

oxygen analyzer: an instrument (can be portable) designed to monitor oxygen levels in air or liquid. For air, it uses a galvanic electrochemical-type sensor.

oxygen scavenger: a material (typically a metal hydride) designed to remove oxygen from an atmosphere by reacting with it to form water.

ozone: allotropic form (O₃) of oxygen, usually formed by electrical discharges in the air. Powerful oxidizer, harmful to museum objects.

P

pallet: a low, portable platform, usually of wood or metal, on which a heavy or bulky object is placed for storage, transport, or shipment.

particulate: of or relating to minute separate particles.

PD: one of several electronic audio tape formats similar to the laser-read compact disc (CD) format, but for tape.

peroxides: chemicals having the general formulation (R-O-O-R). Peroxides are oxidizing agents and are harmful to museum objects.

pH: the hydrogen ion activity of a system in moles/liter. pH 1 – 6.9 is acid (10⁻¹ to 10^{-6.9} moles/L), pH 7 is neutral and pH 7.1 to 14 is alkaline.

pH neutral: the hydrogen ion activity of a system is 7, neither acidic nor alkaline (See pH). In conservation, pH neutral materials are considered to be less reactive and more stable.

photo-sensitizer: chemicals (added at the time of manufacture) that enhance the efficiency of the effect of light on photographic film and paper.

photo activity test: ANSI Test No. IT9.2-1988. It was developed for silver imaging. The test uses fading and staining detectors to evaluate materials used in photographic storage.

photoelectric: pertaining to the electrical effects of light; such as the generation of voltage or a change in resistance when exposed to light.

photolysis: chemical decomposition due to the action of light.

plain weave: a weave in which the threads interlace alternately.

plank: a heavy, thick board. Can be made of wood, polyethylene, polypropylene, or other plastic material. Used as a base for supporting objects.

plasticizer: low molecular weight chemicals added to give flexibility to a material, such as tri-phenyl phosphate added to cellulose acetate in a photographic film base. Some plastics contain plasticizers that can negatively react with objects.

plaster of paris: the hemihydrate 2CaSO₄•H₂O, the basis of most gypsum plasters. It is called calcined gypsum, or plaster of paris when used for making ornaments or casts.

plastic: any material which can be deformed and reformed; often used to mean a thermoplastic material.

plexiglass: transparent methyl methacrylate, usually formed into sheets or rods.

ply: one of several layers laminated together.

point: One thousandth of an inch. The point is used in expressing the thickness of paper or board, as well as other materials, but not leather. Point is commonly used to describe the thickness of paper-board as in 10pt = .01in, 20pt = .02in, 40pt = .04in, 60pt = .06in

poly-aluminum laminate: (See polyester and aluminum laminate)

polyamide: a polymer containing amide linkages -(C-O-NH); proteins are natural polyamides; synthetic polyamides have a variety of compositions.

polychloroprene: an elastomer made produced through the use of butadiene; also known as Neoprene.

polydimethylsiloxane: a polymer having the repeat unit $-(O-Si(CH_3)_2)-$, can range from a low molecular weight oil to a firm resin; easily crosslinked to form a rubbery compound.

polyester: polymeric reaction product of alcohols and carboxylic acids having the repeating linkage $(-RCOO-)$. The polyester may be of the saturated or unsaturated type depending on the dicarboxylic acid used. The unsaturated polyesters are used in conjunction with a liquid unsaturated monomer (e.g., styrene) as the basis of two-part adhesives and casting materials that require a catalyst system. The saturated polyesters are widely used as hot-melt adhesives. Polyesters are formed into fibers, fabrics, films tapes vials, etc.

polyester and aluminum laminate: a thin layer of aluminum bonded to polyester to form a laminate. The film is impermeable to gases and can be heat-sealed to form gas-tight pouches.

polyester batting: a non-woven fabric made of polyester fibers held together by different methods such as, the use of adhesive resins (bonded), taking advantage of the thermoplastic properties of the fiber (thermally bonded) or mechanical methods (needle punched).

