
Analizna kolorimetrija - 2. del: Saundersonova korekcija, rešitve Kubelka-Munkove enačbe, barvna jakost in kritnost (ISO 18314-2:2015)

Analytical colorimetry - Part 2: Saunderson correction, solutions of the Kubelka-Munk equation, tinting strength, hiding power (ISO 18314-2:2015)

Analytische Farbmessung - Teil 2: Saunderson-Korrektur, Lösungen der Kubelka-Munk-Gleichung, Farbstärke, Deckvermögen (ISO 18314-2:2015)

Analyse colorimétrique - Partie 2: Correction de Saunderson, solutions de l'équation de Kubelka-Munk, force colorante, pouvoir couvrant (ISO 18314-2:2015)

<https://standards.iteh.ai/catalog/standards/sist/c4b89208-ad44-4474-88a0-8bc378f375f/sist-en-iso-18314-2-2018>

Ta slovenski standard je istoveten z: EN ISO 18314-2:2018

ICS:

17.180.20	Barve in merjenje svetlobe	Colours and measurement of light
87.060.10	Pigmenti in polnila	Pigments and extenders

SIST EN ISO 18314-2:2018**en,fr,de**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 18314-2:2018

<https://standards.iteh.ai/catalog/standards/sist/c4b89208-ad44-4474-88a0-8bc37f8f375f/sist-en-iso-18314-2-2018>

EUROPEAN STANDARD

EN ISO 18314-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2018

ICS 87.060.10

English Version

Analytical colorimetry - Part 2: Saunderson correction, solutions of the Kubelka-Munk equation, tinting strength, hiding power (ISO 18314-2:2015)

Analyse colorimétrique - Partie 2: Correction de Saunderson, solutions de l'équation de Kubelka-Munk, force colorante, pouvoir couvrant (ISO 18314-2:2015)

Analytische Farbmessung - Teil 2: Saunderson-Korrektur, Lösungen der Kubelka-Munk-Gleichung, Farbstärke, Deckvermögen (ISO 18314-2:2015)

This European Standard was approved by CEN on 19 February 2018.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

iTeh STANDARD PREVIEW

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	3

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 18314-2:2018
<https://standards.iteh.ai/catalog/standards/sist/c4b89208-ad44-4474-88a0-8bc37f8f375f/sist-en-iso-18314-2-2018>

European foreword

The text of ISO 18314-2:2015 has been prepared by Technical Committee 256 "Pigments, dyestuffs and extenders" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 18314-2:2018 by Technical Committee CEN/TC 298 "Pigments and extenders" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2019, and conflicting national standards shall be withdrawn at the latest by April 2019.

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

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

iTeh STANDARD PREVIEW Endorsement notice (standards.iteh.ai)

The text of ISO 18314-2:2015 has been approved by CEN as EN ISO 18314-2:2018 without any modification.

[SIST EN ISO 18314-2:2018](https://standards.iteh.ai/catalog/standards/sist/c4b89208-ad44-4474-88a0-8bc37f8375f/sist-en-iso-18314-2-2018)

<https://standards.iteh.ai/catalog/standards/sist/c4b89208-ad44-4474-88a0-8bc37f8375f/sist-en-iso-18314-2-2018>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 18314-2:2018

<https://standards.iteh.ai/catalog/standards/sist/c4b89208-ad44-4474-88a0-8bc37f8f375f/sist-en-iso-18314-2-2018>

INTERNATIONAL
STANDARD

ISO
18314-2

First edition
2015-06-01

Analytical colorimetry —

Part 2:

**Saunderson correction, solutions of
the Kubelka-Munk equation, tinting
strength, hiding power**

iTeh STANDARD PREVIEW

Analyse colorimétrique —

(standards.iteh.ai)
*Partie 2: Correction de Saunderson, solutions de l'équation de
Kubelka-Munk, force colorante, pouvoir couvrant*

SIST EN ISO 18314-2:2018

<https://standards.iteh.ai/catalog/standards/sist/c4b89208-ad44-4474-88a0-8bc37f8f375f/sist-en-iso-18314-2-2018>



