INTERNATIONAL STANDARD

ISO 18913

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Imaging materials — Permanence — Vocabulary

Matériaux pour image — Permanence — Vocabulaire

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 18913 was prepared by Technical Committee ISO/TC 42, *Photography*.

This second edition cancels and replaces the first edition (ISO 18913:2003), which has been technically revised.

Introduction

This International Standard is one of a series dealing with the physical properties and stability of imaging materials.

Imaging materials — Permanence — Vocabulary

1 Scope

This International Standard establishes a vocabulary of terms and definitions used in relation to the permanence of imaging materials, related storage materials and digital storage media.

In most cases these terms and definitions are generic and are applicable to the entire imaging industry. For terms and definitions specific to particular applications, industry standards are applicable. However, in some cases the definition of a term is still evolving and/or is used by different user groups in different ways. In these cases, a definition related to permanence of imaging materials work is given and a note to this effect is included.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5-3, *Photography and graphic technology— Density measurements — Part 3: Spectral conditions*

ISO 10716, *Paper board — Determination of alkali reserve*

ISO 14644-1, *Cleanrooms and associated controlled environments — Part 1: Classification of air cleanliness by particle concentration*

ISO 18902, *Imaging materials — Processed imaging materials — Albums, framing and storage materials*

ISO 18906, *Imaging materials — Photographic films — Specifications for safety film*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
abrasion
wearing away of a surface by friction as a result of rubbing

3.2
absolute humidity
mass of water vapour per unit volume of air

3.3
accelerated ageing
changes in the characteristics of an image-bearing material that occur when one or more of the environmental factors (such as temperature, light, or air pollutants) is intentionally increased above that found in typical use or storage conditions, usually to induce change in a shorter period of time

NOTE This is done in order to predict the behaviour of a product under typical storage or display conditions.

3.4
accuracy
closeness of the agreement between the result of a measurement and a true value of the measurement

NOTE 1 Accuracy is a qualitative concept.

NOTE 2 The term **precision** should not be used for **accuracy**.

3.5
acid-free adhesive
mounting adhesive with a cold extraction pH between 7,0 ± 0,2 and 9,5 ± 0,2, as stipulated in ISO 18902

3.6
acid-free paper or paperboard
paper or paperboard with a cold extraction pH between 7,0 ± 0,2 and 9,5 ± 0,2 that is produced in an acid-free process and sized in a neutral or alkaline manner, as stipulated in ISO 18902

3.7
album
binder or book structure having front and back covers (usually opaque and rigid) in which pages are bound along one edge either by plastic straps, gluing, sewing, metal posts or rings

3.8
albumen plate
glass sheet bearing a silver halide/albumen layer which yields a visible image after exposure and processing

3.9
ambient conditions
working environment

NOTE For preservation purposes these may or may not be the same as the storage environment.

3.10
ambrotype plate
glass plate collodion positive, i.e. glass sheet bearing a thin silver halide/cellulose nitrate layer which yields a visible image after exposure and processing

NOTE The processed negative silver image appears as a positive when backed by a dark field.

3.11
anti-blocking agent
component of a material that provides microscopic bumps on the surface in order to lower contact area, reduce the coefficient of friction and minimize ferrotyping, blocking and the occurrence of Newton's rings

EXAMPLE Talc, silicates or matte beads.

3.12
aperture card
card of standard dimensions with one or more openings into which a microfilm frame or frames can be mounted or inserted

3.13
aperture window
opening in the flange that is used to facilitate threading of magnetic tape on the hub and inspection of the wind

3.14
archival (deprecated)
material that can be expected to preserve images forever, so that such images can be retrieved without significant loss when properly stored

NOTE As no such material exists, this is a deprecated term and as such is not to be used in International Standards for imaging materials or in systems specifications.

3.15
Arrhenius plot
plot of the logarithm of the time for a given change in a characteristic proportional to the reaction rate (dye loss, tensile strength change, D_{min} yellowing, etc.) versus the reciprocal of the temperature expressed in Kelvin

NOTE The Arrhenius plot can be used to predict behaviour at a temperature lower than that at which a test is run, as described in ISO 18924[1].

3.16
base
support in a recording material on which the image receiving/recording layers or magnetic layer (and, if necessary, the back layer) are coated

3.17
baseline
condition representing a hard copy system (print, optical disc, etc.) at time of manufacture

NOTE This is customarily the initial parameter measurement taken prior to any application of stress. The designation is usually t = 0 for a stress time equal to zero hours.

