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Information technology — Office equipment — Vocabulary for office colour equipment

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 28, *Office equipment*.

This second edition cancels and replaces the first edition (ISO/IEC 17823:2015), which has been technically revised.

The main changes are as follows:

— new terms and definitions have been added;

— references have been updated.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

Introduction

Technical colour terms have been published in various fields of standards such as colour photography, graphic technology printing and computer graphics. However, no standard colour terms have been published for office equipment.

As a result, misunderstandings between users and colour office equipment providers can occur when terms are interpreted differently.

The purpose of this document is to provide terminology for use by office equipment providers to help customers use their colour equipment effectively.

Information technology — Office equipment — Vocabulary for office colour equipment

1 Scope

This document provides definitions for colour terms used with office equipment, in particular for use with colour scanning and printing devices that have digital imaging capabilities, including multi-function devices.

This document is not intended to replace terms and definitions published in documents or user interfaces issued or created by manufacturers.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

ISO and IEC maintain terminology 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/

3.1
colour balance
adjustment of colour channel gains or processing

3.1.1
grey balance
set of tone-values for cyan, magenta and yellow that are expected to appear as an achromatic grey under specified *viewing conditions* (3.12.11) when printed using the specified printing conditions

Note 1 to entry: There are three practical definitions and one theoretical definition for grey:

a) practical definitions:

   1) colour having the same CIELAB a* and b* values as the print substrate;

   2) colour that has the same CIELAB a* and b* values as a half-tone *tint* (3.16.2) of similar L* value printed with black ink;

   3) functional (linear or nonlinear) combination of both.

b) theoretical definition:

   1) colour that the CIELAB a* and b* values both equal to 0.

[SOURCE: ISO/TS 10128:2023, 3.4, modified — Note 1 to entry has been modified.]

3.2
black

3.2.1
composite black
black printed with multiple *colourants* (3.9)

3.2.2
pure black
black generated only in black *colourant* (3.9) in a printing device

3.2.3
rich black
black generated by a mixture of black *colourant* (3.9) and other colourants in a printing device

3.3
calibration
set of operations that establish, under specified conditions, the relationship between values of quantities indicated by a measuring instrument or measuring system, or values represented by a material measure or a reference material, and the corresponding values realized by standards

[SOURCE: ISO 14807:2001, 3.11]

3.4
colour appearance
aspect of visual perception through which an object is perceived to have a colour with certain attributes

[SOURCE: CIE S 017/E:2020, 17-22-058]

3.4.1
brightness
attribute of a visual perception according to which an area appears to emit, transmit or reflect, more or less light

[SOURCE: CIE S 017/E: 2020, 17-22-059]

3.4.2
colourfulness
attribute of a visual perception according to which the perceived colour of an area appears to be more or less chromatic

[SOURCE: IEC 60050-845:2020, 845-22-072, modified — Notes to entry have been removed.]

3.4.3
highlight colour
adjustment of colour channel gains or processing

3.4.4
metamerism
phenomenon perceived when two specimens have the same colour under the lighting of an illuminant, but different spectral reflection and transmission curves

[SOURCE: ISO 4618:2023, 3.154]

3.4.5
vividness
attribute of colour used to indicate the degree of departure of the colour from a neutral black colour

3.5
colour difference
perceived dissimilarity between two colour stimuli

[SOURCE: CIE S 017/E: 2020, 17-22-041]

3.6
colour encoding

3.6.1
colour palette
fixed set or range of available colours that can be selected

3.6.2
full colour
representation of colours with 3-channel or more, and each channel has 8-bit or more information

Note 1 to entry: Each channel may have 12-bit or 16-bit. In "commercial printing", there are multi-channel colour reproductions such as “Cyan(C), Magenta(M), Yellow(Y), black(K), Orange(O) and Green(G)”.

3.6.3
indexed colour
palette colour
colour selection scheme in which the colour index is used to retrieve colour values from a colour table

[SOURCE: ISO/IEC 8632-1:1999, 4.1.62, modified — The term "palette colour" has been added.]

3.6.4
metallic colour
colour associated with polished metal, the *brightness* (3.4.1) of which varies with the angle of the incident light and the viewing angle

Note 1 to entry: Typically, metallic colour cannot be reproduced well by mixture of device *process colours* (3.6.7).

