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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 batus 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 1/16	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

TABLE 2 *Continued*

Commercial and Botanical Name ^A	Staple Length, in.	Geographical Regions
Samchu	<i>Chorisia species</i>	South America

^A Preferred or most common names are in capital letters; botanical names are in italics. The abbreviation *sp* is for the word “species,” the subdivisions of a genus.

TABLE 3 Vegetable Fibers: Bast and Leaf

Commercial and Botanical Name ^A	Description	Geographical Regions
ABACA	<i>Musa textilis</i> Neé	hard leaf fiber Philippine Islands, Central America, Borneo, Sumatra
<i>Abutilon avcennae</i> Gaertn	See <i>Abutilon theophrasti</i> Medic medii	
<i>Abutilon longicuspe</i>	Zada buack	coarse bast fiber
<i>Abutilon periplocifolium</i>	Maholtine	coarse bast fiber
<i>Abutilon theophrasti</i> Sweet Medic medii	CHINESE JUTE	coarse bast fiber China
<i>Aechmae magdalenae</i> André	<i>Pita floja</i>	fine leaf fiber Central and South America
AFRICAN SISAL	<i>Agave sisalana</i> , Perrine & Engelm	hard leaf fiber
<i>Agave cantala</i> Roxb	CANTALA	hard leaf fiber East Indies, Philippine Islands
<i>Agave cocui</i> Trel	Dispopo	coarse leaf fiber
<i>Agave hexapetala</i> Jacq	Cocuiza	coarse leaf fiber
<i>Agave deweyana</i> Trel	Zapupe larga	hard leaf fiber Mexico
<i>Agave falcata</i> Engelm	Guapilla	hard leaf fiber Mexico
<i>Agave fourcroydes</i> Lem	HENEQUEN	coarse leaf fiber Mexico, Cuba, Australia
<i>Agave funkiana</i> Koch & Bouché	JAUMAVE ISTLE	hard leaf fiber Mexico
<i>Agave lespinassei</i> Trel	Zapupe fuerte	hard leaf fiber Mexico
<i>Agave letonae</i> F. W. Taylor	SALVADOR SISAL	coarse leaf fiber El Salvador
<i>Agave lophanta</i> var. <i>poselgeri</i> (Salm-Dyck) Berger	TULA ISTLE	hard leaf fiber Mexico
<i>Agave pesa-mulae</i> Trel	Pata de mula, pie de mula	hard leaf fiber Mexico
<i>Agave pseudotequilana</i> Trel	Mescal	hard leaf fiber Mexico
<i>Agave sisalana</i> Perrine & Engelm	SISAL	hard leaf fiber Mexico, Brazil, Kenya, Tanganyika, Uganda, Angola, Mozambique, Haiti, Java, Sumatra
<i>Agave striata</i> Zucc	Espandinin	hard leaf fiber Mexico
<i>Agave tequilana</i> Weber	MESCAL	hard leaf fiber Mexico
<i>Agave zapupe</i> Trel	ZAPUPE	hard leaf fiber Mexico
Ake-ire	<i>Urena lobata</i> Cav	bast fiber
Aloes creole		
Aloes fiber		
Aloes malgache	See <i>Furcraea gigantea</i> Vent true aloe is not a fiber plant	
Ambari	<i>Hibiscus cannabarius</i> L	coarse bast fiber
<i>Ananas comosus</i> L. (Merr)	PINEAPPLE FIBER	fine leaf fiber West Indies, Philippine Islands
<i>Apocynum</i> sp	Kendyr	soft bast fiber Russia
Aramina	<i>Urena lobata</i> Cav	bast fiber
Arghan	<i>Aechmea magdalenae</i> André	
<i>Asclepias incarnata</i> L	Swamp milk weed	soft bast fiber United States
Awasthe hemp	<i>Hibiscus cannabarius</i> L (not hemp)	bast fiber
Bamia	<i>Urena lobata</i> Cav	
BANANA	<i>Musa sapientum</i> L	leaf fiber
Banana yucca	<i>Yucca mohavensis</i> Sarg	
Ban ochra	<i>Urena lobata</i> Cav	
Bariala	<i>Sida micrantha</i> Schrank	
Barreta	<i>Samuela carnerosana</i> Trel	
BEAR GRASS	<i>Nolina</i> sp, <i>Yucca</i> sp	
Benares hemp	<i>Crotalaria juncea</i> L (not hemp)	
Benares sunn	<i>Crotalaria</i>	
<i>Billbergia infusata</i> ^B	Infusata	soft leaf fiber South America
Bimli jute		
Bimli patam }	<i>Hibiscus cannabinus</i> L (not jute)	
<i>Boehmeria nivea</i> (L) Gaud	RAMIE, China grass	soft bast fiber Japan, China, Brazil, United States
Bolo-bolo	<i>Urena lobata</i> Cav	
Bombay aloe	<i>Furcraea gigantea</i> Vent (not true aloe)	
Bombay hemp	<i>Crotalaria juncea</i> L (not hemp)	
Bowstring hemp	<i>Sansevieria</i> sp (not hemp)	
Brazilian jute	<i>Corchorus</i> sp (<i>Hibiscus</i> and <i>Urena</i> are not jute)	
<i>Bromelia magdalenae</i>	See <i>Aechmea magdalenae</i> André	
<i>Bromelia karatas</i> L	Gravata	soft leaf fiber Brazil
<i>Bromelia laciniosa</i> Mart & Schult	Macambira	soft leaf fiber Brazil
<i>Bromelia longissima</i>	<i>Aechmea magdalenae</i> André	soft leaf fiber Brazil
<i>Bromelia saganaria</i>	<i>Pseudaranus saganarius</i> (Arruda) Camargo	soft leaf fiber Brazil
Broom fiber	<i>Cystisus scoparius</i> (L) Link, and/or <i>Spartium junceum</i> L	
Brown hemp	<i>Crotalaria juncea</i> L (not hemp)	
Cabulla	<i>Furcraea cabuya</i> Trel	
Cabuya	<i>Furcraea cabuya</i> Trel	