3.18
blister
localized delamination of a multilayer assembly that looks like a bubble

3.19
Block Error Rate
BLER
ratio of erroneous blocks to total blocks on an optical disc measured at the input of the first (C1) decoder (before any error correction is applied)

NOTE The more commonly reported value for BLER is the number of erroneous blocks per second measured at the input of the C1-decoder during playback at the standard (1X) data rate.

3.20
blocking
sticking together of similar or dissimilar materials in physical contact

cf. **anti-blocking agent** (3.11)

3.21
blue print
defect resulting from a drastic reduction in the light stability of the yellow dye in a chromogenic print

NOTE A common cause is when a print has been lacquered in a very humid environment or was not thoroughly dried before lacquering.

3.22
brittleness
property of a material that causes it to crack or break when bent or flexed

3.23
buffered
paper or paperboard with alkali reserve (as defined in ISO 10716) that is equivalent to at least 2,0 % mass fraction calcium carbonate ($CaCO_3$)

3.24
can
metal or plastic container for a roll of recording material, such as photographic film or magnetic tape

3.25
carrier
medium upon which information is recorded

cf. **medium** (3.114)

3.26
carton or box
outer container that can hold one or more individual units and which may be a fabrication of paper, card stock or plastic

3.27
cartridge
housing for a roll of recording material, such as photographic film or magnetic tape, wound on a single hub or reel

cf. **cassette** (3.28)

NOTE The term **cartridge** is also used in some cases to describe an ink container.

3.28
cassette
housing for a roll of recording material, such as photographic film or magnetic tape, whose ends are attached to two hubs or reels

cf. **cartridge** (3.27)

3.29
CD-ROM
compact disc read only medium
optical disc to which information is transferred during manufacture to certain areas in the compact disc format

NOTE The information can be read many times.

3.30
CD-RW
compact disc rewritable
recordable optical disc in which information can be recorded to certain areas in the compact disc format

NOTE The information can be erased and rerecorded many times.

3.31
cellulose-acetate base
base for recording materials composed mainly of cellulose esters of acetic acid

3.32
cellulose-ester base
base for recording materials composed mainly of cellulose esters of acetic, propionic or butyric acid, or mixtures thereof

3.33
class 100 000 clean room
controlled environment in which the level of airborne contaminates meets the requirements of ISO 14644-1

3.34
collodion plate
collodion wet plate
collodion dry plate
glass sheet bearing a thin silver halide/cellulose nitrate layer which yields a visible image after exposure and processing

3.35
colour screen plate
glass sheet bearing a colour screen consisting of dyed elements in contact with a silver halide/gelatine layer which yields a visible image after exposure and processing

3.36
compact disc
CD
CD-ROM optical disc format on which the information layer is located at one surface of a substrate and the data can be read by an optical beam

NOTE Described in IEC 60908.

3.37
compact disc-recordable
CD-R
recordable optical disc in which information can be recorded to certain areas in compact disc format

NOTE 1 Information can be recorded one time and read many times.

NOTE 2 The term "compact disc-write once" (CD-WO) has also been used to describe this type of disc.

3.38
conditioning
exposure of a specimen to air at a given relative humidity and temperature until equilibrium is reached

3.39
conservation
examination and analysis, documentation and treatment of library or archive materials, artwork or objects to stabilize them chemically or strengthen them physically, prolonging their life in the original form

3.40
container
box, can or carton used for storage and shipping of recording materials

EXAMPLE The box into which a reel, cassette, cartridge, disc or shell is placed.

NOTE Reels, cassettes, cartridges or shells are not containers.

3.41
copy
reproduction of the information from a master

3.42
core
metal or plastic cylinder on which recording material is wound

cf. **hub** (3.84)

3.43
crazing
network of fine cracks on the surface of a print or film usually the result of environmental stresses on the surface layer

3.44
cupping
departure of film or paper from physical flatness characterized by the condition where the four corners of a rectangular sheet turn up but the edges do not

3.45
curl
departure of film, paper or magnetic tape from physical flatness with the tendency to curve into a cylindrical shape

3.46
cyan spots
defect that results when the ultraviolet absorber in an older technology chromogenic print crystallizes and permits the back-scattering of light

3.47
dark stability
ability of a print, negative or transparency to resist fading or staining to ambient environmental factors in the absence of light

3.48
daylight filter
optical filter or combination of filters that modifies the spectral power distribution of a light source to better represent some defined daylight spectrum

3.49
delamination
separation of a laminate into its constituent layers

3.50
dew point
temperature at which moisture begins to condense on a surface, corresponding to saturation for a given absolute humidity

cf. **relative humidity** (3.163)

EXAMPLE The more humid the air, the higher the dew-point temperature.

