

PD CEN ISO/TR 11827:2016



BSI Standards Publication

# **Textiles — Composition testing — Identification of fibres (ISO/TR 11827:2012)**

**National foreword**

This Published Document is the UK implementation of CEN ISO/TR 11827:2016. It is identical to ISO/TR 11827:2012. It supersedes PD ISO/TR 11827:2012 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee TCI/100, Co-ordination of activities in textiles and clothing.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2016.

Published by BSI Standards Limited 2016

ISBN 978 0 580 93121 5

ICS 59.060.01

**Compliance with a British Standard cannot confer immunity from legal obligations.**

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 30 June 2012.

**Amendments/corrigenda issued since publication**

Date	Text affected
------	---------------

30 June 2016	This corrigendum renumbers PD ISO/TR 11827:2012 as PD CEN ISO/TR 11827:2016
--------------	---

English Version

**Textiles - Composition testing - Identification of fibres  
(ISO/TR 11827:2012)**

Textiles - Essai de composition - Identification des  
fibres (ISO/TR 11827:2012)

This Technical Report was approved by CEN on 22 May 2016. It has been drawn up by the Technical Committee CEN/TC 248.

CEN members are the national standards bodies of 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 United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## **European foreword**

This document (CEN ISO/TR 11827:2016) has been prepared by Technical Committee ISO/TC 38 “Textiles” in collaboration with Technical Committee CEN/TC 248 “Textiles and textile products” the secretariat of which is held by BSI.

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.

## **Endorsement notice**

The text of ISO/TR 11827:2012 has been approved by CEN as CEN ISO/TR 11827:2016 without any modification.

## Contents

Page

Foreword .....	iv
Introduction.....	v
1 Scope .....	1
2 Safety note .....	1
3 Normative references .....	2
4 Terms and definitions .....	2
5 Principle.....	2
6 Apparatus and preparation of solutions .....	3
6.1 Apparatus .....	3
6.2 Preparation of solutions .....	3
7 Techniques.....	4
7.1 Microscopy.....	4
7.2 Flame tests .....	6
7.3 Staining Tests .....	7
7.4 Solubility Tests .....	7
7.5 Infrared Spectroscopy .....	8
7.6 Thermal Analysis.....	12
7.7 Density measurement methods .....	14
7.8 Other Instrumental Methods.....	14
8 Examples of procedures.....	15
8.1 Procedure using microscopy, solubility tests and FT-IR tests (examples) .....	15
8.2 Procedure using solubility tests (examples) .....	17
8.3 Procedure using combustion tests and melting point determination (example) .....	19
8.4 Procedure using microscopy, FT-IR analysis and thermal analysis, case of bicomponent fibres (examples) .....	19
Annex A (informative) Characteristics relative to fibre identification testing .....	24
Annex B (informative) Photomicrographs of Fibres (Light Microscopy) .....	29
Annex C (informative) Scanning Electron Micrographs of Fibres .....	34
Annex D (informative) Solubility of fibres .....	42
Annex E (informative) Examples of Infrared Spectra .....	45
Annex F (informative) Thermal transition temperature .....	50
Annex G (informative) Density.....	54
Annex H (informative) Alphabetical index of figures .....	55
Bibliography.....	57

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

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.

ISO/TR 11827 was prepared by Technical Committee ISO/TC 38, *Textiles*.

## Introduction

The correct identification of fibres in textiles and the accurate determination of the composition of each fibre present is a legal requirement in many countries throughout the world for imported textile goods and at the point of sale to the public. Fibre identification can be carried out by a number of different techniques, e.g. microscopy, solubility, spectroscopy, melting point, pyrolysis, density, refractive index, etc.





# Textiles — Composition testing — Identification of fibres

**IMPORTANT** — The electronic file of this document contains colours which are considered to be useful for the correct understanding of the document. Users should therefore consider printing this document using a colour printer.

## 1 Scope

This Technical Report describes procedures for the identification of natural and man-made fibres, and may be used, when necessary, to coordinate with methods for the quantitative analysis of fibre blends.

