

Llmapaedia

Llama/Alpaca Wool Fiber Glossary

Absorbency

The propensity of a material to take in and retain liquid, usually water.

Acid dye

A dye which is applied to fabric or fiber from an acid dye solutions. It can be used on nylon, wool and other animal protein fibers, silk, acrylic, polypropylene and blends of the above. It is reasonably colorfast to light and laundering.

Animal fibers

Protein hair, fur, and cocoon materials taken from animals for the purposes of weaving, knitting or felting into a fabric. Typical animal fibers include, wool, mohair, llama, alpaca, cashmere, camel and vicuna and cocoon material (silk).

Bale

A bag, sack, square or oblong package into which fiber is compressed. The size and weight of a bale is variable.

Batt or Batting

Sheets or rolls of carded cotton or wool or other fiber or mixtures thereof which is used for stuffing, padding, quilting, felting and spinning.

Beater

A toothed or spiked roll in an opening or cleaning machine used for processing fiber into yarn.

Blend

A textile containing two or more different fibers, variants of the same fiber or different colors and grades of the same fiber.

Blending

The mixing of quantities of the same fiber taken from many lots or of different types of fiber to produce a uniform result.

Blowout factor

The rapidity with which an animal's fiber diameter increases (thickens) with age.

Bradford System

One of the three principal methods of spinning worsted yarn in which longer fibers are utilized to produce very compact and sleek yarns.

Breaking Length

A measure of the breaking strength of a yarn. It is the calculated length of yarn which equals its breaking load and is equal to the tensile stress at rupture of the yarn.

Breaking Load

The maximum stress needed to rupture a fiber, yarn or fabric in a tension test.

Brushing

A finishing process for knit or woven fabrics in which brushes or other abrading elements are used to raise a nap.

Card or Carder

A textile machine or hand implement that separates fibers, removes some vegetation and spreads the fibers into a web for subsequent operations that culminate in spinning. The hand implement has iron teeth or wires and is used in pairs. It can be used to raise the nap on a fabric.

Carding

A preliminary process in manufacturing spun yarn in which the fibers are separated, distributed, equalized and formed into a web. The web can be very thin or thick. The process of carding removes some impurities, and a certain amount of short or broken fibers.

Coefficient of Variation (CV)

Comber

A machine used for the combing process in manufacturing.

Combing

A step that is subsequent to carding in worsted spinning which separates the long, choice desirable fibers from the neps and shorter stock (noils), removes almost all foreign matter and arranges fibers in parallel order forming a sliver. Combed yarns are finer, cleaner, more lustrous and stronger than carded yarns.

Core Spinning

A yarn spinning process by which a filament (usually elastic under tension) is covered with a sheath of staple fibers to produce a stretchable yarn. The resultant yarn and fabric have the characteristics of the sheath fiber along with the advantage of stretch and recovery.

Consistency

The uniform distribution of all the fiber characteristics within each lock and throughout the entire fleece.

Core Sampling

The gathering of specimens of fiber for testing from bales or packs by inserting a hollow tube into each package.

Core Yarn

A yarn made by winding one yarn around another to give the appearance of a yarn made solely of the outer yarn.

Cortical Cells

The spindle shaped cells forming the inside structure of a fiber.

Crease Recovery

The ability of a creased or wrinkled fabric to recover its original shape over time.

Crease Retention

The ability of a fabric to retain a pleat or a fold which has been made deliberately.

Crimp

An organized or uniform waviness in an individual lock of fiber.

Crimp Recovery

The ability of a yarn or fiber to return to its original crimped state after being released from a tensile force.

Crinkle

The waviness of each individual fiber when separated from a lock. It is responsible for elasticity and is usually irregular.

Cuticle

The outer layer of cells of a fiber which are hard, flattened and do not fit together evenly and whose tips point away from the fiber shaft forming serrated edges. These serrated edges cause the fibers to grip together during processing and manufacturing. *See also Scales*

Density

The number of hair follicles per square inch of skin.

Direction of twist (S twist or Z twist)

To determine twist, hold yarn in a vertical position and examine the angle of the spiral. The angle of the S twist will correspond to the center portion of the S. The angle of the Z twist will correspond to the center portion of the Z. When spinning, the wheel should rotate counter clockwise for an S twist and rotate clockwise for a Z twist. In South America, yarn that is spun with Z twist is believed to be magic.

Drafting

The process of drawing out a strand of material by pulling it apart. Commercially, this is done between rollers and in handspinning it is done with the hands.

Dye

A colorant that becomes molecularly dispersed at some point during application to fiber and exhibits some degree of permanence. There are many application classes of dyes, including acid dyes, disperse dyes, reactive dyes, and natural dyes. Dyes may be generally divided into natural and synthetic types. Natural dyes are obtained from berries, flowers, roots, bark and more. Synthetic dyes are chemical compounds.

