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**Textiles — Dyestuffs —**

**Part 1:**

**General principles of testing coloured  
textiles for dyestuff identification**

*Textiles — Colorants —*

*Partie 1: Principes généraux d'essais des textiles colorés pour  
l'identification des colorants*



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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 (see [www.iso.org/directives](http://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](http://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](#)

ISO 16373-1 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 dyestuffs (method using pyridine-water)*
- *Part 3: Method for determination of certain carcinogenic dyestuffs (method using triethylamine/methanol)*

## Introduction

The ISO 16373- series deals with dyes used in textiles for qualification and quantification.

This part of ISO 16373 includes the definition of the classes of dyes, the description of some procedures to identify qualitatively the class of dyes used in textile material.

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

- The principle of the test method in ISO 16373-2 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 dyes, including allergenic and carcinogenic dyes.
- The principle of the test method in ISO 16373-3 is based on the extraction using triethylamine-methanol solution. This solution has been found efficient to extract some dyes in some cases.

Additional information related to the recovery rates (to characterize the extraction efficiency) obtained from the application of ISO 16373-2 and ISO 16373-3 are summarized in [Annex B](#).

It is important to note that there are other test methods related to azo dyes, for which a reduction of the extracted azo dyes leads to the release of some aromatic amines to be detected and determined using chromatography (See Bibliography/Aromatic amines determination).



# Textiles — Dyestuffs —

## Part 1:

# General principles of testing coloured textiles for dyestuff identification

**WARNING** — This document calls for the use of substances/procedures that may be injurious to the health/environment if appropriate conditions are not observed. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety/environment at any stage.

## 1 Scope

This part of ISO 16373 gives the definition of the colourant classes and the relationship to textile fibres. It describes some procedures to identify qualitatively the colourant class used in textile material.

## 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*

ISO 5089, *Textiles — Preparation of laboratory test samples and test specimens for chemical testing*

## 3 Terms and definitions

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

### 3.1

#### **colourant**

dye or pigment

### 3.2

#### **dye**

#### **dyestuff**

water-insoluble or water-soluble molecule which has dyeing affinity with fibre

Note 1 to entry: The defining difference between a dye and a pigment is its solubility in an aqueous medium. In this part of ISO 16373, the term “affinity” is used as a qualitative expression, although affinity is the quantitative expression of substantivity and usually expressed in Joules per mole, where substantivity is the attraction between a substrate and a dye or other substance under precise conditions where the latter is selectively extracted from the application medium by the substrate.