3.6.5
multi colour
multi-colour
additional colour(s) other than device *process colours* (3.6.7) used in printing process that enhance(s) colour image quality

Note 1 to entry: Typically, complementary colours of process colours such as red, green, violet are used to expand *colour gamut* (3.7.2).

Note 2 to entry: Sometimes light *colourants* (3.9) such as light cyan, light magenta, light black or grey are used to improve image granularity and colour gamut in highlight.

3.6.6
named colour
colour with associated colour expression specification

3.6.7
process colour
colour that is the outcome of a colour separation operation

Note 1 to entry: A process colour typically requires one or more printing units and process inks to be reproduced.

Note 2 to entry: It is typically cyan, magenta, yellow, black for four-colour printing.

[SOURCE: ISO/TS 19303-1:2020, 3.10, modified — Note 2 to entry has been added.]

3.6.8
special colour
specific colour of single *colourant* (3.9) designated, that cannot be reproduced by mixture of device *process colours* (3.6.7)

3.6.9
spot colour
colour of single *colourant* (3.9), identified by name, the printing tone-values of which are specified independently from the colour values specified in a colour coordinate system

[SOURCE: ISO 12639:2004, 4.1.10, modified — The word “colour” is added.]

3.7
colour management
communication of the associated data required for unambiguous interpretation of colour content data, and application of colour data conversions, as required, to produce the intended reproductions

[SOURCE: ISO 15076-1:2010, 3.1.11, modified — Notes to entry have been removed.]

3.7.1
characterization
process of relating device-dependent colour values to device-independent colour values

Note 1 to entry: Adapted from ISO 12637-2:2008, 2.7.

3.7.2
colour gamut
volume, area or solid in a *colour space* (3.8), consisting of all those colours that are either one of the following:

a) present in a specific scene, artwork, photograph, photomechanical, or other reproduction;

b) capable of being created using a particular output device and/or medium

Note 1 to entry: In reproduction and media applications, only the volume or solid in colour space is regarded as colour gamut. In applications such as signal lighting, the colour gamut is an area.

[SOURCE: CIE S 017/E: 2020, 17-32-007]

3.7.3
colour gamut boundary
surface determined by a *colour gamut's* (3.7.2) extremes

[SOURCE: ISO/IEC TR 29186:2012, 3.3]

3.7.4
gamut boundary descriptor
GBD
overall way of approximately describing a *colour gamut boundary* (3.7.3)

[SOURCE: ISO/IEC TR 29186:2012, 3.4]

3.7.5
gamut mapping
mapping of the *colour space* (3.8) coordinates of the elements of a source image to colour space coordinates of the elements of a reproduction to compensate for differences in the source and output medium *colour gamut* (3.7.2) capability

Note 1 to entry: The term "gamut mapping" is somewhat more restrictive than the term "colour rendering" because gamut mapping is performed on colourimetry that has already been adjusted to compensate for viewing condition differences and viewer preferences, although these processing operations are frequently combined in reproduction and preferred reproduction models.

[SOURCE: ISO 22028-2:2013, 3.14]

3.7.6
ICC
International Color Consortium
industry association formed to develop standardized mechanisms for *colour management* (3.7)

[SOURCE: ISO 15930-3:2002, 3.9]

3.7.7
ICC profile
file format of the *International Color Consortium* (3.7.6), used to store transforms from one colour encoding to another

[SOURCE: ISO 22028-1:2016, 3.24, modified — Example has been removed from the definition.]

3.7.8
print settings profile
digital file that is or contains an *International Color Consortium* (3.7.6) output profile along with *colourant settings* (3.21.1) and optional, additional metadata

[SOURCE: ISO/IEC 22954:2022, 3.10]

3.7.9
rendering intent
style of mapping colour values from one image description to another

[SOURCE: ISO 15076-1:2010, 3.1.27, modified — Note 1 to entry has been removed.]

3.8
colour space
geometric representation of colours in space

Note 1 to entry: A colour space is usually of three dimensions.

