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Imaging materials — Permanence — Vocabulary

Matériaux pour l'image — Permanence — Vocabulaire

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Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
Bibliography **30**

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Foreword

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

This third edition cancels and replaces the second edition (ISO 18913:2012), which has been technically revised.

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Introduction

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

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Imaging materials — Permanence — Vocabulary

1 Scope

This document establishes a vocabulary of terms and definitions used in respect of 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, refer to industry standards. However, in some cases the definition of a term is still evolving and/or is used by different user groups in different ways. In this case a definition fit for use in Imaging Materials – Permanence work is given and a note to this effect is included.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

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Document Preview
ISO 18913:2021
https://standards.iteh.ai/catalog/standards/iso/24b6d1fc-7316-42e7-b4c9-e9e3925661b8/iso-18913-2021

3.1
abrasion
loss of material from a surface or deformation of a surface, with changes in gloss, colour, or density, due to frictional forces as a result of rubbing

Note 1 to entry: Surface deformations can result in changes in gloss and colour.

Note 2 to entry: See also *mar resistance* (3.122), *rub resistance* (3.186), *scuff* (3.190), *smudge* (3.201), and *wet rub* (3.238).

3.2
absolute humidity
mass of water vapour per unit volume of wet gas

Note 1 to entry: It is a measure of the amount of water present as part of the chemical analysis of the space, i.e., how much water is available for chemical activity.

Note 2 to entry: See also *dew point* (3.56) and *relative humidity* (3.181).

3.3
accelerated ageing
procedure to simulate normal ageing process by subjecting a product to *stresses* (3.216) that are more severe or more frequent than normal environmental or operational stresses, thus shortening the test period relative to the normal ageing period

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3.4
acid-free adhesive
adhesive material that does not release acidic species, such that the cold extraction pH is equal to or greater than the reference water minus 0,5 and less than 10,0

Note 1 to entry: ISO 18902 provides a cold extraction pH test method, which may be used to establish a specification for acid-free adhesive materials for intended photographic applications.

Note 2 to entry: An adhesive may contain acids, but the cold extraction pH test only measures acidic species released into water to determine pH.

3.5
acid-free paper or paperboard
paper or paperboard materials that do not release acidic species, such that the cold extraction pH is equal to or greater than the reference water minus 0,5 and less than 10,0

Note 1 to entry: ISO 18902 provides a cold extraction pH test method, which may be used to establish a specification for acid-free or alkaline paper and paperboard materials for intended photographic applications.

Note 2 to entry: A paper or paperboard may contain acids, but the cold extraction pH test only measures acidic species released into water to determine pH.

3.6
album
binder or book structure having front and back covers in which pages are bound along one edge either by plastic straps, gluing, sewing, metal posts or rings, and in which photographs are attached and related contents may be included

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3.7
albumen plate
glass sheet bearing a silver halide/albumen layer which yields a visible image after exposure and processing

3.8
ambient conditions
conditions of the affecting environment

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Note 1 to entry: For *preservation* (3.164) purposes these may or may not be the same as the *storage environment* (3.214).

3.9
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 1 to entry: The processed *negative* (3.134) silver image appears as a positive when backed by a dark field.

3.10
analogue print
print where the image is printed from the analogue domain

Note 1 to entry: In graphic printing, the marking information of an analogue print is generated by means of an off-line produced forme with which the ink is printed on the media. Examples of traditional forme-based ink printing as defined in ISO 12637-1 are flexographic, letterpress, letterset, (offset) lithographic, gravure, intaglio, pad-transfer printing, screen, and stencil printing.

Note 2 to entry: Ambiguous use also for chromogenic (silver-halide) print, where image information is exposed conventionally ("analogue") through a film *negative* (3.134) or positive, or actual scene images are exposed through camera lenses.

Note 3 to entry: See also *digital print* (3.58).

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3.11
anti-blocking agent
additive or component which prevents *sticking* (3.211) or fusing of adjacent surfaces

EXAMPLE Talc, silicates or matte beads.

Note 1 to entry: See ISO 18902.

Note 2 to entry: See *blocking* (3.20)

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* (3.80) of a cassette that is used to facilitate threading of magnetic tape on the *hub* (3.46) and inspection of the *wind* (3.240)

3.14
archival
medium (3.124) that can be expected to preserve images at a stated level of quality or usefulness for a specified extended period of years

3.15
Arrhenius plot
plot of the logarithm of the time for a given change in a characteristic proportional to the reaction rate versus the reciprocal of the temperature expressed in K (Kelvin)

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Note 1 to entry: 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.

Note 2 to entry: Changes in characteristics may include dye loss, tensile strength change, D_{min} (3.55) yellowing, etc.

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3.16
artificial accelerated weathering
artificial weathering
laboratory weathering
exposure of a material in a laboratory weathering device to conditions which may be cyclic and may be intensified compared with conditions encountered in outdoor or in-service exposure

Note 1 to entry: The purpose of artificial accelerated weathering is to accelerate changes in the material that can correspond to changes observed after long-term, continuous, natural or end-use exposure.

