Designation: D7641 – 10 (Reapproved 2014)$^{\varepsilon 1}$

Standard Guide for Textile Fibers[1]

This standard is issued under the fixed designation D7641; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

ε[1] NOTE—Editorial changes were made to Annex A1 in August 2014.

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.

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 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.

[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 July 1, 2014. Published August 2015. DOI: 10.1520/D7641-10R14E01.

[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	*Llama glama*	textiles	South America, North America
American ring tail	*Bassariscusbacus astutus*	soft brushes	North America
Angora	See Rabbit, Angora, Mohair		
Badger	*Meles meles*	soft brushes	Asia, Europe
CAMEL HAIR	*Camelus dromedarius*	textiles, soft	Asia
	Camelus bactrianus	textiles, coarse	Asia
"Camel hair"	See Squirrel	soft brushes	Asia, North America
CASHMERE HAIR	*Caprahircus sp* (Goat)	textiles	Asia
Cattle hair	*Bos taurus*	upholstery	Asia, Europe
"Civet," "Black Sable"	See Spotted Skunk		
"Fitch"	*Mephitis mephitis et al* (Skunk)	soft brushes	North America
Fox	*Vulpes fulva*	stuffing	North America, Europe

Copyright © ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959. United States

Documents
Document Sharing Hub
Full document details: ASTM D7641-10(2014)e1

TABLE 1 *Continued*

Commercial and Biological Name[A]		Use	Geographical Regions
Genet	*Genetta*	soft brushes	Africa, Asia, Europe
Goat hair	*Capra sp*	soft brushes	Asia
Hog bristle	*Sus scrofa*	paint brushes	Asia, North America
Horse hair, body	*Equus caballus*	upholstery, felts	Asia, Europe, North America, South America
Horse hair, mane and tail	*Equus caballus*	upholstery	Asia, Europe
Kolinksy	See Sable, red		
LLAMA WOOL	*Llama glama*	textiles	South America
Mink	See Sable, red		
MOHAIR	*Caprahircus* (Angora goat)	textiles	Asia, Africa, North America
Muskrat, Northern	*Ondatra zibethicus*	textiles	North America, Russia
Muskrat, Southern	*Ondatra rivalicia*	textiles	North America
Ox hair, ear	*Bos taurus*	soft brushes	Asia, Europe, North America
Pony	*Equus caballus*	soft brushes, felts	Asia
RABBIT, COMMON	*Oryctolagus cuniculus*	fur felt	Australia, Europe, Asia, North America
RABBIT, ANGORA	*Oryctolagus cuniculus*	textiles	Europe, North America
Sable, red	*Mustela sibirica* (Kolinksy, China Mink, Jap Mink)	soft brushes, stuffing	Asia
SHEEP WOOL	*Ovis aries et al.*	textiles	all continents
Skunk	See "Fitch"		
Skunk, Spotted	*Spilogale sp*	soft brushes	North America
Squirrel	*Sciurus vulgaris et al.*	soft brushes	Asia, North America
SILK	*Bombyx mori*	textiles	Asia, Europe
SILK, TUSSAH	*Antheraea paphia et al.*	textiles	Asia
VICUNA WOOL	*Llama vicugna*	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	*Calotropis gigantes*		Asia
	Gossypium, various sp		
COTTON	*Gossypium sp*		
1. American Upland	*Gossypium hirsutum*	¾ to 1 7/16	all continents
2. Asiatic cultivated			
a. Chinese	*Gossypium arboreum*	⅜ to 1	China
b. Indian	*Gossypium arboreum*	⅜ to 1	India
	Gossypium herbaceum		
c. Levantine	*Gossypium herbaceum*	½ to 1	Asia
3. Extra-long staple barbadenses:			
a. Egyptian	*Gossypium barbadense*	1⅛ to 1⅝	Egypt, Sudan, Peru
b. American Egyptian	*Gossypium barbadense*	1⅜ to 1½	United States
c. Sea Island	*Gossypium barbadense*	1½ to 2	West Indies
4. Medium staple, semi-rough barbadenses:			
a. Tanguis	*Gossypium barbadense*	1⅛ to 1¼	Peru
b. Ishan	*Gossypium barbadense*	1⅛ to 1¼	West Africa
c. Ashmouni (uppers)	*Gossypium barbadense*	1 1/16 to 1⅛	Egypt
5. Short staple, rough barbadenses:			
a. Iquitos	*Gossypium barbadense*	1 to 1 1/16	Peru
b. Lengupa	*Gossypium barbadense*	15/16 to 1 1/16	Colombia
6. Perennial tree cottons:			
a. West Indian	*Gossypium hirsutum var Marie-Galante*	1⅛ to 1⅜	West Indies
b. Sertao and Serido	*Gossypium hirsutum var Marie-Galante*	1⅛ to 1⅜	Brazil
KAPOK	*Ceiba pentandra*	¾ to ¼	Tropics
Milkweed Floss	*Asclepias various sp*	¾ to ¼	North America
Ozone fiber	*Asclepias sp incarnata*		United States
Pochote	*Ceiba aesculifolia*		Mexico
Samchu	*Chorisia species*		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.