[SOURCE: IEC 60050-845:2020, 845-23-041]

3.8.1
colour space encoding
digital encoding of a *colour space* (3.8), including the specification of a digital encoding method, and a colour space value range

Note 1 to entry: Multiple colour space encodings may be defined based on a single colour space where the different colour space encodings have different digital encoding methods and/or colour space value ranges. For example, 8-bit sRGB and 10-bit bg-sRGB are different colour space encodings based on a particular additive RGB colour space.

[SOURCE: ISO 22028-1:2016, 3.14]

3.8.2
device-dependent colour space
colour space (3.8) defined by the characteristics of a real or idealized imaging device

Note 1 to entry: Device-dependent colour spaces having a simple functional relationship to CIE colourimetry can also be categorized as colourimetric colour spaces. For example, additive RGB colour spaces corresponding to real or idealized CRT displays can be treated as colourimetric colour spaces.

[SOURCE: ISO 22028-1:2016, 3.17, modified — The spelling of the word colorimetry has been changed to colourimetry and the spelling of the word colorimetric has been changed to colourimetric.]

3.8.3
device-independent colour space
colour coordinate system defined in terms of the amounts of visual stimuli colour capabilities independent of the specific device characteristics

[SOURCE: ISO 12637-2:2008, 2.47]

3.9
colourant
physical substance such as ink or toner which is used to produce a colour

Note 1 to entry: The term “colourant” sometimes means dye or pigment component of toner or ink.

[SOURCE: ISO 19302:2018, 3.2, modified — Definition has been shortened and Note 1 to entry has been added.]

3.9.1
colourant set
identifier for *colourants* (3.9) having unique reproduction characteristics

[SOURCE: ISO/IEC 22954:2022, 3.7, modified — Note 1 to entry has been removed.]

3.9.2
fluorescent toner
fluorescent ink
toner or ink that absorbs optical radiation at particular wavelengths and emits optical radiation at longer wavelengths

Note 1 to entry: Sometimes it is called "neon toner/ink", such as "neon yellow" for "fluorescent yellow".

3.10
daylight illuminant
D illuminant
illuminant having the same or nearly the same relative spectral distribution of the radiant flux as a phase of daylight

[SOURCE: IEC 60050-845:2020, 845-23-020]

3.11
dynamic range
difference between peak white and black level

[SOURCE: ISO 22493:2014, 4.7.2]

3.12
environment

3.12.1
adapted white
colour stimulus that an observer who is adapted to the *viewing environment* (3.12.12) would judge to be perfectly achromatic and to have a luminance factor of unity, i.e. absolute colourimetric coordinates that an observer would consider to be a perfect white diffuser

Note 1 to entry: The adapted white may vary within a scene.

[SOURCE: ISO 22028-1:2016, 3.2, modified — The spelling of the word colorimetric has been changed to colourimetric.]

3.12.2
glare
discomfort or impairment of vision experienced when parts of the visual field are excessively bright in relation to the *brightness* (3.4.1) of the general surroundings to which the eyes are adapted

[SOURCE: ISO 11064-6:2005, 3.7]

3.12.3
image surround
characteristics of the field surrounding the image being viewed, filling the field of vision

[SOURCE: ISO/IEC TR 29186:2012, 3.7, modified —Notes to entry have been removed.]

3.12.4
measurement condition M0
M0
standard measurement condition using incandescent lamp with undefined UV content

Note 1 to entry: Measurement condition is defined in ISO 13655.

3.12.5
measurement condition M1
M1
standard measurement condition using D50 including UV content

Note 1 to entry: Measurement condition is defined in ISO 13655.

3.12.6
measurement condition M2
M2
standard measurement condition using D50 excluding UV content

Note 1 to entry: Measurement condition is defined in ISO 13655.

3.12.7
measurement condition M3
M3
standard measurement condition using D50 excluding UV content and polarized

Note 1 to entry: Measurement condition is defined in ISO 13655.

3.12.8
surface colour
colour perceived as belonging to a surface from which the light appears to be diffusely reflected or radiated

[SOURCE: IEC 60050-845:2020, 845-22-043]

3.12.9
surround
area adjacent to the border of an image, which, upon viewing the image, can affect the local state of adaptation of the eye

[SOURCE: ISO 3664:2009, 3.16, modified — Note 1 to entry has been removed.]

3.12.10
veiling glare
light, reflected from an imaging medium, that has not been modulated by the means used to produce the image

[SOURCE: ISO/IEC TR 29186:2012, 3.5, modified — Notes to entry have been removed.]