Dyeability

The capacity of fibers to accept dyes.

Dyebath

The solution (usually water) containing the dyes, dyeing assistants and any other ingredients necessary for dyeing.

Dyeing

The process of applying a comparatively permanent color to fiber, yarn or fabric by immersing in a bath of dye.

Exhaustion

The amount of dye taken from the dyebath by the fiber, yarn or fabric being dyed.

Fast Color

A dye which is stable to color destroying agents, such as sunlight, perspiration, washing, abrasion, and wet and dry pressing.

Felt

An ancient technique that produces a non woven sheet of matted material which is most frequently made from wool, hair or fur created by the entanglement of a mass of fibers that takes place when heat, moisture and pressure are combined.

Feltability

The degree to which fibers will consolidate by felting.

Felting Property

The property of wool and some other fibers to interlock with each other to create felt. Felting is caused by the directional friction effect of scales on the fiber surfaces. The factors involved in felting are the fiber structure, the crimp of the fibers, the ease of deformation of the fiber and the fiber's power of recovery from deformation.

Fiber

A unit of matter characterised by having a length at least 100 times its diameter or width. The fundamental component used in making textile yarns and fabrics.

Fiber Fineness

The mean fiber diameter which is usually expressed in microns.

Fleece

The entire coat sheared from an animal at one time.

Follicle

The skin structure from which hair or wool fiber grows.

Fulling

A finishing process in which the woven or knitted cloth is subjected to moisture, heat and friction causing it to shrink considerably in both directions and become compact and solid. In heavily fulling fabrics both the weave and the yarn are obscured, thus giving the appearance of felt.

Fulling Agent

A chemical, usually a surfactant, that acts as a lubricant during the process of fulling.

Grading

The classification of fibers according to such properties as staple length, strength, evenness and fineness. The sorting of fiber.

Guard Hair

The long, stiff, usually coarse fiber which projects from the woolly undercoat of a mammal's pelt.

Hair Fiber

A specialty fiber obtained from an animal other than a sheep. It is usually from the goat and camel families (mohair, cashmere, angora, llama, alpaca, vicuna and guanaco). These products, except angora, may be included in the term wool according to the Wool Products Labeling Act of 1939.

Hand or Handle

The tactile feel of fiber related to the combination of all the fiber characteristics.

Handspun

Yarns which are spun by hand using a spinning wheel or electric spinner.

Hank

A definite length of textile material that varies according to the material. A hank of wool is 560 yards, cotton and silk is 840 yards and linen is 300 yards.

Identification Test

Any procedure for determining kinds of fibers, yarn construction, fabric construction, or finish and coloring of textiles. Physical, chemical, microscopic and other methods may be used.

Impurity

Any undesirable extraneous material present in a fleece or textile product.

Kemp

A short, coarse wool or hair fiber with a large (>60% of fiber diameter) unevenly developed medulla that causes uneven dyeing.

Keratin

A protein substance which is the chief component of wool fiber.

Knitting

A method of constructing fabric by interlocking a series of loops of one or more yarns.

Loom

A device or machine for weaving cloth.

Luster

The light reflective quality of fiber exhibited in shine and gloss.

Mean Fiber Diameter

The average diameter (thickness) of a group of fibers from an animal.

Medulla

The hollow, rounded cells which are found along the center of the main axis of a fiber. They may run continuously along the length of the fiber.

Medulated Fiber

A true hair fiber which does not have the same spinning and dyeing properties as wool, alpaca and llama. Medullated fibers are kemp, found in on the faces, head and legs of sheep and guard hair which is grown by goats and some alpacas and llamas.

Micron

A unit of measurement used in assessing the diameter of a fiber which equals 1/25,000 of an inch.

Natural Dye

Dye obtained from substances such as roots, bark, wood, berries, lichens, insects, shellfish and flowers.

Natural Fiber

Fiber obtained from animal, vegetable or mineral sources, as opposed to those regenerated or synthesized from chemicals.

Nep

A small knot of tangled fibers, usually consisting of short, dead or immature fiber.

Noil

Short fibers removed during the combing process of yarn making.

Picker

A piece of equipment that opens fiber and removes foreign matter.

Picking

The process of opening fiber and/or removing foreign matter.

Pin-drafting

A system of drafting in which the fibers are oriented relative to one another in the sliver and are controlled by rolls of pins between the drafting rolls. It is primarily used for long fibers in the semi-worsted and worsted spinning systems.

Ply

To twist together two or more single yarns to form another yarn or cord. One of any number of single yarns twisted together to form a yarn.