3.51
differential dimensional change
difference between the dimensional changes of the material in the two principal directions (length and width)

NOTE Polyester-based films frequently have maximum and minimum dimensional changes in directions other than the length or width. These can be determined by rotating and viewing the uncoated base between a pair of crossed polarizers. When the direction corresponding to either the maximum or minimum dimensional change is coincident with the optical axis of one polarizer, there is minimum light transmission through the base.

3.52
digital print
print where the image is printed from the digital domain

NOTE There is substantial confusion around the definition of this term by users, particularly in the consumer market where it may be taken to mean a print where the original image is produced or manipulated in the digital domain.

3.53
digital printing media
media used by colour hard copy printers

EXAMPLE Silver halide, thermal dye transfer (“dye sub”), inkjet, electrophotography, paper, plastic, canvas, fabric or ink receptive materials.

3.54
digital versatile disc
DVD
optical disc format in which one or more information layers are located between two substrates and the data can be read by an optical beam

NOTE Formerly called digital video disc.

3.55
dimensional change
⟨processing⟩ permanent dimensional change caused by photographic processing alone

NOTE This can be conventional wet chemical processing, vapour processing or heat processing. The dimensional change is measured after conditioning at the same relative humidity and temperature as used for the original measurement and is expressed as a percentage.

3.56
dimensional change
⟨processing and ageing together⟩ permanent dimensional change that occurs as a result of processing plus ageing of the processed material

NOTE It is measured after conditioning of the processed, aged film or paper at the same relative humidity and temperature as used for the original measurement and is expressed as a percentage.

3.57
dimensional hysteresis
difference in the absolute dimensions of a specimen in equilibrium with air at a given relative humidity, when conditioned from a higher relative humidity and when conditioned from a lower relative humidity

3.58
duplicate
reproduction of a master, retaining the same polarity and size

3.59
dye diffusion thermal transfer print
D2T2 print
digital print made by the thermally induced transfer of dry colourant from a donor sheet or ribbon to the surface of a specially coated substrate

NOTE This process is sometimes known as “dye sub”, short for "dye sublimation". This is a misnomer as the dyes melt to form a liquid which is transferred to the substrate rather than subliming through the vapour phase. The misnomer arises from a similarity to an earlier textile printing process.

3.60
electrophotographic print
digital print made from electrostatically charged toner particles or droplets

3.61
emulsion layer(s)
image or image-forming layer(s) of silver halide photographic films, papers and plates

3.62
encapsulation
sealing of all edges of a specimen that has been laminated on both front and back surfaces

NOTE Usually done by laminating with sheets that are larger in dimension than the specimen and then sealing at the overlaps.

3.63
encapsulation - irreversible
protective coating applied to both sides of a flat object such as paper or film and sealed at the edges which cannot be removed

NOTE Use of liquid coatings (liquid laminates) on two sides is not considered a form of encapsulation.

3.64
encapsulation - reversible
protective coating applied to both sides of a flat object such as paper or film and sealed at the edges which can be removed

3.65
enclosure
folder, envelope, sleeve or clam shell that is intended for physical protection against mechanical damage

3.66
end-of-life
time at which a film, print or digital file stored is no longer suited for its intended purpose

3.67
endpoint
defined measurable change in an image characteristic (such as density), often indicating the end of an ageing test

3.68
envelope
bag
enclosure that is sealed with adhesive, mechanically joined or heat-sealed on two edges with a bottom fold and one side open

3.69
extended-term storage conditions
storage conditions suitable for the preservation of recorded information having permanent value

3.70
ferrotyping
changes in surface gloss resulting from intimate contact with another surface, often associated with high humidity

NOTE The term **ferrotyping** is derived from a historical term associated with silver halide photography. It is a process used to produce a very high gloss surface on a silver halide print in which a damp print is placed in contact with a highly polished surface, such as chromium-plated steel, and dried under conditions of elevated temperature and pressure.

