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Standard Guide for Textile Fibers¹

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1. Scope

1.1 This guide lists fibers used to manufacture textile products.

1.2 Specific groups of fibers are identified using tables of standard classification.

1.2.1 Animal fibers are identified by commercial name, biological name, end use, and geographic source.

1.2.2 Vegetable fibers are identified by commercial name, botanical name, staple length or description, and geographic source.

1.2.3 Mineral fibers are identified by commercial name, mineralogical name, chemical description, and geographic source.

1.2.4 Manufactured fibers are identified by commercial name, generic name, and major component.

1.3 Major fiber types used for textile purposes are further classified.

1.3.1 Manufactured fibers are identified as having either an organic base or inorganic base.

1.3.2 Natural fibers are identified as having a cellulosic, protein, or mineral base.

1.4 A glossary of generic names and definitions for manufactured fibers is included as additional information.

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

¹ This guide is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.92 on Terminology. Current edition approved Oct. 1, 2021. Published October 2021. Originally approved in 2010. Last previous edition approved in 2014 as D7641–10 (2014)^{ε1}. DOI: 10.1520/D7641-21.

2. Referenced Documents

2.1 *ASTM Standards:*²

D123 Terminology Relating to Textiles

2.2 *ISO Standards:*

ISO 2076:1999 (E) Textiles—Man-made Fibers—Generic Names

2.3 *Other Documents:*

Code of Federal Regulations, Title 16, Section 303.7

3. Terminology

3.1 *Definitions:*

3.1.1 *plastic, n—as related to textiles*, a polymer which can be combined with curatives, plasticizers, and fillers that can be molded under heat and pressure.

3.1.1.1 *Discussion—General* – One of a large group of organic compounds synthesized from cellular hydrocarbons, protein, and resins. The compounds are capable of being cast, extruded, or molded into various shapes.

Specific – Derivation from Greek “plastikos” which means “fit for molding”.

3.2 For definitions of textile terms used in the guide see Terminology **D123**.

4. Significance and Use

4.1 This guide is intended for use as a reference to improve the understanding of the relationship between commercial name, fiber identification and geographical regions of fiber origins that make up the composition of textile products.

4.2 This guide is intended to be used as a source of information only.

4.2.1 Detailed analysis, to verify specific data related to the composition of a particular fiber, may be necessary.

5. Animal (Protein Base) Fibers

5.1 See **Table 1**.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard’s Document Summary page on the ASTM website.

TABLE 1 Animal (Protein-Base) Fibers

Commercial and Biological Name ^a		Use	Geographical Regions
ALPACA WOOL	<i>Llama glama</i>	textiles	South America, North America