3.12.11
viewing conditions
description of the surrounding environmental conditions during the process of viewing

[SOURCE: ISO/TS 18173:2005, 2.28]

3.12.12
viewing environment
environment in which something is viewed

[SOURCE: ISO/IEC TR 21565:2018, 3.1]

3.12.13
viewing flare
veiling glare (3.12.10) that is observed in a *viewing environment* (3.12.12) but not accounted for in radiometric measurements made using a prescribed measurement geometry

[SOURCE: ISO/IEC TR 29186:2012, 3.6, modified —Note 1 to entry has been removed.]

3.13
grey

3.13.1
composite grey
grey printed with multiple *colourants* (3.9)

3.13.2
greyscale
image representation in which each pixel is defined by a single sample of colour information, representing overall luminance (on a scale from black to white), and optionally an alpha sample (in which case it is called greyscale with alpha)

[SOURCE: ISO/IEC 15948:2004, 3.1.21]

3.13.3
pure grey
grey generated only in black *colourant* (3.9) in a printing device

3.14
luminance

3.14.1
luminance ratio
ratio of the maximum luminance to the minimum luminance that is either present in a specific scene, artwork, photograph, photomechanical, or other reproduction or is capable of being created using a particular output device and medium

[SOURCE: ISO 22028-1:2016, 3.28]

3.15
measuring instrument

3.15.1
spectrophotometer
optical instrument that measures spectral transmittance or reflectance

[SOURCE: ISO 17861:2014, 3.5, modified — Note 1 to entry has been removed.]

3.15.2
spectroradiometer
instrument for measuring radiometric quantities in narrow wavelength intervals over a given spectral region

[SOURCE: IEC 60050-845:2020, 845-25-007]

3.16
mixture of colour

3.16.1
colour shade
variation of the chroma of an image colour

3.16.2
tint
colour made by varying the amount of a single *colourant* (3.9)

3.16.3
tone
colour made by varying the amount of a single *colourant* (3.9)

3.17
monochrome

3.17.1
monochrome printer
printer that is only capable of printing with only one *colourant* (3.9) which is black

3.17.2
monochrome image
image perceived as achromatic colour

Note 1 to entry: Colour images in a single hue are usually described as monochromatic images.

Note 2 to entry: Sometimes monochrome images are described as achromatic images.

[SOURCE: ISO/IEC 24790:2017, 3.25, modified — Notes to entry have been added.]

3.18
output form of image

3.18.1
hardcopy
representation of an image on a substrate which is self-sustaining and reasonably permanent

[SOURCE: ISO 3664:2009, 3.4, modified — The example has been removed.]

3.18.2
softcopy
representation of an image produced using a device capable of directly representing different digital images in succession and in a non-permanent form

Note 1 to entry: The most common example is a monitor.

[SOURCE: ISO 3664:2009, 3.14]

3.19
optical phenomena

3.19.1
flare
light falling on an image, in an imaging system, which does not emanate from the subject point

Note 1 to entry: *Veiling glare* (3.12.10) is also sometimes referred to as flare.

[SOURCE: ISO 12231-1:2020, 3.5, modified — Examples deleted from Note 1 to entry and Note 2 to entry has been removed.]

3.19.2
gloss
mode of appearance by which reflected highlights of objects are perceived as superimposed on the surface due to the directionally selective properties of that surface

[SOURCE: ISO 8254-1:2009, 3.1]

3.19.3
transparency
physical property of allowing the transmission of light through a material

Note 1 to entry: A material with high transparency is one with low opacity.

Note 2 to entry: Transparency is the extreme value of high translucency.

Note 3 to entry: A transparent material allows light to pass through undiminished, while a negligible portion of the transmitted light is scattered.

[SOURCE: ISO/TR 28642:2016, 3.9]

3.19.4
transparent colour
attribute that signifies that the underlying image (if any) shows through

[SOURCE: ISO 12639:2004, 4.1.14, modified — Note 1 to entry has been removed.]

3.20
print medium
material or sets of materials to be loaded into a printer and printed on

Note 1 to entry: The plural version of this term is print media.