polyester felt: a compressed, densely matted non-woven fabric made of polyester fibers.

polyester film: an extruded film of polyester manufactured in various thicknesses and widths. Coatings used in the manufacturing process can harmful to objects.

polyester film sealer: a machine which uses heat to edge-seal polyester sheets. Used for encapsulation and for making envelopes.

polyester quilt batting: (See Batting and Polyester Batting)

polyester resin: a highly insoluble resin of polyester, the most common of which is polyethylene terephthalate.

polyester, thermally set: an insoluble polyester which has been crosslinked using heat.

polyethylene (PE): a polymer of ethylene, having the repeat unit $-(CH_2CH_2)-$, used in hot-melt adhesive formulations, and prepared as sheets, foam, rods, blocks, etc.

polyethylene electron irradiation crosslinked: polyethylene crosslinked by irradiation rather than by reactive chemicals.

polyethylene foam: a foam made by the introduction of gas or by inclusion of a gas-evolving chemical in molten polyethylene such that cells are formed before the resin cools.

polyethylene microfoam: a dense type of polyethylene foam whose chief characteristic is the tiny size of the component cells. (See polyethylene foam)

polyethylene sheeting: extruded polyethylene film.

polyethylene terephthalate: a resin made by the polymerization of ethylene glycol $(HO-CH_2-CH_2-OH)$ and dimethyl terephthalate $(C_6H_4(COOCH_3)_2)$. Polyethylene terephthalate is an ester, and is made into films, vials, etc.

polymethylmethacrylate acrylic sheet: plexiglass. can be cast into sheets ($>.3cm$ thick) or extruded (

polyolefin: a thermoplastic material produced by the polymerization or copolymerization of olefins, e.g., ethylene, propylene. Polyethylene and polypropylene plastics are considered "safe" materials for use in storage.

polypropylene/polyethylene fluted sheets: extruded plastic fluted sheets of various thicknesses and widths which resemble corrugated paperboard. Inert, stable.

polypropylene foam: similar to polyethylene foam, but made from polypropylene resin $(-CH_2-CH(CH_3)-)$

polystyrene (PS): A thermoplastic material produced by the polymerization of styrene $(CH_2=CH(C_6H_5))$. Polystyrene is used in solution in organic solvent as an adhesive for polystyrene and certain porous materials.

polystyrene, expanded: foamed polystyrene

polytetrafluoroethylene: a resin formed from tetrafluoroethylene monomer $(F_2C=CF_2)$; highly insoluble, extremely high melting point; highly inert with very low coefficient of friction. (Brand name: Teflon®)

Conservation Glossary

polyurethane: A polymer derived from the reaction of a polyisocyanate with a polyhydroxyl compound normally of polyester or polyether structure. Polyurethane foams and most polyurethane varnishes are not stable on a long-term basis and should not be used in conservation applications.

polyvinyl acetate (PVA or PVAC): A range of thermoplastic materials in either emulsion or resinous form produced by the polymerization of vinyl acetate as the sole or principal monomer. Polyvinyl acetate is used as a versatile adhesive for porous materials, particularly for wood and paper, and for general packaging work.

polyvinyl acetate emulsion adhesive: a water-based adhesive emulsion using polyvinyl acetate resin. Acetic acid is usually present in water-based, white adhesives, and they should not be used on or near museum objects or specimens.

polyvinyl chloride (PVC): A range of thermoplastic materials produced by the polymerization of vinyl chloride. PVCs generally are not recommended for conservation applications because of the plasticizers and chlorine they contain. An exception is industrial grade thermoplastic PVC piping meeting ASTM D-1734 specifications.

powder coating: a coating made from spraying powdered thermosetting resins onto a metal substrate, which are then set by baking.

power saw: a power operated saw such as hand-held or table mounted electric circular saws and band saws.

