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Standard Terminology Relating to Wool[1]

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ε[1] NOTE—Terms were transferred editorially from subcommittee standards in February 2013.
ε[2] NOTE—Section 1 was added and editorial changes were made in September 2013.

1. Referenced Documents

1.1 *ASTM Standards:*[2]

D123 Terminology Relating to Textiles
D461 Test Methods for Felt (Withdrawn 2003)[3]
D519 Test Method for Length of Fiber in Wool Top
D584 Test Method for Wool Content of Raw Wool—Laboratory Scale
D1060 Practice for Core Sampling of Raw Wool in Packages for Determination of Percentage of Clean Wool Fiber Present
D1113 Test Method for Vegetable Matter and Other Alkali-Insoluble Impurities in Scoured Wool
D1234 Test Method of Sampling and Testing Staple Length of Grease Wool
D1282 Test Method for Resistance to Airflow as an Indication of Average Fiber Diameter of Wool Top, Card Sliver, and Scoured Wool
D1283 Test Method for Alkali-Solubility of Wools
D1294 Test Method for Tensile Strength and Breaking Tenacity of Wool Fiber Bundles 1-in. (25.4-mm) Gage Length
D1334 Test Method for Wool Content of Raw Wool—Commercial Scale
D1574 Test Method for Extractable Matter in Wool and Other Animal Fibers
D1575 Test Method for Fiber Length of Wool in Scoured Wool and in Card Sliver
D1576 Test Method for Moisture in Wool by Oven-Drying
D1770 Test Method for Neps, Vegetable Matter, and Colored Fiber in Wool Top
D2118 Practice for Assigning a Standard Commercial Moisture Content for Wool and its' Products
D2130 Test Method for Diameter of Wool and Other Animal Fibers by Microprojection
D2165 Test Method for pH of Aqueous Extracts of Wool and Similar Animal Fibers
D2252 Specification for Fineness of Types of Alpaca
D2462 Test Method for Moisture in Wool by Distillation With Toluene
D2475 Specification for Felt
D2524 Test Method for Breaking Tenacity of Wool Fibers, Flat Bundle Method—⅛-in. (3.2-mm) Gage Length
D2525 Practice for Sampling Wool for Moisture
D2720 Practice for Calculation of Commercial Weight and Yield of Scoured Wool, Top, and Noil for Various Commercial Compositions
D2816 Test Method for Cashmere Coarse-Hair Content in Cashmere
D2817 Specification for Maximum Cashmere Coarse-Hair Content in Cashmere
D2968 Test Method for Med and Kemp Fibers in Wool and Other Animal Fibers by Microprojection
D3991 Specifications for Fineness of Wool or Mohair and Assignment of Grade
D3992 Specifications for Fineness of Wool Top or Mohair Top and Assignment of Grade
D4510 Test Method for Counting Partial Cleavages in Wool and Other Animal Fibers
D4845 Terminology Relating to Wool
D6466 Test Method for Diameter of Wool and Other Animal Fibers By Sirolan-Laserscan Fiber Diameter Analyser
D6500 Test Method for Diameter of Wool and Other Animal Fibers Using an Optical Fiber Diameter Analyser

2. Terminology

acid content, *n— of felt*, the number of milliequivalents of acid present per unit weight of felt, measured under prescribed conditions. **D461**

alkali-solubility, *n—in wool*, the percent of clean wool that is soluble in a specified alkaline solution under controlled conditions of temperature and time. **D1283**

[1] This terminology is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.13 on Wool and Felt.

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[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.

[3] The last approved version of this historical standard is referenced on www.astm.org.

alpaca, *n*—the fleece and fiber produced by the alpaca, an animal of the genus Llama (*Lama glama pacus*). The fiber is obtained from several species, namely, Huacaya and Suri. **D2252**

DISCUSSION—Alpaca is normally classified according to type, representing particular combinations of characteristics appropriate to a specific use, or descriptive of geographic origin, breed or species of animal, or preparation for market.

animal fiber, *n*—any natural protein-base fiber. **D1574, D4510**

aqueous extract, *n—in wool testing*, the solution obtained by digesting a material with water or with a sodium chloride solution to dissolve soluble materials. **D2165**

average fiber diameter, *n—in wool and other animal fibers*, the average width of a group of fibers when measured on a projected image. **D2130, D2252, D3991, D3992**

average fiber diameter, *n*—the arithmetic mean width of a group of fibers. **D6500**

