SLOVENSKI STANDARD
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Tekstilije - Kemično čiščenje, suho in mokro čiščenje izdelkov in oblačil - 5. del: Postopek preskušanja učinkovitosti pri čiščenju in plemenitenju z dibutoksimetanom (ISO/DIS 3175-5:2018)

Textiles - Professional care, drycleaning and wetcleaning of fabrics and garments - Part 5: Procedure for testing performance when cleaning and finishing using dibutoxymethane (ISO/DIS 3175-5:2018)

Textiles - Professionelle Pflege, Chemischreinigung und Nassreinigung von textilen Flächengebilden und Kleidungsstücken - Teil 5: Verfahren zur Prüfung des Verhaltens beim Reinigen und Nachbehandeln unter Verwendung von Dibutoxymethane (ISO/DIS 3175-5:2018)

Textiles - Entretien professionnel, nettoyage à sec et nettoyage à l'eau des étoffes et des vêtements - Partie 5: Mode opératoire pour évaluer la résistance au nettoyage et à la finition avec du dibutoxyméthane (ISO/DIS 3175-5:2018)

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Textiles — Professional care, drycleaning and wetcleaning of fabrics and garments —

Part 5:
Procedure for testing performance when cleaning and finishing using dibutoxymethane

Textiles — Entretien professionnel, nettoyage à sec et nettoyage à l'eau des étoffes et des vêtements —

Partie 5: Mode opératoire pour évaluer la résistance au nettoyage et à la finition lors du traitement au dibutoxymethane

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

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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).

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).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC *38*, *Textiles*, Subcommittee SC 2, *Cleansing, finishing and water resistance tests,* WG 1, *Professional cleaning*.

ISO 3175 consists of parts, under the general title *Textiles — Professional care, drycleaning and wetcleaning of fabrics and garments*.

A list of all parts in the ISO 3175- series can be found on the ISO website.

Introduction

Drycleaning is a process for cleaning textiles in an organic solvent that dissolves oils and fats and disperses particulate dirt substantially without the swelling and creasing associated with washing or wet cleaning. Small quantities of water may be incorporated in the solvent with the aid of a surfactant for the purpose of obtaining better soil and stain removal. Some moisture-sensitive articles are preferably drycleaned without the addition of water to the solvent. A surfactant is often used to assist with soil removal and reduce the risk of greying, but it should be borne in mind that surfactants contain varying amounts of water in their formulations.

Drycleaning is normally followed by an appropriate restorative finishing procedure. In most cases, this comprises some form of steam treatment and/or hot pressing.

Properties of the textile or garment may change progressively on drycleaning and steaming and/or pressing and in some cases a single treatment can give little indication of the extent of dimensional and other changes that can arise after repeated treatments and which can affect the useful life of the article. Generally, most of the potential changes become apparent after three to five of the drycleaning and finishing treatments specified in this part of ISO 3175. This progressive change should be borne in mind when the parties determine the number of repeat cycles which shall be given.

The properties which should be considered in an assessment for drycleanability together with the methods for their assessment are given in ISO 3175-1.

The use of diether compounds for chemically cleaning textile, leather or fur goods is patented.

Textiles — Professional care, drycleaning and wetcleaning of fabrics and garments —

Part 5: Procedure for testing performance when cleaning and finishing using dibutoxymethane

SAFETY PRECAUTIONS — When using drycleaning equipment, official regulations and normal safety precautions should be observed.

1 Scope

This part of ISO 3175 specifies drycleaning procedures for dibutoxymethane [1-(butoxymethoxy) butane], using commercial drycleaning machines, for fabrics and garments. It comprises procedures for normal and sensitive materials (see 3.3 and 3.4).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 139, *Textiles — Standard atmospheres for conditioning and testing*

ISO 3175-1, *Textiles — Professional care, drycleaning and wetcleaning of fabrics and garments — Part 1: Assessment of performance after cleaning and finishing*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
material
garments, composites test specimen or fabrics

[SOURCE: ISO 3175-2:2017, 3.1]

3.2
composite test specimen
test specimen consisting of all component parts used in the finished item, and combined in a representative assembly

[SOURCE: ISO 3175-1:2017, 3.1]

3.3
normal material
material consisting of all components parts which are able to withstand the normal drycleaning process as specified in this part of ISO 3175 without modification

3.4
sensitive material
material consisting of all components parts which may require restrictions as to mechanical action and/or drying temperatures and/or water additions

4 Principle

The specimen, or specimens, are drycleaned in a commercial machine and finished according to one of the specified procedures. This process is a precursor to the assessment of the cleaned specimen in accordance with ISO 3175-1.

5 Reagents

5.1 Dibutoxymethane, $CH_3CH_2CH_2CH_2OCH_2OCH_2CH_2CH_2CH_3$ (CAS 2568-90-3), flashpoint 62 °C, boiling point 182,5 °C, distilled, sold for the purpose of drycleaning.

5.2 Sorbitan mono-oleate.

NOTE Sorbitan mono-oleate is used as a model for a standard drycleaning detergent. Sorbitan mono-oleate is used as an emulsifier for water in the drycleaning solvent.

In order to prevent foaming, it is important to use distilled, clean solvent solution and not overfill the still.

6 Apparatus

6.1 Drycleaning machine, consisting of a reversible rotating cage and safety system, intended for use with dibutoxymethane. The diameter of the rotating cage shall be 600 mm minimum and 1 080 mm maximum. Its depth shall be 300 mm minimum. It shall be fitted with three or four lifters. The speed shall be such as to give a *g*-factor of between 0,5 and 0,8 for cleaning and between 100 and 300 for extraction.

The *g*-factor is calculated according to the following formula (1):

$$g = 5{,}6\ n^2 d \times 10^{-7} \qquad (1)$$

where

n is the rotational frequency, in rotations per minute;

d is the rotating cage diameter, in millimetres.

6.1.1 The machine shall be fitted with a means of controlling solvent and air temperature as required (see Table 1).

6.1.2 The machine shall have suitable facilities (e.g. dosing apparatus) to allow the emulsion (see 9.2.3.) to be introduced gradually into the solvent whilst avoiding direct contact with the textiles.

6.1.3 The machine shall be equipped with a means of measuring the temperature of the solvent during drycleaning as well as that of either the incoming or the outcoming air during drying within ± 2 °C.

6.1.4 The machine shall be equipped with an automatic solvent dryness control.