preservative: a chemical added to material to prevent oxidation, fermentation or other deterioration, usually by bacteria.

pressure closures: devices which seal by means of two interlocking portions. They may be repeatedly opened and closed (i.e., the locking closure strips for plastic bags).

pressure sensitive adhesive: an adhesive that produces a permanently tacky film to which a second adherend readily adheres after the brief application of pressure; also called 'self-adhesive' but this term is deprecated. An example is pressure sensitive tape.

print-through: on sound recordings, a phenomenon in which one hears an echo or ghost of a given signal either prior to, or immediately following the actual recording.

protozoa: a diverse phylum of microorganisms from simple uninucleate protoplast to colonial forms.

PTFE : polytetrafluoroethylene (Brand name: Teflon®).

pyritized: a mineral specimen that contains pyrite (FeS₂).

Q

quilt batting: (See Batting)

R

radioactivity: the property possessed by some elements (as uranium) of spontaneously emitting alpha or beta rays and sometimes also gamma rays by the disintegration of the nuclei of atoms.

radon: a heavy radioactive stable gaseous element formed by disintegration of radium, part of a uranium decay series.

radon daughters: the series of elements formed by the continuing disintegration of radon.

rag board: a type of cardboard made wholly or partly from cotton or linen rags. Pure rag boards are the strongest and most resistant to discoloration and deterioration due to age.

R-DAT: one of several electronic audio tape formats similar to the laser-read compact disc (CD) format, but for tape.

relative humidity (RH): the ratio of the actual vapor pressure of air to its saturation vapor pressure at that temperature.

retort stand: metal laboratory tool, constructed in various configurations; used to hold glass containers over a flame.

rheostat: a variable resistor; one whose resistance can be changed without interrupting the flow of electricity. Used to regulate electrical equipment.

rolled channel: a steel product with a U-shaped cross-section made from deformed hot or cold rolled steel strip. Rolled steel members can be thinner and lighter weight than extruded equivalent.

rubber: a natural, synthetic or modified high polymer with elastic properties, and, after vulcanization, elastic recovery; the generic term is elastomer.

S

scalpel: a small knife with a very sharp blade. The blade can either be made of replaceable stainless steel or, in one piece with the handle, of carbon steel. The carbon steel blade can be honed to a fine edge.

screw-top jar: plastic or glass jar with a threaded mouth which fits the threads of a metal or plastic lid.

second harmonic distortion: on sound recordings, the measurement of unwanted noise superimposed **onto an original signal**.

self-adhesive: can adhere to a surface without the addition of water or other activating agent. (See pressure sensitive)

shell vial: straight-sided glass vial with polyethylene plug closure; used for storing dry products or specimens.

silica gel: a colloidal, highly absorbent silica used as a dehumidifying and dehydrating agent. Over 25 different grades of granular silica gels are commercially available. These vary in particle size, absorption characteristics and purity. Moisture content indicators are added to some types.

silicone: a generic term given to polydimethyl siloxane.

silicone release paper-based polymer, usually polydimethyl siloxane, which prevents adhesion of most materials.

single-wall board: paperboard having a single corrugated layer. Most commonly available for conservation purposes with an alkaline buffer.

size(ing): any thin, pasty substance used as a glaze or filler on porous materials, as on plaster, paper, or cloth in order to fill or stiffen it.

slurry: a free-flowing pumpable suspension of fine solid material in a liquid.

spline: a flat or round strip of plastic or metal that fits into a groove or slot to allow only relative lengthwise motion of the parts; Also refers to the groove or slot into which it fits.

spunbonded: non-woven material produced by a continuous process, from the polymer chips to the roll goods. It includes the following steps: melting the polymer chips, extruding it through the spinnerette and randomly laying the continuous filaments to form the sheet of material.

stabilization processed: process in which black-and-white prints are chemically stabilized in a rapid developing and printing process without using water washes. These photographs retain residual chemicals and should not be stored with other prints without protection.

starch: vegetable carbohydrate occurring in the granular form in certain plants and corresponding to a polymer composed almost exclusively of anhydro alpha-D-glucose groups.

stereo: giving, relating to, or constituting a three-dimensional effect of auditory perspective.

stress: force producing, or tending to produce, deformation in a material.

study mounts: biological specimens mounted in a manner to facilitate their study, rather than for exhibition.

styrofoam: a polystyrene foam; may contain other resins.

