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**Tekstilije - Kvantitativna kemična analiza - 29. del: Mešanica poliamida z dvokomponentnim polipropilen/poliamidom (metoda z uporabo žveplene kisline) (ISO/DIS 1833-29:2019)**

Textiles - Quantitative chemical analysis - Part 29: Mixtures of polyamide with polypropylene/polyamide bicomponent (method using sulfuric acid) (ISO/DIS 1833-29:2019)

Textilien - Quantitative chemische Analysen - Teil 29: Mischungen aus Polyamid mit Polypropylen/Polyamid-Bikomponente (Verfahren mit Schwefelsäure) (ISO/DIS 1833-29:2019)

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Textiles - Analyse chimique quantitative - Partie 29: Mélanges de polyamide avec bi composant polypropylene/polyamide (méthode à l'acide sulfurique) (ISO/DIS 1833-29:2019)

**Ta slovenski standard je istoveten z: prEN ISO 1833-29**

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### Textiles — Quantitative chemical analysis —

Part 29:

### Mixtures of polyamide with polypropylene/polyamide bicomponent (method using sulfuric acid)

*Textiles — Analyse chimique quantitative —**Partie 29: Mélanges de polyamide avec bi composant polypropylène/polyamide (méthode à l'acide sulfurique)*

ICS: 59.060.01

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## ISO/DIS 1833-29:2019(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](http://www.iso.org/directives)).

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This document was prepared by Technical Committee ISO/TC 38, *Textiles*.

A list of all parts in the ISO 1833- series can be found on the ISO website.

## Introduction

Mixtures of polyamide with polypropylene/polyamide bicomponent are often used for carpets. Polypropylene is the matrix of the bicomponent which includes polyamide fibrils.

The method described in ISO 1833-18 *Mixtures of silk with other protein fibres (method using sulfuric acid)* was found suitable to dissolve polyamide fibres without dissolving the polyamide fibrils inside the bicomponent.

As the scope of ISO 1833-18 is specific to mixtures of silk with protein fibres, a specific part was developed for mixtures of polyamide with polypropylene/polyamide bicomponent, using the same operating conditions.

The method described in ISO 1833-7 *Textiles -- Quantitative chemical analysis -- Part 7: Mixtures of polyamide with certain other fibres (method using formic acid)* was not found suitable as formic acid dissolves all polyamide.

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# Textiles — Quantitative chemical analysis —

## Part 29:

## Mixtures of polyamide with polypropylene/polyamide bicomponent (method using sulfuric acid)

### 1 Scope

This part of ISO 1833 specifies a method, using sulfuric acid, to determine the mass percentage of polyamide, after removal of non-fibrous matter, in textiles made of binary mixtures of

— Polyamide

with

—polypropylene/polyamide bicomponent.

### 2 Normative references

The following referenced documents are indispensable for the application 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 1833-1, *Textiles — Quantitative chemical analysis — Part 1: General principles of testing*

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### 3 Terms and definitions

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

— ISO Online browsing platform: available at [https:// www .iso .org/ obp](https://www.iso.org/obp)

— IEC Electropedia: available at [http:// www .electropedia .org/](http://www.electropedia.org/)

#### 3.1

#### **bicomponent**

two strongly bonded polymers of different chemical and/or physical construction.

#### 3.2

#### **polypropylene/polyamide bicomponent**

bicomponent where fibrils of polyamide are span inside the polypropylene matrix in this document(source ISO 2076:2013, annex B)

### 4 Principle

The polyamide is dissolved from a known dry mass of the mixture with 75 % (mass fraction) sulfuric acid. The residue is collected, washed, dried and weighed; its mass, corrected if necessary, is expressed as a percentage of the dry mass of the mixture. The percentage of polyamide/polypropylene bicomponent is found by the difference.

### 5 Reagents

Use the reagents described in ISO 1833-1 together with those given in [5.1](#), [5.2](#) and [5.3](#).

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### 5.1 Sulfuric acid.

Prepare this reagent by adding carefully, while cooling, 700 ml of sulfuric acid ( $\rho = 1,84$  g/ml at 20°C) to 350 ml of distilled water. After cooling this solution to room temperature, dilute it to 1 l with water. The concentration is not critical within the range 73 % to 77 % (mass fraction) sulfuric acid.

### 5.2 Sulfuric acid, dilute solution.

Slowly add 100 ml of sulfuric acid (5.1) ( $\rho = 1,84$  g/ml at 20°C) to 1 900 ml of distilled water.

### 5.3 Ammonia, dilute solution.

Dilute 200 ml of concentrated ammonia solution ( $\rho = 0,88$  g/ml at 20°C) to 1 l with water.

## 6 Apparatus

Use the apparatus described in ISO 1833-1 together with that given in 6.1.

### 6.1 Conical flasks, of minimum capacity 200 ml, glass stoppered.

## 7 Test procedure

Follow the general procedure described in ISO 1833-1, and then proceed as follows.

To the specimen contained in a glass-stoppered conical flask, add 100 ml of the sulfuric acid (5.1) per gram of specimen, insert the stopper, shake vigorously (preferably in a mechanical shaker) and allow to stand for 30 min at room temperature.

Shake again and allow standing for 30 min.

Shake a last time and filter the contents of the flask through the weighed filter crucible. Wash any remaining fibres from the flask with a little sulfuric acid (5.1).

Drain the crucible using suction and wash the residue on the crucible successively with 50 ml of the dilute sulfuric acid solution (5.2), 50 ml of water and 50 ml of the dilute ammonia solution (5.3). Each time, allow the fibres to remain in contact with the liquid for at least 10 min before applying suction.

Rinse with water, leaving the fibres in contact with the water for about 30 min.

Finally, drain the crucible using suction, dry the crucible and residue, then cool and weigh them.

## 8 Calculation and expression of results

Calculate the results as described in the general instructions of ISO 1833-1.

The value of  $d$  is 1,00.

## 9 Precision

On a homogeneous mixture of textile materials, the confidence limits of results obtained by this method are not greater than  $\pm 1$  percentage point for a confidence level of 95 %.