DISCUSSION—In wool and other animal fibers, all animal fibers, regardless of species, can be measured using the OFDA to determine average fiber diameter. **D6500**

black felt, *n*—those classifications of felt manufactured to various shades of the color black. **D2475**

breaking tenacity, *n*—the tenacity corresponding to the breaking load. **D1294, D2524**

DISCUSSION—Breaking tenacity is commonly expressed as grams-force per tex (gf/tex), grams-force per denier (gf/den), millinewtons per tex mN/tex), or millinewtons per denier (mN/den). Millinewtons are numerically equal to grams-force times 9.81.

burr-wool waste, *n*—waste removed by the burr guard of cards or burr pickers having a very short fiber and full of burrs or seeds. **D4845**

DISCUSSION—The nature of the waste varies according to the wool from which the burrs are taken.

carbonized and neutralized wool, *n*—a term descriptive of scoured wool processed to destroy cellulosic impurities by treating with a mineral acid or an acid salt, drying and baking, crushing, and dusting out the embrittled cellulosic matter followed by neutralization of the acidified wool. **D2118**

carded wool, *n*—scoured wool which has been processed through a carding machine. **D1575**

cashmere, *n—in roving, yarn, or fabrics*, cashmere hair or products made therewith having a cashmere coarse-hair content not exceeding a specified maximum percentage by length. **D2816, D2817**

cashmere coarse-hair, *n*—those coarse fibers in cashmere hair having widths greater than 30 µm. **D2816, D2817**

cashmere coarse-hair content, *n*—the total length of the cashmere coarse-hair fibers that are present, expressed as a percentage of the total length of all the cashmere hair fibers; that is, the percentage by length of cashmere coarse-hair in cashmere hair. **D2816, D2817**

cashmere down, *n*—those fibers in cashmere hair having widths of 30 µm or less. **D2816, D2817**

cashmere hair, *n*—the fibers produced by a form of goat (*Capra hircus*) indigenous to Asia and known as the cashmere goat. **D2816, D2817**

DISCUSSION—Characteristically, cashmere hair consists of fine down (undercoat) fibers and coarse (outercoat) fibers.

clean wool fiber present, *n—in raw wool*, the mass of wool base present in the raw wool, adjusted to a moisture content of 12 %, an alcohol-extractable content of 1.5 %, and a mineral matter content of 0.5 %. **D584, D1060, D1334**

colored fiber, *n—in wool top*, any fiber the color or shade of which differs from the normal color or shade of the fiber mass of the sample. **D1770**

combing wool, *n*—wool that is strong and strictly of combing length, that is, 2 in. (50 mm) or more. **D4845**

commercial composition, *n—in wool*, the percentages by weight of wool base, moisture, and other nonwool-base components in wool to which a specific commercial designation is applied. (Compare *commercial weight*.) **D2720**

commercial designation, *n—in wool*, a term applied to a lot of wool in a stated form, and having a specified commercial composition. **D2720**

commercial moisture content, *n*—the moisture calculated as a percentage of the weight of the wool, top, noils, yarn, fabric, etc., in the "as-is" condition; that is, containing whatever moisture, oil, grease, or other extraneous matter that may be present. **D2118**

DISCUSSION—The term "moisture regain" as defined in Terminology D123, leads to certain difficulties in defining the clean wool basis for calculation, which do not occur when the term "moisture content" is used. Moisture content can be applied directly to the product in the as-is condition while moisture regain cannot.

commercial weight, *n*—billed weight as determined by a generally accepted method or as agreed to by the purchaser and the seller. **D2720**