Documents
Document Sharing Hub
Full document details: ASTM D7641-10(2014)e1

TABLE 3 Vegetable Fibers: Bast and Leaf

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

AVA Documents
Document Sharing Hub

Full document details: ASTM D7641-10(2014)e1

TABLE 3 *Continued*

Commercial and Botanical Name[A]		Description	Geographical Regions
Canamo			
Canamo }	Spanish word for hemp		
Candilla			
Candillo }	*Urena lobata* Cav		
Canhamo	*Urena lobata* Cav		
Cannabis sativa L	HEMP	soft bast fiber	all temperate zones
CANTALA	*Agave cantala* Roxb; differs from maguey in retting		
CAROA, *Carua*	*Neoglaziova variegata* Mez		
Carrapicho	*Urena lobata* Cav		
Cebu hemp	*Musa textilis* Née (not hemp)		
CEBU MAGUEY	*Agave cantala* Roxb (retted differently from Cantala)		
Cephalonema sp	Punga	bast fiber	Belgian Congo
Chanvre	French word for hemp		
Chaparral yucca	*Hesperoyucca whipplei* (Torr) Trel		
China grass	*Boehmeria nivea* (*L*) Gaud		
CHINESE JUTE	*Abutilon theophrasti* Medic Medii		
Chingma	*Abutilon theophrasti* Medic		
Chino azul	*Agave tequilana* Weber		
Chino bermejo	*Agave palmaris* Trel		
Chique-chique	*Leopoldinia piassaba* Wallace& Archer		
Chuchao	*Furcraea andine* Trel		
Coconada hemp	*Crotalaria juncea L* (not hemp)		
Cocuiza	*Furcraea humboldtiana* Trel *F hexapetalla*, (Jacq) Urb		
Cocuiza mansa	*Furcraea gigantea* Vent		
CONGO JUTE	*Urena lobata* Cav (not jute)	bast fiber	Belgian Congo, Brazil, Argentina, Venezuela, Cuba
Corchorus capsularis L	JUTE (white jute)	soft bast fiber	Pakistan, India
Corchorus olitorius L	TOSSA, DAISEE (jutes)	soft bast fiber	Pakistan, India
Cousin rouge	*Urena lobata* Cav		
Crotalaria juncea L	SUNN (not hemp)	hard bast fiber	India
Cuban jute	*Urena* sp. *Malva* sp *Sida* sp (not jute)		
Cuban sisal	*Agave fourcroydes* Lem		
Culut culutan	*Urena lobata* Cav		
Cytisus scuparius (L) Link	Broom fiber, Spanish broom	soft bast fiber	Italy, Spain
Da	*Hibiscus cannabinus L*		
DAISEE JUTE	*Corchorus olitorius L*		
Davao hemp	*Musa textiles Nèe* (not hemp)		
Deccan hemp	*Hibiscus cannabinus* (not hemp)		
Dha	*Hibiscus cannabinus L*		
Dispopo	*Agave cocui* Trel		
Ensete edulis (Gmel) Horan	Musa ensete Gmel		
Escobilla	*Sida sp*		
Espadinum	*Agave striata* Zucc		
FIQUE	*Furcraea macrophylla* Baker		
Flax	*Linum usitatissimum 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	*Phormium tenax* Forst		
French hemp	*Cannabis sativa L*		
Furcraea andina Trel	Chuchao	hard leaf fiber	Ecuador
Furcraea cabuya Trel	Cabuya	hard leaf fiber	Central America
Furcraea cubensis	Cabulla	hard leaf fiber	Haiti, Cuba, Venezuela, Dominican Republic
Furcraea geminispina Jacobi	Cocuiza	hard leaf fiber	Venezuela
Furcraea gingantea Vent	Piteira, cocuiza mansa	hard leaf fiber	Mauritius, Venezuela, Brazil, Tropics
Furcraea hexapetala (Jacq) Urb	Furcraea cubensis	hard leaf fiber	Haiti, Cuba, Venezuela, Dominican Republic
Furcraea hemboldtiana Trel	Cocuiza	hard leaf fiber	Venezuela
Furcraea macrophylla Baker	FIQUE	hard leaf fiber	Colombia
Galla	Musa ensete-Ensete edulis (Gmel) Horan		
Gambo hemp	*Hibiscus cannabinus L* (not hemp)		
Gombo hemp	*Hibiscus cannabinus L* (not hemp)		
Grand cousin	*Urena lobata* Cav		
Grand mahot cousin	*Urena lobata* Cav		
Gravata	*Bromelia Karatus L*		
Guapilla	*Agave falcata* Engelm		
GUAXIMA	*Urena lobata* Cav		
Guaxima roxa	*Urena lobata* Cav		
Guaxima vermehla	*Urena lobata* Cav		

Documents
Document Sharing Hub

Full document details: ASTM D7641-10(2014)e1