T

T-hanger: (See T-hinge)

T-hinge: a paper-based fastener for attaching paper prints, drawings, etc. to backing board using an adhesive. Consists of two pieces overlapped in the form of a "T".

tails-out: in recording tape, when it is wound onto the reel with the end of the tape on the outside.

taxa: plural for one of hierarchy of levels in the biological classification of organisms.

taxidermy: the art of preparing, stuffing, and mounting the skins of animals, especially vertebrates.

taxidermy mount: a custom-made stand or support used for the display of an animal skin for exhibit.

Teflon®: (See polytetrafluoroethylene)

telescope style box: a two-piece box in which the sides of one part fit over those of the other.

Conservation Glossary

telescopic cantilever arm: a projecting mechanical arm that has parts which can fit over each other to extend a distance, and which is supported only on one end. An extensible boom that extends laterally from its support.

template: a pattern made of wood, paper or cloth used to reproduce identical pieces.

tensile strength: ability of a material to resist failure from tensile (stretching) force.

terry cloth: an absorbent fabric, generally 100% cotton, with uncut loops forming the pile.

thermo-hygrometer: an instrument for measuring relative humidity through use of wet and dry bulbs.

thermoplastic (adjective): Having the property of being softened by heat and hardened by cooling; these phenomena are repeatable. Many thermoplastic materials become thermosetting by appropriate treatment to induce crosslinking, e.g., by addition of a suitable chemical crosslinking agent or by irradiation.

tissue paper: very thin, unsized, nearly transparent paper.

torque: a force that produces or tends to produce rotation or torsion. also a turning or twisting force.

trouble light: electric light bulb partially surrounded by a protective metal grid with a built-in hook so that it can be hung; typically connected to a very long extension cord.

twill tape: fabric ribbon weave in which the filling threads pass over one and under two or more warp threads to give an appearance of diagonal lines. Generally made of 100% cotton, linen, or polyester, and used as ties in museum storage designs.

type: a specimen or series of specimens on which a taxonomic species or subspecies is actually based.

type collection: a collection of type specimens organized in a systematic way for study or display (e.g., American Type Culture Collection [ATCC]).

U

ultraviolet (UV) light: that part of the electromagnetic spectrum having wavelengths from about 400nm (long-wavelength UV) to about 4nm (short wavelength UV) (some say to stop @ 40nm; infrared light.)

UV-inhibitors: chemicals which absorb the energy of ultraviolet light, usually releasing it as heat. They are sacrificial chemicals used as protectants for the materials containing them.

UV-stabilizer: chemicals introduced into a material which immediately absorb any radicals produced by ultraviolet radiation; protects the material in which they are contained.

unbuffered: any material that does not contain an alkaline reserve.

V

vapor barrier: a layer of material (as polyethylene film) used to retard or prevent the absorption of moisture into a construction (as a wall or floor), a storage area (as a case or shelving system) or an object.

W

web adhesive: low melting thermoplastic polyamide adhesive in web form. It softens at 260oF to 325oF. It does not come on a carrier film.

X

Y

Z

zinc chromate: a surfacing material employed in painting or finishing to provide an anchorage or adhesion of the finishing material; used as a primer on steel. It has a tendency to dissolve when moisture penetrates the paint, and this dissolved chromate retards corrosion of the steel.

zip or zipper closure: a type of polyethylene bag closure in which the two top edges of the bag close as if with a zipper; the matching grips on the edge of the bag are drawn together through pressure.