DISCUSSION—For shipments of commercially designated scoured wool, wool top, or wool noil, the generally accepted commercial weight is the weight of wool base contained in the shipment as determined by definite prescribed methods, plus the weights of moisture and other components corresponding to the commercial composition of the commercially designated material. **D2720**

constant-rate-of-extension (CRE) type tensile testing machine, *n—in tensile testing*, an apparatus in which the pulling clamp moves at a uniform rate, and the force-measuring mechanism moves a negligible distance with increasing force, less than 0.13 mm (0.005 in.). **D1294, D2524**

constant-rate-of-loading (CRL) type tensile testing machine, *n—in tensile testing*, an apparatus in which the rate of increase of the force is uniform with time after the first 3 s and the specimen is free to elongate, this elongation being dependent on the extension characteristics of the specimen at any applied force. **D1294, D2524**

constant-rate-of-traverse (CRT) type tensile testing machine, *n—in tensile testing*, an apparatus in which the pulling clamp moves at a uniform rate and the force is applied through the other clamp, which moves appreciably to actuate a force-measuring mechanism, producing a rate of increase of force or extension that is usually not constant and is dependent on the extension characteristics of the specimen. **D1294, D2524**

core, *n—in sampling fiber packages*, the portion of wool or other fiber obtained by using a sampling tube. **D1060**

cortex, *n—in mammalian hair fibers*, the principal body of the fiber made up of elongated cells. **D4510**

cuticle, *n—in mammalian hair fibers*, the layers of flattened cells enclosing the cortex, which forms an envelope of overlapping scales surrounding the fiber. **D4510**

diameter, average fiber—See **average fiber diameter.**

dimensional change in boiling water (felt), *n*—the change in length and width with any associated change in thickness produced by immersion in boiling water under specified conditions. **D461**

epidermis, *n—in mammalian hair fibers*, the outside or surface layer of the fiber consisting of flat, irregular, horny cells or scales. **D4845**

extractable matter, *n*—nonfibrous material in or on a textile, not including water, which is removable by a specified solvent or solvents as directed in a specified procedure. **D461, D1574**

DISCUSSION—Extractable matter does not include moisture but (*1*) is non-fibrous material, (*2*) is usually oily, waxy, or resinous in nature, and (*3*) may include protein, particularly if the extracting solvent is ethyl alcohol or contains ethyl alcohol.

felt, *n*—a textile structure characterized by interlocking and consolidation of its constituent fibers achieved by the interaction of a suitable combination of mechanical energy, chemical action, moisture, and heat but without the use of weaving, knitting, stitching, thermal bonding, or adhesives. **D2475**

DISCUSSION—In practice, light needling may be used to supplement the ability of the fibers to interlock and consolidate.

fineness, *n—of textile fibers*, a relative measure of size, diameter, linear density or mass per unit length expressed in a variety of units. **D2252, D3991, D3992**

DISCUSSION—The fineness of alpaca, wool, and other animal fibers is expressed as the average fiber width or average fiber diameter in micrometers (μm).

flame resistance, *n*—the property of a material whereby flaming combustion is prevented, terminated, or inhibited following application of a flaming or nonflaming source of ignition, with or without subsequent removal of the ignition source. **D461**

gage length, *n— in tensile testing*, the length of a specimen measured between the points of attachment to clamps while under uniform tension. **D1294, D2524**

grade, *n—in wool and mohair*, a numerical designation used in classifying wool and mohair in their raw, semi-processed, and processed forms based on average fiber diameter and variation of fiber diameter. **D2130, D3991, D3992**

DISCUSSION—This specification expresses the variation in fiber diameter by means of the standard deviation of the fiber diameter measurements. **D3991, D3992**

DISCUSSION—The term "grade" should not be confused with the terms "quality" and "type." "Quality" is a term that includes not only fineness but also characteristics such as length, crimp, strength, elasticity, luster, tactile hand, and color, all of which affect the spinnability of the fiber and the properties of the resulting yarn and fabric. The Bradford designations, for which no standards exist, use a scale similar to that for grade designations (for example: 64s, 56s, etc.) and refer to quality and not solely to fineness. "Type" is a term designating a particular combination of characteristics applicable to a specific use or descriptive of geographical origin, breed of sheep, or preparation for market. **D3991, D3992**

grade, *n*—in wool and mohair, a numerical designation used in classification of fibers in their raw, semi-processed, and processed forms based on average fiber diameter and variation of fiber diameter. **D6500**

gray felt, *n*—a blend of white fibers with naturally colored or dyed fibers or both and that has an overall gray appearance. **D2475**