TABLE 1 *Continued*

	Commercial and Biological Name ^A	Use	Geographical Regions
American ring tail	<i>Bassariscus bacus astutus</i>	soft brushes	North America
Angora	See Rabbit, Angora, Mohair		
Badger	<i>Meles meles</i>	soft brushes	Asia, Europe
	<i>Camelus dromedarius</i>	textiles, soft	Asia
	<i>Camelus bactrianus</i>	textiles, coarse	Asia
CAMEL HAIR			
“Camel hair”	See Squirrel	soft brushes	Asia, North America
CASHMERE HAIR	<i>Caprahircus sp</i> (Goat)	textiles	Asia
Cattle hair	<i>Bos taurus</i>	upholstery	Asia, Europe
“Civet,” “Black Sable”	See Spotted Skunk		
“Fitch”	<i>Mephitis mephitis et al</i> (Skunk)	soft brushes	North America
Fox	<i>Vulpes fulva</i>	stuffing	North America, Europe
Genet	<i>Genetta</i>	soft brushes	Africa, Asia, Europe
Goat hair	<i>Capra sp</i>	soft brushes	Asia
Hog bristle	<i>Sus scrofa</i>	paint brushes	Asia, North America
Horse hair, body	<i>Equus caballus</i>	upholstery, felts	Asia, Europe, North America, South America
Horse hair, mane and tail	<i>Equus caballus</i>	upholstery	Asia, Europe
Kolinsky	See Sable, red		
LLAMA WOOL	<i>Llama glama</i>	textiles	South America
Mink	See Sable, red		
MOHAIR	<i>Caprahircus</i> (Angora goat)	textiles	Asia, Africa, North America
Muskrat, Northern	<i>Ondatra zibethicus</i>	textiles	North America, Russia
Muskrat, Southern	<i>Ondatra rivalicia</i>	textiles	North America
Ox hair, ear	<i>Bos taurus</i>	soft brushes	Asia, Europe, North America
Pony	<i>Equus caballus</i>	soft brushes, felts	Asia
RABBIT, COMMON	<i>Oryctolagus cuniculus</i>	fur felt	Australia, Europe, Asia, North America
RABBIT, ANGORA	<i>Oryctolagus cuniculus</i>	textiles	Europe, North America
Sable, red	<i>Mustela sibirica</i> (Kolinsky, China Mink, Jap Mink)	soft brushes, stuffing	Asia
SHEEP WOOL	<i>Ovis aries et al.</i>	textiles	all continents
Skunk	See “Fitch”		
Skunk, Spotted	<i>Spilogale sp</i>	soft brushes	North America
Squirrel	<i>Sciurus vulgaris et al.</i>	soft brushes	Asia, North America
SILK	<i>Bombyx mori</i>	textiles	Asia, Europe
SILK, TUSSAH	<i>Antheraea paphia et al.</i>	textiles	Asia
VICUNA WOOL	<i>Llama vicugna</i>	textiles	South America

^A The most common names are in capital letters; biological names are in italics.

6. Vegetable Fibers

6.1 See [Tables 2-4](#).

TABLE 2 Vegetable Fibers: Seed and Fruit-Hair

NOTE 1—The physical origins and the botanical classifications in [Tables 2-4](#) were reviewed by the U.S. Department of Agriculture.

	Commercial and Botanical Name ^A	Staple Length, in.	Geographical Regions
Akund	<i>Calotropis gigantes</i>		Asia
	<i>Gossypium, various sp</i>		
COTTON	<i>Gossypium sp</i>		
1. American Upland	<i>Gossypium hirsutum</i>	¾ to 1 7/16	all continents
2. Asiatic cultivated			
a. Chinese	<i>Gossypium arboreum</i>	¾ to 1	China
b. Indian	<i>Gossypium arboreum</i>	¾ to 1	India
	<i>Gossypium herbaceum</i>		
c. Levantine	<i>Gossypium herbaceum</i>	½ to 1	Asia
3. Extra-long staple barbadenses:			
a. Egyptian	<i>Gossypium barbadense</i>	1 1/8 to 1 5/8	Egypt, Sudan, Peru
b. American Egyptian	<i>Gossypium barbadense</i>	1 3/8 to 1 1/2	United States
c. Sea Island	<i>Gossypium barbadense</i>	1 1/2 to 2	West Indies
4. Medium staple, semi-rough barbadenses:			
a. Tanguis	<i>Gossypium barbadense</i>	1 1/8 to 1 1/4	Peru
b. Ishan	<i>Gossypium barbadense</i>	1 1/8 to 1 1/4	West Africa
c. Ashmouni (uppers)	<i>Gossypium barbadense</i>	1 1/16 to 1 1/8	Egypt
5. Short staple, rough barbadenses:			
a. Iquitos	<i>Gossypium barbadense</i>	1 to 1 1/16	Peru
b. Lengupa	<i>Gossypium barbadense</i>	1 5/16 to 1 1/4	Colombia
6. Perennial tree cottons:			
a. West Indian	<i>Gossypium hirsutum var Marie-Galante</i>	1 1/8 to 1 3/8	West Indies
b. Sertao and Serido	<i>Gossypium hirsutum var Marie-Galante</i>	1 1/8 to 1 3/8	Brazil
KAPOK	<i>Ceiba pentandra</i>	¾ to 1 ¼	Tropics
Milkweed Floss	<i>Asclepias various sp</i>	¾ to 1 ¼	North America
Ozone fiber	<i>Asclepias sp incarnata</i>		United States
Pochote	<i>Ceiba aesculifolia</i>		Mexico