3.71
film base
plastic support for the emulsion, receiving or backing layers

3.72
fire-protective storage
facility designed to protect records against excessive temperatures, water and other fire-fighting agents and steam developed by insulation of safes or caused by the extinguishing of fires and collapsing structures

3.73
fire-resistant vault
fire-resistant vault as defined in appropriate national standards and regulations

3.74
flange
fixed or removable circular disc that is connected to the hub to make a reel for the purpose of protecting the roll of recording materials

cf. **reel** (3.160)

3.75
folder
single sheet that is folded, does not have adhesive seams and can be made from either paper or plastic

3.76
folding endurance
measure of fatigue resistance after multiple flexing

3.77
frost point
temperature to which moisture-laden air must be cooled for frost or ice formation

3.78
full-reversal processing
reversal photographic processing that consists of development, bleach, clear, reexposing and second development, followed by fixing and washing

3.79
gelatine plate, gelatine dry plate
glass sheet bearing a silver halide/gelatine layer which yields a visible image after exposure and processing

3.80
glass transition
reversible change in an amorphous polymer from or to a viscous or rubber condition from or to a hard and relatively brittle one

3.81
glass transition temperature
T_g
approximate mid-point of the temperature range over which **glass transition** takes place

NOTE 1 T_g can be determined readily only by observing the temperature at which a significant change takes place in a specific electrical, mechanical or other physical property.

NOTE 2 T_g can also be sensitive to the moisture content of the polymer.

3.82
graininess
high frequency density variation

NOTE ISO 13660:2001[2] contains the following numeric definition: “Aperiodic fluctuations in density at a spatial frequency greater than 0,4 cycles per millimetre in all directions”.

3.83
heads out
configuration of roll film or magnetic tape stored on its core or reel or in its cassette, such that the film or tape is positioned to play from the beginning of the recorded information

3.84
hub
metal or plastic cylinder on which recording material is wound

cf. **core** (3.42)

3.85
humidistat
device that senses the moisture content of the air for the purpose of controlling it

3.86
humidity coefficient of expansion
change in dimension per unit length per a 1 % change in the relative humidity at constant temperature

3.87
humidity expansion/contraction
dimensional change caused by the gain/loss of moisture as a result of changes in the relative humidity of the ambient air at constant temperature

3.88
humidity fastness
ability of a reflection print to resist changes in density or sharpness upon extended exposure to high or low relative humidity

3.89
hygrometer
instrument that measures the moisture content of a sample of air

3.90
information
data recorded and/or stored in a system

3.91
ink jet print
digital print made by the deposition of ink droplets

3.92
insulated record container
storage box designed to withstand elevated temperatures and conforming to national standards and regulations

3.93
insulated record containers (Class 150)
insulated record containers (Class 150) as defined in appropriate national standards and regulations

3.94
isoperm lines
lines of constant life plotted as a function of temperature and relative humidity

3.95
jacket
two transparent sheets separated by divider strips with single or multiple film channels (sleeves) made to hold single or multiple film images

3.96
just noticeable difference
the smallest detectable difference between a starting and secondary level of a particular sensory stimulus, usually preceded by a percent (commonly 50 %) indicating the percentage of trials for which that difference is noticed

3.97
lacquer
coating composition that is based on synthetic thermoplastic film-forming material dissolved in organic or aqueous solvent that dries primarily by solvent evaporation

NOTE Lacquers may include matting agents, plasticizers, cellulose derivative, acrylic polymer and solvents.

3.98
laminate
layer of material that goes over the top or bottom of a specimen

NOTE Usually water resistant to provide physical and/or ultraviolet (UV) light protection of the specimen during a weathering test.

3.99
laminate – film
clear polyester or vinyl layer applied using thermosetting, pressure-sensitive or contact adhesive to one or both surfaces of a print to improve durability

3.100
laminate – liquid
water-based, solvent-based or UV-curable liquid protective coating designed for use with prints, generally applied with roller machine or sprayed

3.101
lantern-slide plate
glass sheet bearing a silver halide/gelatine layer which yields a visible image after exposure and processing

NOTE 1 The image layer of a lantern-slide plate is usually protected with a cover glass, bound on all edges with adhesive tape, as this type of plate is viewed by projection.

NOTE 2 Albumen and colour-screen plates are also found as lantern slides.