3.17
base
support in a *recording material* (3.176) on which the image receiving/recording layers or magnetic layer (and, if necessary, the back layer) are coated

Note 1 to entry: *Substrate* (3.218) is the preferred term for the physical support of a receiving layer. The term 'base' should be used only in reference to pH.

3.18
blister
localized *delamination* (3.54) of a multilayer assembly that looks like a bubble

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3.19
block error rate
BLER
ratio of erroneous blocks to total blocks on an *optical disc* (3.142) measured at the input of the first (C1) decoder (before any error correction is applied)

Note 1 to entry: 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
undesired adherence between sheets of printed material

Note 1 to entry: Blocking can occur under a variety of pressures, temperatures, and humidity conditions, while in storage or in use.

Note 2 to entry: Blocking effects include *delamination* (3.54), paper splitting, tearing, gloss changes, physical image transfer, permanent bonding to adjacent materials and prints, and edge deformation.

Note 3 to entry: See also *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* (3.32)

Note 1 to entry: Be aware that "blue print" is not to be confused with "blueprint".

Note 2 to entry: A common cause in the case of a blue print is when a print has been lacquered in a very humid environment or was not thoroughly dried before lacquering.

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3.22
book printing
printing of books and publishing of monographs (reference books, photo-books, comic, paperback, textbooks and directories)

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Note 1 to entry: See also *commercial printing* (3.38), *newspaper and periodical printing* (3.135), *package printing* (3.146), *sign printing* (3.195), and *transactional and direct mail printing* (3.228).

3.23
brittleness
property of a material that causes it to crack or break when deformed by bending or flexing

3.24
buffered
<paper> characteristic of paper or paperboard materials containing a certain amount of alkali reserve to neutralize future attacks by acidic species, either from atmospheric pollutants or released from material degradations in the ageing process

Note 1 to entry: See ISO 10716 for a standard test method to determine the amount of alkaline reserve in paper materials.

Note 2 to entry: See ISO 18902 for specifications for alkaline reserve in paper and paper boards for albums, framing, and storage materials.

3.25
can
<recording media> metal or plastic *container* (3.44) for a roll of *recording material* (3.176), such as photographic film or magnetic tape

3.26
carrier
<recording media> *medium* (3.124) upon which information is recorded

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3.27
cartridge
<recording media> housing for a roll of recording media, such as photographic film or magnetic tape, wound on a single *hub* (3.46) or *reel* (3.178)

Note 1 to entry: The term "cartridge" is also used in some cases to describe a colorant (e.g., ink, toner) container.

Note 2 to entry: See also *cassette* (3.28).

3.28
cassette
<recording media> housing for a roll of *recording material* (3.176), such as photographic film or magnetic tape, whose ends are attached to two hubs or reels

Note 1 to entry: See also *cartridge* (3.27).

3.29
cellulose-acetate base
base for *recording materials* (3.176) composed mainly of cellulose esters of acetic acid

3.30
cellulose-ester base
base for *recording materials* (3.176) composed mainly of cellulose esters of acetic, propionic, or butyric acid, or mixtures thereof

3.31
cellulose-nitrate base
base for *recording materials* (3.176) composed mainly of cellulose esters of nitric acid with a *plasticizer* (3.157) such as camphor

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3.32
chromogenic print
gelatin print in which the colour image is composed of cyan, magenta, and yellow dye layers formed by a coupling reaction between the dye couplers (dye precursors) in the *emulsion layers* (3.69) as a result of silver development

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Note 1 to entry: During development of exposed silver halide, the resulting oxidized colour developer molecules will react with the dye couplers (dye precursors, typically incorporated in the emulsion layers during manufacture but could be added during development), forming microdroplets of cyan, magenta, and yellow dyes. The silver image is then bleached and dissolved via a bleach-fix bath and then is washed away, and the colour image remains.

Note 2 to entry: To further distinguish chromogenic prints, note that in chromolytic prints, which use the silver dye bleach process typical for positive printing (as in Cibachrome and Ilfochrome), the dyes are already incorporated during the production process and present before exposure. During development the latent silver image is processed to develop silver. Next the silver dye bleach reaction destroys the dye into colourless products and dissolves the silver. Finally, the layer sequence in chromolytic prints is different from that of chromogenic prints, the chromolytic dye layers top to bottom are yellow, magenta, cyan.

Note 3 to entry: See also *blue print* (3.21), *cyan spots* (3.50), *red print* (3.177), and *yellow print* (3.244).

3.33
class 100 000 clean room
controlled environment in which the level of airborne contaminates meets standard requirements

Note 1 to entry: See ISO 14644-1 for the requirements to meet.

3.34
cockle
deformation of a sheet of paper due to unequal shrinkage giving it a planar distortion in the form of waves or ripples

Note 1 to entry: See also *edge fluting* (3.67) and *waviness* (3.236).

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