grease wool, *n*—wool taken from the living sheep and which has not been commercially scoured. **D1234, D1574, D1576, D2462**

hair, *n*—natural animal fiber other than sheep's wool or silk. **D4845**

DISCUSSION—It is recognized that this definition implies a distinction between sheep's wool and the covering of other animals, notwithstanding similarity in their fiber characteristics. Thus the crimped form and the scaly structure are not confined to sheep's wool. It seems desirable in the textile trade, however, to avoid ambiguity by confining the term wool to the covering of sheep and to have available a general term for other fibers of animal origin. Normally the less widely used fibers are known by name, for example, alpaca, mohair, etc., but collectively they are classed as hairs.

kemp fiber, *n*—a medullated animal fiber in which the diameter of the medulla is 60 %, or more, of the diameter of the fiber. **D2968**

laboratory sample, *n*—a portion of material taken to represent the lot sample, or the original material, and used in the laboratory as a source of test specimens. **D1770, D2525**

laboratory sample, *n—in wool top*, the portions drawn from the lot in accordance with the described procedure. **D1770**

lot, *n—in acceptance sampling*, that part of a consignment or shipment consisting of a material from one production lot. **D1770, D2525**

lot, *n—in wool, top*, the entire quantity, not exceeding 20 000 lb (9100 kg) of a single combing, that comprises a single unit for which a test for neps, vegetable matter or colored fiber, or all three combined is desired. **D1770**

med fiber, *n*—a medullated animal fiber in which the diameter of the medulla is less than 60 % of the diameter of the fiber. **D2968**

medulla, *n—in mammalian hair fibers*, the more or less continuous cellular marrow inside the cortical layer in most medium and coarse fibers. **D2968**

medullated fiber, *n*—an animal fiber that in its original state includes a medulla. **D2968**

merino, *adj*—from pure-bred merino sheep. **D4845**

DISCUSSION—Merino wool usually has a fiber diameter of 24 μm or less.

mohair, *n*—the hair of the Angora goat, *Capra* species. **D3991, D3992**

moisture content, *n*—the amount of moisture in a material determined under prescribed conditions and expressed as a percentage of the mass of the moist material, that is, the original mass comprising the dried substance plus any moisture present. **D1576, D2462**

DISCUSSION—The term "mass" is the correct designation for the property commonly designated as "weight." A slight amount of residual moisture may not be removed from a specimen subjected to oven drying because of the relative humidity of the ambient air. The amount of moisture retained by a specimen may be estimated from published data.[4] There may also be a slight additional loss in mass caused by the evaporation of volatile material other than water, the amount depending on the characteristics of any added oils or emulsions.

moisture-free, *adj*—the condition of a material that has been exposed in an atmosphere of desiccated air until there is no further significant change in its mass. **D1576, D2462**

DISCUSSION—Heating the material and the desiccated air to temperatures as high as 110°C increases the rate of moisture loss but does not change the final equilibrium mass of the moisture-free material.

moisture regain, *n*—the amount of moisture in a material determined under prescribed conditions and expressed as a percentage of the mass of the moisture-free material. **D1576, D2462**

natural fiber, *n*—a class name for various genera of fibers (including filaments) of (*1*) animal, (*2*) mineral, or (*3*) vegetable origin. **D4845**

DISCUSSION—Examples—(*1*) Silk and wool, (*2*) asbestos, (*3*) cotton, flax, jute, ramie.

needled felt, *n*—a textile structure composed entirely of fibers physically interlocked and reoriented through the action of felting needles. **D2475**

nep, *n*—one or more fibers occurring in a tangled and unorganized mass. **D1770**

DISCUSSION—For the purpose of this test method, the mass of unorganized fibers retains its identity upon removal from a fibrous strand. **D1770**

noil, *n*—the short fibers removed in combing; applied particularly to wool, but also to other fibers such as cotton, silk, and rayon. **D4845**

other alkali-insoluble impurities, *n—in scoured wool*, oven-dried, ash-free, alcohol-extractives-free, alkali-insoluble substances other than vegetable matter base, such as skin, cotton or other fibers, paper, string, tag (dung) pieces, paint pieces, etc. **D584, D1113, D1334**

orthopedic and surgical felt, *n*—a white, soft, low density, highly resilient felt. **D2475**

