FINAL
DRAFT

INTERNATIONAL
STANDARD

**ISO/FDIS
2076**

ISO/TC **38**

Secretariat: JISC

Voting begins on:
2021-07-26

Voting terminates on:
2021-09-20

Textiles — Chemically manufactured fibres — Generic names

Textiles — Fibres chimiques — Noms génériques

ISO/CEN PARALLEL PROCESSING

Reference number
ISO/FDIS 2076:2021(E)

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

Published in Switzerland

Contents

Page

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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of 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 www.iso.org/iso/foreword.html.

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

This seventh edition cancels and replaces the sixth edition (ISO 2076:2013), which has been technically revised. The main changes compared to the previous edition are as follows:

— the deprecated expression "man-made fibres" has been changed to "chemically manufactured fibres" in the title and text;

— the mandatory Clause 2 (Normative references) has been added and subsequent clauses have been renumbered;

— in Table 1, the definition of protein (5.28) has been modified, chitosan (5.36), polyacrylate (5.37), polybenzoxazole (5.38) and polyarylate (5.39) as well as their respective definition have been added;

— in Table D.1, chitosan, polyacrylate, polybenzoxazole and polyarylate have been added;

— in Table E.1, polybenzoxazole and polyarylate have been added;

— in Table F.2, protein (EU denomination) has been added.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The objective of this document is to propose a generic name of fibre (a generic name is unique by nature) within the framework of the ISO standardization for the textile products. It has been elaborated in order to present a compilation of generic names and the rules to create a new generic name for new fibres.

It is intended to be the reference for the ISO 1833 series[1] and the Technical Report ISO/TR 11827[3].

It can be used as a reference within the framework of the globalization as compilation of the generic names of chemically manufactured fibres is important for the global distribution of textile products due to national regulations for the declaration of fibre content and care labelling. It can be an answer to a universal need for the standardization of generic names that would foster easy movement of textiles across borders to facilitate trade, for example, for companies which might have plants in multiple countries and have innovations and business activities covering research and development in fibre-producing.

This document can be helpful for the coordination of national or regional authorities (for examples, FTC in the USA, European Commission in European Union, etc.) within the framework of regulations. Annex F links the generic names to the specific requirements regarding some national or regional regulations.

For example, products destined for the European market are labelled in accordance with the regulation identified as Regulation (EU) No. 1007/2011 of the European Parliament and of the Council of 27 September 2011 on textile fibre names and related labelling and marking of the fibre composition of textile products. Regulation 1007/2011 repeals Council Directive 73/44/EEC and Directives 96/73/EC and 2008/121/EC of the European Parliament and of the Council and includes some different and/or additional fibre denominations other than the present generic names (see F.3 and Table F.2).

Annexes include the description of the fibre structures in case of fibre made of several components (see Annex B) and the description of modified fibres (see Annex C).

Textiles — Chemically manufactured fibres — Generic names

1 Scope

This document defines the generic names used to designate the different categories of chemically manufactured fibres, based on a main polymer, currently manufactured on an industrial scale for textile and other purposes, together with the distinguishing attributes that characterize them. The term "chemically manufactured fibres" has been adopted for those fibres obtained by a manufacturing process, as distinct from materials which occur naturally in fibrous form.

This document gives recommendations of rules for the creation of the generic name (see Annex A).

NOTE These rules have been introduced in the sixth edition of ISO 2076, and thus, they are not applicable to the existing generic names of the previous editions.

2 Normative references

There are no normative references in this document.

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 https://www.iso.org/obp

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

3.1
chemically manufactured fibre
fibre obtained by a manufacturing process

Note 1 to entry: The term "chemically manufactured" fibre can be named "manufactured" fibre or "chemical" fibre.

4 General

4.1 Table entries

The entries in Table 1 are organized into five principal elements: generic name, other denominations, abbreviated terms, distinguishing attributes and chemical formulae.

In some chemical formulae, *k*, *m*, *n* or *p* are used to express the repetition of the monomer or oligomer unit and *R* for radical group.

The entries of Table D.1 in Annex D are an index of generic names in English and in French.

The entries of Table E.1 in Annex E are an index of abbreviated terms in alphabetical order with English and French equivalents.

4.2 **Generic name** (for example, acetate)

This is the name to be used for the fibre whose attributes are described under the heading "Distinguishing attribute" in Table 1. The use of this name shall be limited to those fibres that contain not more than 15 % by mass of property-enhancing additives prior to spinning (no limit is placed upon the proportion of additives that are not property enhanced). In both the English and French languages, the generic name shall be written without capital letters.

The generic name may also apply to a chemically manufactured fibre which results from a manufacturing process that can confer a distinguishing attribute.

4.3 Other denominations

When relevant, this is the denomination used for the fibre name in the regulation of some countries, which differs from the generic name.

The given denominations are relative to the following countries: China (identified as CN), countries of the European Union (EU), Japan (JP) and the USA (US). For further information on the regulation related to these countries, see Annex F.