3.102
leader
flexible plastic or paper strip which can be spliced to either end of a roll of recording material

3.103
leafing
multiple popped strand(s) in a magnetic-tape wind

cf. **stepped pack** (3.186)

3.104
length direction
direction of the film or paper parallel to its forward movement in the film or paper-making machine

NOTE This is also termed “grain” or “machine direction” in the case of papers.

3.105
life expectancy
LE
rating for the life expectancy of recording materials and associated retrieval systems

NOTE The number following the LE symbol is a prediction of the minimum life expectancy in years for which information can be retrieved without significant loss when stored at the conditions as defined in the relevant standards.

EXAMPLE LE-100 indicates that information can be retrieved after at least 100 years' storage.

3.106
lightfastness
ability of a reflection print or transparency to resist fading or staining upon extended exposure to light

3.107
lignin-free
paper or paperboard with a Kappa number of 7,0 or less, corresponding to a lignin concentration of approximately 1,0 % or less by mass

3.108
long-term preservation
the process of retaining information so that it remains useful for multiple generations, i.e. more than 100 years

3.109
loose pack
undesirable pack condition in a roll of recording material, such that the outer portion of the roll can be moved and tightened by pulling on the end

3.110
macroenvironment
atmospheric conditions (temperature, relative humidity and pollutants) in a large area in which records are kept

3.111
magnetic field intensity
magnitude of the magnetic field, in amperes per metre, at a point in space

3.112
mar resistance
the ability of a coating to resist permanent deformation or fracture, resulting from the application of dynamic mechanical force

NOTE It is directly related to the coating's ability to retain gloss in abraded areas.

3.113
matting agent
liquid that is applied to modify the optical characteristics of an assembly by reducing the gloss of a surface and that also alters the physical characteristics of this surface by increasing the surface roughness, reducing the susceptibility of the surface to stick to other surfaces

3.114
medium (media, pl)
material on which information is recorded

cf. **carrier** (3.25)

3.115
medium-term storage conditions
storage conditions suitable for the preservation of recorded information for a minimum of 10 years

3.116
microenvironment
atmospheric conditions (temperature, relative humidity and pollutants) inside a storage enclosure in which records are kept

3.117
MO disc
optical disc in which the information is recorded using magneto-optical technology in some specified format and which can be read many times and overwritten many times

3.118
moderately water resistant
⟨print⟩ exhibiting some change or damage by water but still considered usable for its intended application

NOTE The damage can manifest itself as slight media curl, partial delamination along an edge, or ring-like watermarks due to gloss changes or a minor amount of colourant migration. This damage can be mitigated by the rapid removal of the water (careful blotting, shaking off the water, etc.).

3.119
monochrome image
image with recording in one colour or one shade of hue

NOTE In the case of images within the scope of this International Standard, these images are often close to neutral in colour.

3.120
morphological changes
changes in the physical structure of the association of the molecules

3.121
mottle
non-uniform visual density variation

NOTE ISO 13660:2001[2] contains the following numerical definition “Aperiodic fluctuations of density at a spatial frequency less than 0,4 cycles per millimetre in all directions”.

3.122
natural ageing
changes in the characteristics of an image-bearing material that occur under typical use or storage conditions

cf. **ambient conditions** (3.9)

3.123
negative
photographic image in which the light and dark regions and colours are reversed, which, upon projection with transmitted light onto a silver halide sensitized print medium, will produce a positive image after processing

3.124
Newton's rings
faint coloured rings or fringe patterns formed by the interference between a direct and a reflected beam of light generated by two transparent surfaces in close contact

3.125
non-curl backing layer
layer, usually made of gelatin, applied to the side of the photographic film base opposite that of the emulsion layer, for the purpose of preventing curl

NOTE 1 It is comparable to the emulsion layer in thickness and is not removed in processing.

NOTE 2 Antihalation or other layers removed in processing are excluded from this definition.

3.126
not water resistant
⟨print⟩ easily damaged by contact with water, even when incidental (e.g. a water mist), and considered unsuitable for applications involving contact with water

NOTE Such damage can manifest itself as appreciable curl, delamination of the image layer, colourant bleed into non-imaged areas or from colour to colour, or image degradation (hue and gloss changes, surface marks, etc.).

3.127
ODC
optical disc cartridge
case containing an optical disc

3.128
open enclosure
enclosure that is intended for physical protection against mechanical damage, but is neither light-tight nor airtight

NOTE Such enclosures may be reels, cores, spools, cassettes, magazines, folders, envelopes, cartons, boxes, sleeves, transparency mounts or aperture cards.