DISCUSSION—Such felts are commonly used in splint pads, abdominal supports, orthopedic devices, and fracture cast linings as well as other medical applications.

oven-dried, *adj*—the condition of a material that has been heated under prescribed conditions of temperature and humidity until there is no further significant change in its mass. **D584, D1113, D1334, D1576, D2462, D2720**

DISCUSSION—An oven-dried material will retain a small amount of moisture which is dependent on the temperature and relative humidity of the atmosphere in contact with the material during the drying process. An oven-dry material will only be moisture-free when the air supplied to the drying oven has been previously desiccated. The term "mass" in the above definition is the correct designation for what is commonly designated "weight."

DISCUSSION—As the term "oven-dried" is used in this recommended practice, the prescribed conditions are heating to 105 ± 2°C in a forced-draft oven supplied with air from an atmosphere having a relative humidity of 65 ± 2 % at a temperature of 20 ± 2°C. A temperature of 20 ± 2°C is used in this recommended practice instead of 21.1 ± 1°C because international testing is frequently involved. **D2720**

papermaker's felt, *n*—a fabric, made from wool or man-made fibers or mixtures of both, fabricated as an endless belt for use on a paper making machine. (See also **felt** and **needled felt.**) **D2475**

DISCUSSION—Papermaker's felt received its name because it replaced the sheets of felt used in squeezing the water from newly formed, manually made sheets of paper. Some finished papermaker's felts have matted surfaces similar to wool felts.

partial cleavage, *n—in textiles*, a transverse gouge, cut or other cross-wise rent in the fiber. Clearly penetrating at least the cuticle of the fiber. **D4510**

part wool felt, *n*—a felt composed of any one of, or a combination of, new and recycled wool fibers mixed with one or more man-made fibers, vegetable fibers, or animal fibers other than wool. **D461, D2475**

pH, *n—in common usage*, a measure of acidity or alkalinity of a solution, on a logarithmic scale, with neutrality represented by a value of seven, with increasing acidity represented by decreasingly smaller values, and with increasing alkalinity represented by increasingly larger values. **D2165, D461**

DISCUSSION—For a technical discussion of pH, including such phenomena as the effect of temperature on pH, see any recognized chemistry text. The pH of textiles is generally determined on aqueous extracts of the textile being tested. **D2165, D461**

pulled wool, *n*—wool taken from the pelt of a slaughtered sheep and which has not been commercially scoured. Syn. *slipe wool* and *skin wool.* **D1576, D2462**

raw wool, *n*—wool or hair of the sheep in the grease, pulled, or scoured state. (See also *scoured wool.*) **D584, D1060, D1334, D1576, D2462**

[4] Toner, R. K., Bowen, C. F., and Whitwell, J. C., "Equilibrium Moisture Relations for Textile Fibers," *Textile Research Journal*, Vol 17, January 1947, pp. 7–18.

recycled wool, *n—as defined in the Wool Products Labeling Act as amended in 1980*, "the resulting fiber when wool has been woven or felted into a wool product which, without ever having been utilized in any way by the ultimate consumer, subsequently has been made into a fibrous state, or the resulting fiber when wool or reprocessed wool has been spun, woven, knitted, or felted into a wool product which, after having been used in any way by the ultimate consumer, subsequently has been made into a fibrous state." **D1294, D1574, D1576, D2475, D2462**

DISCUSSION—In the amended Act of 1980, the term "recycled wool" replaced the terms "reprocessed wool" and "reused wool."

roping, *n*—a term used for roving in the woolen system of spinning. **D4845**

sample, *n*—(*1*) a portion of a lot of material which is taken for testing or record purposes. (*2*) the group of specimens used, or observations made, which provide information that can be used for making statistical inferences about the population from which they were drawn. **D2525**

sampling unit, *n—in wool*, a portion of material that is taken at one time from one physical location and that is combined with similar portions to make up the laboratory sample. **D2525**

DISCUSSION—A sampling unit may or may not have the same physical size as a specimen. Examples of sampling units include: (*1*) for bulk materials seen as scoured wool, a handful of wool conforming to a stated mass range, (*2*) for cored material, a minimum mass of material collected by one insertion of a coring tool, (*3*) for sliver, a stated length of material, and (*4*) a single package, such as a ball of top.

