
Analytical colorimetry —

Part 2:

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

Analyse colorimétrique —

*Partie 2: Correction de Saunderson, solutions de l'équation de
Kubelka-Munk, force colorante, pouvoir couvrant*



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Foreword

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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

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^*);