[SOURCE: ISO/IEC 22954:2022, 3.9]

3.20.1
roll medium
medium in roll form

[SOURCE: ISO/IEC 22954:2022, 3.13]

3.20.2
sheet medium
medium in rectangular sheet form that can be flexible, semi-rigid, or rigid

[SOURCE: ISO/IEC 22954:2022, 3.14]

3.21
print settings

3.21.1
colourant setting
setting related to *colourant* (3.9) restrictions or other colourant-related options as typically set in *printer controllers* (3.22)

[SOURCE: ISO/IEC 22954:2022, 3.8]

3.21.2
print mode
mode of printing that usually implies some specific printer resolution and/or number of passes

[SOURCE: ISO/IEC 22954:2022, 3.11]

3.22
printer controller
hardware, firmware and software that collectively control a printer, including managing colour

[SOURCE: ISO/IEC 22954:2022, 3.12]

3.23
solid colour
colour printed in an area with a maximum coverage of a *colourant* (3.9)

3.23.1
additive primary
component used for adding light in colour mixtures, generally red, green and blue

3.23.2
primary colour
unitary colours from which all other colours are created (in additive and subtractive colour theory)

Note 1 to entry: See Annex B for a detailed explanation of "primary colours".

[SOURCE: ISO 12637-2:2008, 2.99]

3.23.3
secondary colour
colours to be defined by a mixture of two *primary colours* (3.23.2) except black

Note 1 to entry: See Annex B for a detailed explanation of "primary colours" and "secondary colours".

[SOURCE: IEC 61966-7-1:2006, 3.11, modified — Note 1 to entry has been modified.]

3.23.4
subtractive primary
component used for removing light in colour mixtures, generally cyan, magenta and yellow

3.24
test pattern
specified arrangement of printable objects designed to test a particular aspect of a printing system

[SOURCE: ISO/IEC 29112:2018,3.1.39, modified — "[test elements (3.1.37)]" has been deleted.]

3.25
tone reproduction
relationship between data in the colour digital image file which are intended to reproduce the images of primary, secondary and achromatic colours and the CIE 1976 lightness values of reflective prints actually reproduced

[SOURCE: IEC 61966-7-1:2006, 3.14]

3.25.1
gamma correction
signal processing operation that changes the relative signal levels

Note 1 to entry: Gamma correction is performed, in part, to correct for the nonlinear light output versus signal input characteristics of the display. The relationship between the light input level and the output signal level, called the camera opto-electronic conversion function (OECF), provides the gamma correction curve shape for an image capture device.

Note 2 to entry: The gamma correction is usually an algorithm, lookup table, or circuit which operates separately on each colour component of an image.

[SOURCE: ISO 12233:2023, 3.7]

3.25.2
optical density
negative logarithm to the base 10 of the *reflectance factor* (3.25.3), measured using a 0/45-degree geometry, Illuminant A and ISO visual density *calibration* (3.3) as specified in ISO 5-1, ISO 5-3 and ISO 5-4 with an instrument using no polarization filters

[SOURCE: ISO/IEC 24790:2017, 3.27]

3.25.3
reflectance factor
ratio of the reflected flux as measured to the reflected flux under the same geometrical and spectral conditions for an ideal 100 % diffuse reflecting surface

[SOURCE: ISO/IEC 29112:2018, 3.1.23]

4 Classification and alphabetical index of terms

4.1 Classification of terms

A classification of terms is given in Annex A.

4.2 Alphabetical index

An alphabetical index is provided after the Bibliography.

Annex A
(informative)

Classification of terms

A.1 General

In this document, previously published International Standards are referenced as much as possible in establishing the definition of each term. However, as different previously published International Standards have different scopes, some of the terms have different definitions or definitions that are not suitable for the purposes of office equipment. This annex is intended to clarify the applicability of previously published International Standards. All of the terms defined in this document are classified into the following four categories:

a) terms that are not defined in previously published International Standards;

b) terms that have conflicting definitions in previously published International Standards;

c) terms that have adapted definitions for office equipment;

d) terms that have definitions in previously published International Standards that are appropriate for office equipment.

Existing standardized definitions were identified using the ISO Online Browsing System (https://www.iso.org/obp/ui/) and Electropedia (https://www.electropedia.org). The following classifications are made based on information available as of May, 2024.