scoured wool, *n*—wool from which the bulk of impurities has been removed by an aqueous or solvent washing process. **D1575, D1576, D2462**

DISCUSSION—Although it is no longer in its original raw state, scoured wool is generally accepted as raw wool. **D1576, D2462**

shrinkage, *n*—a decrease in one or more dimensions of an object or material. **D461**

slipe wool—See **pulled, wool.**

skin wool—See **pulled, wool.**

sliver, *n*—a continuous strand of loosely assembled fibers that is approximately uniform in cross-sectional area and without twist. **D1282**

snippet, *n*—a wool or other animal fiber which has been cut to a specified length. **D6466, D6500**

specialty felt, *n*—one of a number of special purpose felt structures available for, but not limited to, a specific end-use application. **D2475**

DISCUSSION—Orthopedic and surgical felts are examples of specialty felts. Additional information on these types is available in NTA Specifications FS14-68/71.[5]

specific area, *n—of wool*, the ratio of the fiber surface to fiber volume. **D1282**

specific gravity, *n—of felt*, the relative mass per unit volume of felt expressed as a percentage of the mass per unit volume of water. **D2475**

specimen, *n*—a specific portion of a material or a laboratory sample upon which a test is performed or which is selected for that purpose. **D2525**

splitting resistance, *n—of felt*, the force required to overcome the interfacial strength of a material and specifically to separate a felt into two layers (of approximately equal thickness). **D461**

staple, *n—in grease wool*, a tuft or lock of fibers which naturally cling together, as found in a fleece. **D1234**

staple length, *n—in grease wool*, the length of a staple obtained by measuring the natural staple without stretching or disturbing the crimp of the fibers. **D1234**

supported needled felt, *n*—a needled felt that is composed entirely of fibers physically interlocked and reoriented in combination with interlay, scrim, or foundation of knitted, stitched, bonded, or extruded structure. **D461, D2475**

tenacity, *n*—the tensile stress expressed as force per unit linear density of the unstrained specimen. **D1294**

tenacity, *n—in a tensile test*, the force exerted on the specimen based on the linear density of the unstrained specimen. **D2524**

DISCUSSION—*In textiles*, tenacity is considered a property of fibers and yarns, and tensile strain is the complimentary property of fabrics. In direct yarn numbering systems, tenacity is force divided by linear density. In indirect yarn numbering systems, tenacity is force times the reciprocal linear density.

tensile strength, *n*—the strength of a material under tension as distinct from compression, torsion, or shear.

DISCUSSION—Technically, strength is a characteristic that is expressed in terms of force. Historically, however, tensile strength has been commonly expressed in terms of force per unit base, for example, the cross-sectional area of the unstrained material. Some common units are newtons per square metre (N/m^2) and pounds-force per square inch (psi).

test specimen, *n—for wool top*, a length of specified mass taken at random from a length of wool top selected as a laboratory sample. **D1770**

top, *n—in wool*, a continuous untwisted strand of wool fibers from which the shorter fibers or noils have been removed by combing. **D519, D1282, D1770, D3992**

unsupported needled felt, *n*—a needled felt that is composed entirely of fibers physically interlocked and reoriented with, and of themselves without an interlay, scrim, or foundation of knitted, stitched, bonded, or extruded structure. **D461, D2475**

vegetable matter, *n—in wool top*, the pieces of burrs, seeds, shive, leaves, twigs, and grasses which have escaped removal in processing, also foreign vegetable fibers such as hemp, sisal, etc., if present. **D1770**

[5] Available from Northern Textile Association, 230 Congress St., Boston, MA 02110.