TABLE 3 *Continued*

Commercial and Botanical Name ^A	Description	Geographical Regions
Cabuya blanca Cabuya blanco		
Cabuya sin espina Cadillo	<i>F. cabuya</i> var. <i>integra</i> Trel	
Caesar weed }	<i>Urena lobata</i> Cav	
<i>Calotropis gigantea</i> Dry & Ait	Akund	
Canamo		
Canamo }	Spanish word for hemp	
Candilla		
Candillo }	<i>Urena lobata</i> Cav	
Canhamo	<i>Urena lobata</i> Cav	
<i>Cannabis sativa</i> L	HEMP	soft bast fiber all temperate zones
CANTALA	<i>Agave cantala</i> Roxb; differs from maguey in retting	
CAROA, <i>Carua</i>	<i>Neoglaziova variegata</i> Mez	
Carrapicho	<i>Urena lobata</i> Cav	
Cebu hemp	<i>Musa textilis</i> Née (not hemp)	
CEBU MAGUEY	<i>Agave cantala</i> Roxb (retted differently from Cantala)	
<i>Cephalonema</i> sp	Punga	bast fiber Belgian Congo
Chanvre	French word for hemp	
Chaparral yucca	<i>Hesperoyucca whipplei</i> (Torr) Trel	
China grass	<i>Boehmeria nivea</i> (L) Gaud	
CHINESE JUTE	<i>Abutilon theophrasti</i> Medic Medii	
Chingma	<i>Abutilon theophrasti</i> Medic	
Chino azul	<i>Agave tequilana</i> Weber	
Chino bermejo	<i>Agave palmaris</i> Trel	
Chique-chique	<i>Leopoldinia piassaba</i> Wallace & Archer	
Chuchao	<i>Furcraea andina</i> Trel	
Coconada hemp	<i>Crotalaria juncea</i> L (not hemp)	
Cocuiza	<i>Furcraea humboldtiana</i> Trel <i>F. hexapetala</i> , (Jacq) Urb	
Cocuiza mansa	<i>Furcraea gigantea</i> Vent	
CONGO JUTE	<i>Urena lobata</i> Cav (not jute)	bast fiber Belgian Congo, Brazil, Argentina, Venezuela, Cuba
<i>Corchorus capsularis</i> L	JUTE (white jute)	soft bast fiber Pakistan, India
<i>Corchorus olitorius</i> L	TOSSA, DAISEE (jutes)	soft bast fiber Pakistan, India
Cousin rouge	<i>Urena lobata</i> Cav	
<i>Crotalaria juncea</i> L	SUNN (not hemp)	hard bast fiber India
Cuban jute	<i>Urena</i> sp. <i>Malva</i> sp <i>Sida</i> sp (not jute)	
Cuban sisal	<i>Agave fourcroydes</i> Lem	
Culut culutan	<i>Urena lobata</i> Cav	
<i>Cytisus scoparius</i> (L) Link	Broom fiber, Spanish broom	soft bast fiber Italy, Spain
Da	<i>Hibiscus cannabinus</i> L	
DAISEE JUTE	<i>Corchorus olitorius</i> L	
Davao hemp	<i>Musa textiles</i> Née (not hemp)	
Deccan hemp	<i>Hibiscus cannabinus</i> (not hemp)	
Dha	<i>Hibiscus cannabinus</i> L	
Dispopo	<i>Agave cocui</i> Trel	
Ensete edulis (Gmel) Horan	<i>Musa ensete</i> Gmel	
Escobilla	<i>Sida</i> sp	
Espadinum	<i>Agave striata</i> Zucc	
FIQUE	<i>Furcraea macrophylla</i> Baker	
Flax	<i>Linum usitatissimum</i> L	soft bast fiber Argentina, Australia, Belarus, Belgium, Brazil, Bulgaria, Canada, Chile, China, Czech Republic, Egypt, Estonia, France, Germany, Hungary, India, Ireland, Italy, Latvia, Lithuania, Netherlands, New Zealand, Poland, Romania, Russia, Ukraine, United States, Yugoslavia
FORMIO	<i>Phormium tenax</i> Forst	
French hemp	<i>Cannabis sativa</i> L	
<i>Furcraea andina</i> Trel	Chuchao	hard leaf fiber Ecuador
<i>Furcraea cabuya</i> Trel	Cabuya	hard leaf fiber Central America
<i>Furcraea cubensis</i>	Cabulla	hard leaf fiber Haiti, Cuba, Venezuela, Dominican Republic
<i>Furcraea geminispina</i> Jacobi	Cocuiza	Venezuela
<i>Furcraea gigantea</i> Vent	Piteira, cocuiza mansa	Mauritius, Venezuela, Brazil, Tropics
<i>Furcraea hexapetala</i> (Jacq) Urb	<i>Furcraea cubensis</i>	Haiti, Cuba, Venezuela, Dominican Republic
<i>Furcraea humboldtiana</i> Trel	Cocuiza	Venezuela
<i>Furcraea macrophylla</i> Baker	FIQUE	Colombia
Galla	<i>Musa ensete</i> - <i>Ensete edulis</i> (Gmel) Horan	
Gambo hemp	<i>Hibiscus cannabinus</i> L (not hemp)	
Gombo hemp	<i>Hibiscus cannabinus</i> L (not hemp)	