3.129
optical density
density
degree of light absorption, reflection or scattering characteristics of a photographic image, expressed as the logarithm to the base 10 of the ratio of incident radiant flux to the transmitted, reflected or scattered flux

3.130
optical disc
disc that will accept and retain information in the form of marks or density modulations in a recording layer that can be read with an optical beam

3.131
outdoor weathering
actual placement of specimens outdoors in specific locations, often those of climatic extremes

NOTE This is differentiated from simulated weathering where instruments (weathering devices) are used to obtain very controlled conditions that simulate, to some degree, and generally accelerate, the outdoor weathering results. Use of such instruments is described in ISO 18930[3].

3.132
ozone fastness
ability of a film or print to resist fading or staining upon exposure to ozone

3.133
peel resistance
average force per unit test-specimen width, measured along the bond line, required to separate progressively the two members of a bonded test specimen under specified conditions of test, expressed in kilonewtons per metre of width

3.134
permanence
ability to remain chemically and physically stable over long periods of time

3.135
photo book
digital or analogue printed, bound book, typically including text and photos, as opposed to a photo album that consists of traditional photos

NOTE Each copy may be unique since the photo book production process, unlike traditional offset printing, is capable of economically producing single copies.

3.136
photo gift
photographic image produced on a specialized substrate that gives the image additional utility

NOTE Photo gifts include, but are not limited to, mouse pads, t-shirts, ceramic mugs, jewellery and book or scrapbook album covers.

3.137
photographic enclosure
enclosure in close or direct contact with photographic plates, films or papers such as reels, cans, bags, folders, sleeves (sheaths), jackets, envelopes, window mounts or mats, slide mounts, cartons, boxes and aperture cards

NOTE Ideally such materials will pass a photographic activity test as defined in ISO 18916[4].

3.138
photographic film
material consisting of one or more radiation-sensitive layers coated on transparent or translucent plastic that yields a visible image

3.139
photographic layer
radiation-sensitive coating that yields an image after exposure to radiant flux

NOTE 1 In addition to the above definition, this term is now sometimes used to describe the image-receiving layer for printed images.

NOTE 2 In the case of radiation-sensitive coatings, exposure is usually followed by processing to generate the image.

3.140
photographic plate
material consisting of one or more radiation-sensitive layers coated on a rigid support, such as glass or metal, that yields a visible image

3.141
photographic print
material consisting of one or more radiation-sensitive layers coated on paper, paper with a pigmented layer, paper with a resin layer or on an opaque support, that yields a visible image

NOTE In addition to the above definition, this term is now also used to describe all manner of printed photographic images.

3.142
photo-safe
material that meets the requirements of ISO 18902 such that it will not accelerate the natural ageing of photographic prints or films

NOTE Material that only meets the pH requirements or passes the photographic activity test described in ISO 18916 is not necessarily photo-safe due to other factors that may be harmful to images and bases. These factors can include poor workmanship, poor design features and harmful chemical reactions not predicted by pH or PAT alone. In addition, some materials are themselves physically and chemically unstable and thus will not last long, even though they may not initially be reactive.

3.143
plasticizer
substance added to a material to either increase softness, flexibility, water resistance or extensibility

3.144
pocket-style page
enclosure made from two pieces of plastic sheeting heat-sealed or ultrasonically welded along three or four edges and at various points across the sheets to create pouches (pockets) that have slit openings to allow the insertion of a photograph

3.145
poly (ethylene terephthalate) base
polyester base for recording materials composed mainly of a polymer of ethylene glycol and terephthalic acid

3.146
polyester base
base for recording materials composed mainly of a polymer of ethylene glycol and terephthalic acid (also referred to as polyethylene terephthalate), or a polymer of ethylene glycol and 2,6 naphthalene dicarboxylic acid (also referred to as polyethylene naphthalate)

3.147
polyurethane coating
liquid coating formed of an isocyanate and polyfunctional alcohol, which solidifies into a flexible coating with good impact resistance

3.148
popped strand
lateral displacement of a single strand or wrap of magnetic tape extending beyond the plane of the tape pack

cf. **leafing** (3.103) and **stepped pack** (3.186)

3.149
precision
measure of repeatability which is the degree of closeness of a series of measurements under the same operating conditions

NOTE The term **accuracy** should not be used for precision.