NOTE The country list can be extended in relation to the contribution of the concerned countries.

4.4 **Abbreviated terms** (for example CA)

This is a two- to four-letter designation used to facilitate the naming of chemically manufactured fibres, for example in sales and technical literature. In some cases, the system of abbreviated terms given to textile fibres is different from the one used for plastics.

NOTE The system of abbreviated terms for plastics is given in ISO 1043-1[2].

4.5 Distinguishing attributes

These are attributes that differentiate one fibre from all the others. Chemical difference, which often results in distinctive property differences, is the main basis for classification in this document; other attributes are used, where necessary, to differentiate between otherwise similar chemically manufactured fibres. The distinguishing attributes are not necessarily those by which the fibres can be identified or the same as those used for naming chemical molecules, nor are they necessarily suitable for the analysis of fibre mixtures.

NOTE In these descriptions, the concepts “group”, “linkage” and “unit” have been used in the following manner:

— “group” is used to denote a functional chemical unit, for example hydroxyl groups on acetate;

— “linkage” is used to denote a chemical bond;

— “unit” is used to denote a repeating element.

4.6 Chemical formulae

These are indications of the chemical structure of the fibre. The examples do not comprise mandatory elements of this document given that, in some cases, the same chemical formula can be shared by more than one fibre category; for example cellulose II is shared by cupro, lyocell, modal and viscose.

5 Generic names

See Table 1.

Table 1 — Generic names

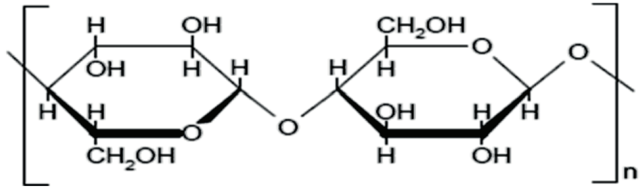
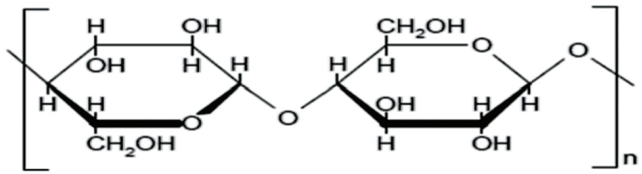
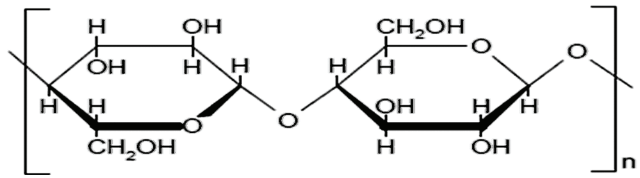
No.	Generic name	Other denominations	Abbr.	Distinguishing attribute	Examples of chemical formulae
5.1	cupro		CUP	Cellulose fibre obtained by the cuprammonium process.	Cellulose II: 
5.2	lyocell	rayon (US)	CLY	Cellulose fibre obtained by an organic solvent spinning process. It is understood that: 1) an “organic solvent” means essentially a mixture of organic chemicals and water; 2) “solvent spinning” means dissolving and spinning without the formation of a derivative.	Cellulose II: 
5.3	modal	rayon (US)	CMD	Cellulose fibre having a high breaking strength and a high wet modulus obtained by the viscose process. The breaking strength B_c in the conditioned state and the force B_w required to produce an elongation of 5 % in its wet state are $B_c \geq 1{,}3\sqrt{\rho_1} + 2\rho_2$ $B_w \geq 0{,}5\sqrt{\rho_1}$ where ρ_l is the mean linear density (mass per unit length), in decitex. B_c and B_w are expressed in centinewtons.	Cellulose II: 

Table 1 *(continued)*

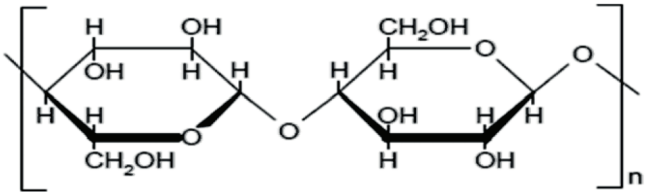
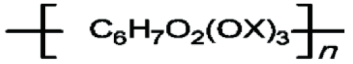
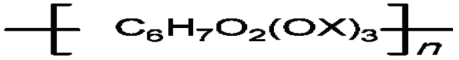
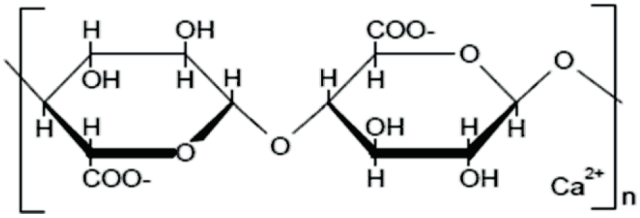
No.	Generic name	Other denominations	Abbr.	Distinguishing attribute	Examples of chemical formulae
5.4	viscose	rayon (JP, US)	CV	Cellulose fibre obtained by the viscose process.	Cellulose II: 
5.5	acetate		CA	Cellulose acetate fibre in which less than 92 %, but at least 74 %, of the hydroxyl groups are acetylated.	Secondary cellulose acetate:  where X = H or CH_3CO and the degree of esterification is at least 2,22 but less than 2,76.
5.6	triacetate		CTA	Cellulose acetate fibre in which at least 92 % of the hydroxyl groups are acetylated.	Cellulose triacetate:  where X = H or CH_3CO and the degree of esterification is between 2,76 and 3.
5.7	alginate		ALG	Fibre obtained from the metal salts of alginic acid.	Calcium alginate: 