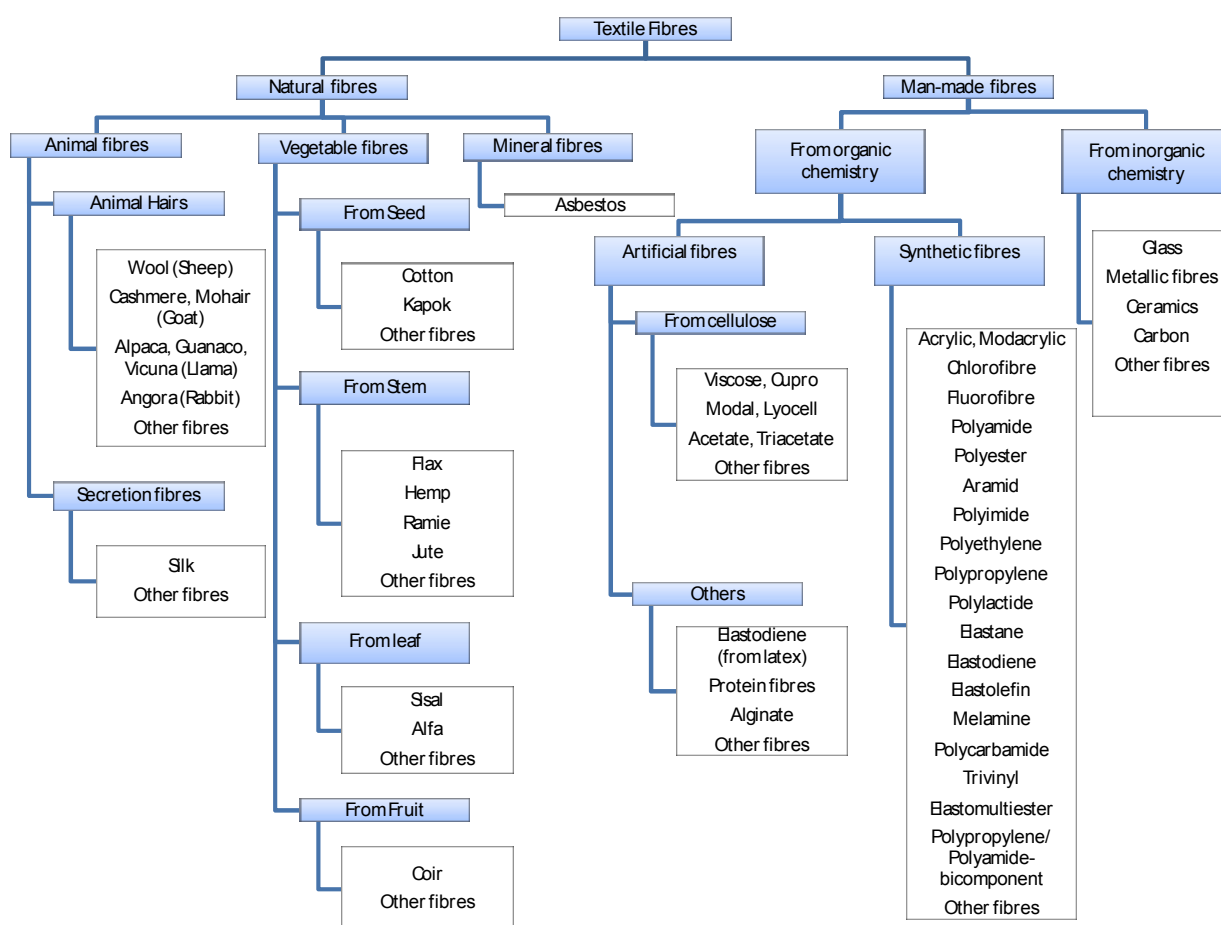


Figure 1 — Classification of the textile fibres in relation to their origin

## 2 Safety note

This Technical Report 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.