3.150
preconditioning
establishment of a moisture content history by conditioning the specimen at a relative humidity above or below the conditioning relative humidity used for measurement

NOTE The purpose of preconditioning is to control the effects of hysteresis.

3.151
preservation
use of procedures, materials and environmental conditions that maintain and protect images in their current state, minimizing further changes, damage or deterioration, that is associated with maintaining library, archival or museum materials for use either in their original form or in some other format

NOTE **Preservation** is considered a broader term than **conservation**.

3.152
printing density
optical density of a processed photographic image in which the incident radiant flux has the same spectral energy distribution as the printer light source and the transmitted density is evaluated by a receiver having the same spectral response as the print material

3.153
print-through
unwanted transfer of a magnetic field and its signal from one tape lap to another within a roll of magnetic tape

3.154
projection density
optical density of a processed photographic image in which the angular distributions of the incident and transmitted radiant flux are equal and specified

3.155
protective enclosures
impermeable sealed containers that may also have to be opaque, used for protection from outside factors such as reactive gases and moisture, including changes in relative humidity, and from light for certain kinds of products

NOTE Such enclosures may be taped cans and sealed envelopes.

3.156
raw photographic material
photographic material that has not been exposed to actinic radiation and has not been processed

3.157
read-only-medium compact disc
optical disc to which information is transferred during manufacture to certain areas in the compact disc format and can be read many times

NOTE Described in ISO/IEC 10149[5].

3.158
reciprocity law failure
non-equivalence in results between a long exposure/low-intensity experiment and its counterpart with an equivalent intensity-time product where exposure time is short and intensity is high

3.159
red print
defect resulting from a thermal reaction between the cyan dye and other components of the cyan layer in a chromogenic print

3.160
reel
spool
metal or plastic hub or core with flange(s) (protective sides) onto which recording material is wound

3.161
reflection print
positive photographic image intended to be viewed with reflected light

3.162
reflection print support
white, opaque support for the image-forming and auxiliary layers of a photographic print intended for viewing by reflected light

3.163
relative humidity
RH
ratio, defined as a percentage, of the existing partial vapour pressure of water to the vapour pressure at saturation at a given temperature

NOTE It is usually, but not always, equal to the percentage of the amount of moisture in the air to that at saturation.

3.164
resin
solid thermoplastic organic substance, originating in the secretion of certain plants or insects, which is flammable, non-conductive of electricity, breaks with a conchoidal fracture (when hard) and dissolves in certain specific organic solvents, but not water

NOTE This definition refers to natural resin. A synthetic resin is a synthetic substance physically similar to natural resin.

3.165
retrievability
ability to access information as recorded

3.166
reversible mounting
use of methods and materials for preservation framing that may be undone without harm to the mounted item using non-invasive procedures

NOTE An important goal of conservation treatment is the ability to undo any mounting process with no change to the original.

3.167
safety photographic film
photographic film which passes the ignition-time test and the burning-time test defined in ISO 18906

3.168
safety poly (ethylene terephthalate) base
polyester film base composed mainly of a polymer of ethylene glycol and terephthalic acid

3.169
scratch
form of abrasion, caused by a sharp point or edge

3.170
scuff
form of abrasion, leading to a change in gloss

3.171
seam
area where an enclosure has an adhesive bond in its structure

3.172
shell
cassette or cartridge housing for magnetic tape

3.173
shellac
resinous secretion of the lac insect that has been purified and dissolved in alcohol

NOTE Shellac has been used as a traditional coating on photographs; it is also applied as a liquid varnish to restrict the migration of wood resins for sealing bare wood in framing.

3.174
silver halide print
photographic print made from material sensitized with silver halide and processed to produce an image

3.175
sleeve or sheath
enclosure with one or more seams and both ends open

3.176
slide mount
structure to retain a film for slide projection

3.177
slip agent
component added to plastic material in order to reduce the coefficient of friction

3.178
slot
space or slit in the hub or flange surface

3.179
smudge
tendency of an image to smear or streak onto adjacent areas when rubbed, which involves the re-deposition of abraded material

3.180
splice
union of two pieces of recording material to form a single piece

3.181
splicing tape
paper or plastic strip coated with a thermal or pressure-sensitive adhesive, used in splicing

3.182
spoking
deformations in a roll pack that appear radially outward and that disrupt the circular nature of the wind