vegetable matter base, *n—in raw wool*, oven-dried scoured burrs, seeds, twigs, leaves, and grasses, free of mineral matter and alcohol-extractable matter. **D584, D1113, D1334, D2720**

vegetable matter present, *n—in raw wool*, the weight of vegetable matter base present in the raw wool, adjusted to a moisture content of 12 %, an alcohol-extractives content of 1.5 %, and a mineral matter content of 0.5 %. **D584, D1334**

virgin wool, *n— as defined in the Wool Products Labeling Act*, "the terms 'virgin' or 'new' as descriptive of a wool product, or any fiber or part thereof, shall not be used when the product or part so described is not composed wholly of new or virgin fiber which has never been reclaimed from any spun, woven, knitted, felted, braided, bonded, or otherwise manufactured or used product." **D1576, D2462**

water retained, *n—in textiles*, the amount of water absorbed by the fibers, adsorbed on the surface of the fibers, and held within the voids of the fabric after immersion, measured under specified conditions. **D461**

white wool, *n*—wool having shade variations from true white to creamy white but free of pigmented, dyed, or otherwise colored wools. **D2475**

DISCUSSION—The shade variations in white wool can be caused by range conditions including forage, soil, rain, or lack thereof as well as the health of the animal.

wool, *n*—the fibrous covering of the sheep, *Ovis* species. **D1282, D1283, D1294, D1574, D1575, D1576, D2118, D2462, D2475, D2524, D2968, D3991, D3992**

DISCUSSION—

General, for the purposes of these standards, wool is used in the generic sense as defined in the Wool Products labeling Act of 1939 and amended Act of 1980.

Specific, as defined in the Wool Products Labeling Act of 1939, "the fiber from the fleece of the sheep or lamb, or hair of the Angora goat or Cashmere goat (and may include the so called specialty fibers from the hair of the camel, alpaca, llama, and vicuna) which has never been reclaimed from any woven or felted wool product".

DISCUSSION—For the purposes of this method, the word *wool* is used in the generic sense, and includes both wool as defined in the Wool Products Labeling Act of 1939 as well as recycled wool as defined in the amended Act of 1980. **D1576, D2462**

DISCUSSION—For the purposes of this method, the word *wool* is used in the generic sense, and includes reprocessed and reused wool as well as *wool* as defined in the *Wool Products Labeling Act* of 1939: "the fiber from the fleece of the sheep or lamb, or hair of the Angora goat or Cashmere goat (and may include the so called specialty fibers from the hair of the camel, alpaca, llama, and vicuna) which has never been reclaimed form any woven or felted wool product." **D2524**

wool, *n—as defined in the Wool Products Labeling Act of 1939*, "the fiber from the fleece of the sheep or lamb, or hair of the Angora goat or Cashmere goat (and may include the so called specialty fibers from the hair of the camel, alpaca, llama, and vicuna) which has never been reclaimed from any woven or felted wool product. **D1576, D2462**

wool base, *n*—oven-dried scoured wool free of alcohol-extractable matter, mineral matter, vegetable matter, and all impurities. **D584, D1334, D2720**

wool content, *n*—the quantity of new and recycled wool, as defined in the Wool Products Labeling Act, which is determined by chemical analysis. **D2475**

DISCUSSION—Felt 34R1, as an example, which theoretically is made from 100 % wool fiber, may contain incidental amounts of other natural or man-made fibers, residual wool fats and oils, and processing soaps which may reduce the actual wool content on the chemical analysis basis to 95 %.

wool felt, *n*—a felt composed wholly of any one of or a combination of new or recycled wool fibers. **D461, D2475**

wool, grease—See **grease wool.**
wool, new—See **wool, virgin.**
wool, raw—See **raw wool.**
wool, recycled—See **recycled wool.**
wool, reprocessed—See **recycled wool.**
wool, reused—See **recycled wool.**

woolen yarn, *n*—yarn spun from wool fibers which have been carded but not combed or gilled. **D4845**

worsted-spun, *adj*—of, or pertaining to, materials produced by the worsted system of yarn spinning as distinct from materials made by the woolen system of spinning. **D4845**

worsted yarn, *n*—yarn spun from wool fibers which have been carded, and either gilled or combed, or both. **D4845**

yield, *n—in raw wool*, the combined weight (mass) of clean wool fiber present and vegetable matter present, as a percentage of the raw wool weight. **D584**

yield, *n—of wool*, the percentage of a designated commercial composition obtained by processing a lot of raw wool. (See also *commercial composition*.) **D2720**

zephyr yarn, *n*—a variety of soft worsted yarn characterized by a low twist and spun from wool which is as fine or finer in average diameter with U.S. Standard 64's grade tops. **D4845**