A.2 Colour terms list for office colour equipment

A.2.1 Terms that are not defined in previously published International Standards

Terms listed below are not defined in previously published International Standards.

additive primary	measurement condition M0	pure black
colour palette	measurement condition M1	pure grey
colour shade	measurement condition M2	rich black
composite black	measurement condition M3	special colour
composite grey	metallic colour	subtractive primary
fluorescent toner/ink	monochrome printer	vividness
full colour	multi colour	
highlight colour	named colour	

A.2.2 Terms that have conflicting definitions in previously published International Standards

The terms listed below have several different definitions in different, previously published International Standards. From these, the most suitable definition for office equipment users is selected.

brightness	glare	test pattern
calibration	gloss	tone
colour difference	luminance ratio	transparency
colour gamut	optical density	veiling glare
dynamic range	print mode	viewing environment
flare	reflectance factor	

A.2.3 Terms with modified definitions for office equipment

The definitions of terms listed below are modified from those of previously published International Standards, as they are not appropriate for the purposes of office equipment.

NOTE The terms listed in A.2.3 that have source references included with their definitions in this document have definitions that were not significantly modified from the previously published International Standard. The terms that do not have source references listed in the body of the standard have definitions in previously published International Standards that are not appropriate for office equipment and were, therefore, treated as different terms.

characterization	grey balance	solid colour
colour balance	ICC profile	spectrophotometer
colour appearance	primary colour	spot colour
colourant	process colour	tint
gamma correction	secondary colour	transparent colour

A.2.4 Terms that have definitions in previously published International Standards that are appropriate for office equipment

Terms listed below have definitions that are not changed from previously published International Standards, as they are suitable for office equipment.

adapted white	gamut mapping	rendering intent
colour gamut boundary	greyscale	roll medium
colour management	hardcopy	sheet medium
colour space	ICC	softcopy
colour space encoding	image surround	spectroradiometer
colourant set	indexed colour	surface colour
colourant setting	metamerism	surround
colourfulness	monochrome image	tone reproduction
daylight illuminant	print medium	viewing conditions
device-dependent colour space	print settings profile	viewing flare
device-independent colour space	printer controller	

Annex B
(informative)

Primary colours and typical input in various devices versus market segments

Table B.1 — Primary colours and typical input in various devices versus market segments

		Typical device input			
Market segment / Device	Primary colours[a]	Consumer	Office	Professional printing (Graphic technology)	Photography
Corresponding organization		IEC/TC 100	JTC 1/SC 28	ISO/TC 130	ISO/TC 42
Digital camera	RGB	Natural scene	—	—	Natural scene
Monitor	RGB	RGB	—	RGB	RGB
Scanner	RGB	2D Media	2D Media	2D Media	2D Media
Printer	CMYK	RGB	RGB[b]	CMYK	—
Projector	RGB	RGB	RGB	—	—

NOTE "—" indicates that the device is not relevant for the corresponding organization.

[a] The primary colours of digital cameras, monitors, scanners and projectors are generally RGB, while the primary colours of printers are generally CMYK.

[b] Most office printers only accept RGB values as input signals, while printer primary colours are generally CMYK. The RGB input signals are converted to CMYK values by gamut mapping algorithms provided by the office printer manufacturer and then printed onto output media.

For many office document applications, users specify colour using RGB values, while for a few applications such as Photoshop®,[c] Illustrator®,[c] and Acrobat®,[c] users can specify colour with either RGB or CMYK values.

When colours are specified by CMYK values in an application's user interface, they are first converted to RGB by the gamut mapping algorithm incorporated in the application, rather than by an algorithm supplied by the printer manufacturer. These values are then converted from application RGB values to printer CMYK values by the gamut mapping algorithm provided by the office printer manufacturer (postscript printers are an exception to this workflow).

In this workflow, unless the preference settings of the applications are set appropriately, the CMYK values resulting on the output media are typically not what the user intended.

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Table B.2 — Secondary colours for additive primaries

Secondary colour / Primary colour	Cyan	Magenta	Yellow
Mixture of two primary colours	G + B	R + B	R + G

Table B.3 — Secondary colours for subtractive primaries

Secondary colour / Primary colour	Red	Green	Blue
Mixture of two primary colours	M + Y	C + Y	C + M