Reference number
ISO 18314-2:2015(E)

© ISO 2015

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 18314-2:2018

<https://standards.iteh.ai/catalog/standards/sist/c4b89208-ad44-4474-88a0-8bc37f8f375f/sist-en-iso-18314-2-2018>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword.....	iv
1 Scope.....	1
2 Terms, definitions, symbols, and abbreviated terms.....	1
2.1 Terms and definitions.....	1
2.2 Symbols and abbreviated terms.....	2
3 Saunderson correction.....	4
3.1 General.....	4
3.2 Incidence diffuse, observation 0° (d/0°).....	4
3.3 Incidence 45°, observation 0° (45°: 0°).....	4
4 Solution of the Kubelka-Munk equations.....	5
5 Determination of relative tinting strength and residual colour difference of coloured pigments.....	6
5.1 General.....	6
5.2 Principle.....	6
5.3 Procedure.....	6
5.3.1 General.....	6
5.3.2 Evaluation of absorption at the absorption maximum.....	7
5.3.3 Evaluation of the weighted <i>K/S</i> sum.....	7
5.3.4 Evaluation by equalizing the tristimulus value, <i>Y</i>	8
5.3.5 Evaluation by equalizing the smallest of the tristimulus values <i>X</i> , <i>Y</i> , and <i>Z</i>	8
5.3.6 Evaluation by equalizing the shade depth.....	9
6 Determination of hiding power of pigmented media.....	10
6.1 General.....	10
6.2 Example for white or light coloured paints with a contrast ratio of 0,98 as hiding power criterion.....	11
7 Repeatability and reproducibility.....	12
8 Test report.....	12
Annex A (normative) Tables of coefficients for calculating a(φ) values (standard illuminant D65 and 10° standard observer).....	13
Annex B (normative) Tables of coefficients for calculating a(φ) values (standard illuminant C and 2° standard observer).....	15
Bibliography.....	17

ISO 18314-2:2015(E)

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.

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 ISO documents 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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 256, *Pigments, dyestuffs and fillers*.

ISO 18314 consists of the following parts, under the general title *Analytical colorimetry*:

- *Part 1: Practical colour measurement*
- *Part 2: Saunderson correction, solutions of the Kubelka-Munk equation, tinting strength, hiding power*
- *Part 3: Special indices*

Analytical colorimetry —

Part 2:

Saunderson correction, solutions of the Kubelka-Munk equation, tinting strength, hiding power

1 Scope

This part of ISO 18314 specifies the Saunderson correction for different measurement geometries and the solutions of the Kubelka-Munk equation for hiding and transparent layers. It also specifies methods for the calculations of the tinting strength including the residual colour difference with different criteria and of the hiding power.

The procedures for preparing the samples for these measurements are not part of this part of ISO 18314. They are agreed between the contracting parties or are described in other national or International Standards.

2 Terms, definitions, symbols, and abbreviated terms

2.1 Terms and definitions

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

2.1.1

tinting strength https://standards.iteh.ai/catalog/standards/sist/c4b89208-ad44-4474-88a0-8bc378375f8c/sist-en-iso-18314-2-2018
measure of the ability of a colorant, based on its absorption, to impart colour to other materials

2.1.2

relative tinting strength

C_{rel}

percentage ratio of those mass fractions of the coloured pigment reference and test samples (m_r and m_t , respectively) that cause the particular tinting strength criterion used to have identical values for the reference and test samples

2.1.3

tinting strength criterion

parameter that describes the colouring effect of a colorant, based on its absorption

Note 1 to entry: The tinting strength criteria used in this part of ISO 18314 are the following:

- value of the Kubelka-Munk function at the absorption maximum;
- weighted sum of the Kubelka-Munk function values;
- tristimulus value Y ;
- the smallest of the tristimulus values X, Y, Z ;
- shade depth parameter B .

Examples of other tinting strength parameters not used in this part of ISO 18314 are the following:

- unweighted sum of the Kubelka-Munk function values;
- chromaticity given by the three colour coordinates (L^*, a^*, b^*);