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BS EN ISO 16373-2:2014



BSI Standards Publication

Textiles — Dyestuffs

Part 2: General method for the determination of extractable dyestuffs including allergenic and carcinogenic dyestuffs (method using pyridine-water) (ISO 16373-2:2014)

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This British Standard is the UK implementation of EN ISO 16373-2:2014.

The UK participation in its preparation was entrusted to Technical Committee TCI/80, Chemical testing of textiles.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Textiles - Dyestuffs - Part 2: General method for the
determination of extractable dyestuffs including allergenic and
carcinogenic dyestuffs (method using pyridine-water) (ISO
16373-2:2014)

Textiles - Colorants - Partie 2: Méthode générale de
détermination des colorants extractibles, notamment les
colorants allergènes et cancérigènes (méthode utilisant un
mélange pyridine/eau) (ISO 16373-2:2014)

Textilien - Farbstoffe - Teil 2: Allgemeines Verfahren zur
Bestimmung von extrahierbaren Farbstoffen einschließlich
allergener und karzinogener Farbstoffe (Pyridin-Wasser-
Verfahren) (ISO 16373-2:2014)

This European Standard was approved by CEN on 3 June 2014.

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Foreword

This document (EN ISO 16373-2:2014) has been prepared by Technical Committee CEN/TC 248 "Textiles and textile products" the secretariat of which is held by BSI, in collaboration with Technical Committee ISO/TC 38 "Textiles".

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of an identical text or by endorsement, at the latest by December 2014, and conflicting national standards shall be withdrawn at the latest by December 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 16373-2:2014 has been approved by CEN as EN ISO 16373-2:2014 without any modification.

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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.

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. www.iso.org/directives

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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](#)

ISO 16373-2 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 248, *Textiles and textile products*, in collaboration with ISO Technical Committee TC 38, *Textiles*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

ISO 16373 consists of the following parts, under the general title *Textiles — Dyestuffs*:

- *Part 1: General principles of testing coloured textiles for dyestuff identification*
- *Part 2: General method for the determination of extractable dyestuffs including allergenic and carcinogenic (method using pyridine-water)*
- *Part 3: Method for determination of carcinogenic extractable dyestuffs (method using triethylamine/methanol)*

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Introduction

The ISO 16373 series deals with dyestuffs used in textile for qualification and quantification.

ISO 16373-1¹⁾ includes the definition of the dyestuff classes and the description of some procedures to identify qualitatively the dyestuff class used in textile material.

The other parts of ISO 16373 are related to the quantification of some dyestuffs.

In this part of ISO 16373, the principle of the test method is based on the extraction using pyridine-water solution, which has been found to be the most efficient solution to extract a large range of dyestuffs, including allergenic and carcinogenic dyestuffs.

In ISO 16373-3, the principle of the test method is based on extraction using triethylamine/methanol solution. This solution has been found efficient to extract some dyestuffs in some cases.

Additional information related to the recovery rate (to characterize the extraction efficiency) obtained from the application of ISO 16373-3 and this part of ISO 16373 will be summarized in ISO 16373-1.

It is important to note that other test methods exist related to azo dyes, for which a reduction of those extracted azo dyes leads to the release of some aromatic amines, to be detected and determined using chromatography.

The percentage of recovery using the method of this part of ISO 16373 is shown in [Annex F](#) for the dyestuff classes (to be defined in ISO 16373-1) acid, basic, direct, disperse, solvent dyestuffs and "mordant dyestuffs" on different textile fibres.

1) To be published.

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Textiles — Dyestuffs —

Part 2:

General method for the determination of extractable dyestuffs including allergenic and carcinogenic dyestuffs (method using pyridine-water)

1 Scope

This part of ISO 16373 specifies the analyses used to detect extractable dyestuffs in textile products, with the extraction performed for all kind of fibres and types of dyestuffs using pyridine/water (1:1). It lists (see [Annexes A](#) and [B](#)) the allergenic and carcinogenic dyestuffs which can be analysed using this method; the lists of dyestuffs are expandable.

2 Normative references

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

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

3 Terms and definitions

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

3.1

allergenic dyestuff

dyestuff which may cause an allergic skin reaction

3.2

carcinogenic dyestuff

dyestuff which is classified as carcinogenic substance

Note 1 to entry: Harmonized classification according to the *Globally harmonized system of classification and labelling of chemicals (GHS)*,^[2] incorporated in EU Regulation 1272/2008 (CLP)^[3].

4 Principle

A coloured test specimen is selected from the textile article and extracted with pyridine/water at 100 °C. The extract is analysed by liquid chromatography/diode array detection (LC/DAD) and/or by liquid chromatography/mass spectrometry (LC/MS).

5 Safety precautions

WARNING —The substances listed in [Tables A.1](#), [B.1](#) and [B.2](#) are classified as substances known to be or suspected to be human allergens or carcinogens.

Ensure that any handling and disposal of these substances is in strict accordance with the appropriate national health and safety regulations.