Table 1 *(continued)*

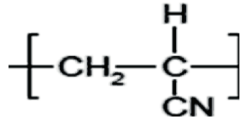
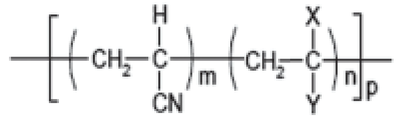
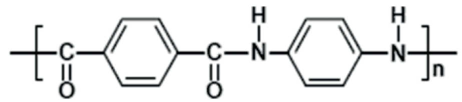
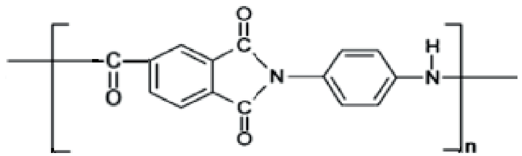
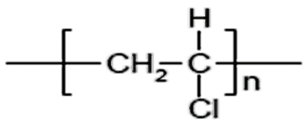
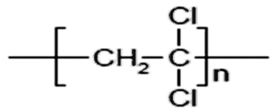
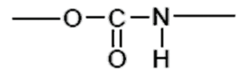
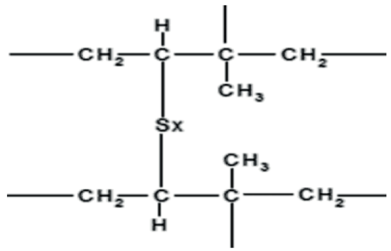
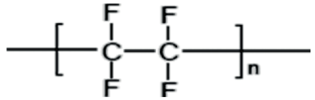
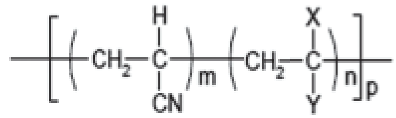
No.	Generic name	Other denominations	Abbr.	Distinguishing attribute	Examples of chemical formulae
5.8	acrylic		PAN	Fibre composed of linear macromolecules having, in the chain, at least 85 % by mass of acrylonitrile repeating units.	Acrylonitrile:  and acrylic copolymers: 
5.9	aramid[a]		AR	Fibre composed of linear macromolecules made up of aromatic groups joined by amide or imide linkages, at least 85 % of the amide or imide linkages being joined directly to two aromatic rings and the number of imide linkages, if the latter are present, not exceeding the number of amide linkages.	EXAMPLE 1: para-aramid  EXAMPLE 2: polybenzimidazole  NOTE In Example 1, the aromatic groups can be the same or different.
5.10	chlorofibre		CLF	Fibre composed of linear macromolecules having, in the chain, more than 50 % by mass of vinyl chloride or vinylidene chloride units (more than 65 % in the case in which the rest of the chain is made up of acrylonitrile, the modacrylic fibres being thus excluded).	Poly(vinyl chloride):  And poly(vinylidene chloride): 

Table 1 *(continued)*

No.	Generic name	Other denominations	Abbr.	Distinguishing attribute	Examples of chemical formulae
5.11	elastane	polyurethane (JP) spandex (US)	EL	Fibre composed of at least 85 % by mass of a segmented polyurethane and which, if stretched to three times its unstretched length, rapidly reverts substantially to the unstretched length when the tension is removed.	Macromolecules having alternate elastic and rigid segments with repetition of the group 
5.12	elastodiene[b]		ED	Fibre composed of natural or synthetic polyisoprene, or of one or more dienes polymerized with or without one or more vinyl monomers, and which, if stretched to three times its unstretched length, rapidly reverts substantially to the unstretched length when the tension is removed.	Natural polyisoprene extracted from the latex of *Hevea brasiliensis*, vulcanized: 
5.13	fluorofibre		PTFE	Fibre composed of linear macromolecules made from aliphatic fluorocarbon monomers.	Polytetrafluoroethylene: 
5.14	modacrylic		MAC	Fibre composed of linear macromolecules having, in the chain, at least 50 % and less than 85 % by mass of acrylonitrile.	Acrylic copolymers:  If X = H and Y = CI: acrylonitrile (vinyl chloride) copolymer If X = Y = CI: acrylonitrile (vinylidene chloride) copolymer