Production Sequence

shearing, sorting, opening, cleaning, carding, drawing, possibly combing, possibly roving, twisting or spinning

Protein Fiber

A fiber composed of protein, including such naturally occurring animal fibers as wool, silk, alpaca, llama and other hair and fur fibers.

Rejects

Fiber which is unacceptable because of poor color, tenderness, seeds, burrs, kempiness, stains, lumps and tufts.

Resilience

The power of recovery to original shape and size after removal of the strain which caused the deformation. A fiber may possess this quality to spring back to its original state after being crushed or wrinkled. Resilience is sometimes referred to as memory.

Roving

A loose assemblage of fibers drawn or rubbed into a single strand, usually thicker than a sliver.

Sample

A small portion of a larger amount of material which is taken for testing.

Scales

Also known as cuticle. The outer layer of cells of mammal hair fiber which are hard, flattened, do not fit together evenly and whose surfaces overlap and enclose the cortex. The size and shape vary from species to species and are important characteristics used in fiber identification. The exposed edges of scales point towards the tips of animal fibers and give rise to the friction effect and felting.

Scouring

Cleaning raw wool or fiber and removing such impurities as dirt, sweat, and grease by washing with soaps and alkalis or with chemicals.

Second Cut

The short pieces in a fleece caused by careless shearing. Second cuts are caused by re-shearing areas not sheared to the skin. This diminishes the value of a fleece.

Semi-worsted Spinning System

Spinning similar to the worsted spinning system in which the combing process is eliminated.

Semi-worsted Yarn

Yarn spun from sliver carded (not combed) and pin-drafted on worsted spinning system machines.

Shearing

Cutting the fleece from an animal with electric or hand shears.

Shrinkage

A reduction in length or width of a material caused by certain treatments, especially washing. A loss of weight and volume of wool due to scouring when grease, sweat, and foreign matter are removed.

Skirting

Removing the stained, unusable, or undesirable portions of a fleece.

Sorting

Separating a fleece or fiber into groups of comparable character and quality. The grading of fiber.

Spinning

The final step in the production of yarn. The twisting of the the sliver or roving. The entire process of making yarn from fiber.

Standard Deviation (SD)

The amount of variation from the mean (average) within a single data set. The greater the standard deviation, the greater the range (difference between the highest and lowest values) of values within the sample.

Staple

A synonym for fiber. A lock or tuft of wool.

Staple Length

The length of sheared locks obtained by measuring the natural staple without stretching or disturbing the crimp. The fiber regrowth or regeneration from one shearing to the next.

S-twist

see direction of twist

Style

The combination of crimp and crinkle ranging from good crimp and good crinkle to no crimp and no crinkle.

Synthetic Dye

A complex colorant derived from coal tar.

Tags

Broken or dung-covered wool and other wastes that are swept from the floor of shearing areas.

Tender Wool

A wool staple with weak places in the fibers. It can only be used for carding rather than combing. It is caused by illness, excessive exposure to weather, or poor nutrition.

Tensile Strength

The amount of pulling a fiber can withstand before it stretches and breaks.

Textile

A broad classification of materials that can be utilized in constructing fabrics and the fabrics made with those materials.

Texture

The surface effect of cloth or fiber as dull, lustrous, wooly, stiff, soft, fine, coarse, open or closely woven. Also known as hand or feel.

Tippy Wool

The badly weathered ends of fleece, usually contain a considerable amount of grease, dirt and other debris. The tips dye differently from the rest of the fleece.

Top

A strand of longer fibers that have been straightened, made parallel and separated from the shorter fibers by combing.

Top Sample

A sample of top.

Total Fleece Weight

The weight of the entire raw fleece.

Twist

The number of turns about its axis per unit of length observed in a yarn or other textile strand. It is usually indicated as turns per inch or tpi.

Virgin Fiber

According to the Federal Trade Commission, wool which has not been processed in any way, shape or form. Hair and other specialty fibers are classed as wool as measured by the Federal Trade Commission. This term is a misnomer when used in advertising or on labels.

Weaving

Making cloth by interlacing yarns at right angles according to a predetermined pattern.

Wool

Traditionally, the fibers covering the skin of a sheep. According to the Wool Products Labeling Act of 1939, the term includes the fleece of a sheep, angora goat, undercoat of a cashmere goat, and specialty fibers of alpaca, llama, vicuna, and guanaco. The undercoat of mammals other than the sheep, goat or camel families are referred to as fur.

Woolen

Describes yarn made using the woolen spinning system.

Woolen Spinning System

In this system, fiber is carded two or three times but not combed and goes directly from cards to the spinning process. Generally wool used for this system are shorter, have more crimp and better felting qualities. With this system it is possible to use wools of different types, lengths and character together in blends.

Worsted

A yarn that has been made using the worsted spinning system.

Worsted Spinning System

A system of yarn production designed for medium or longer wools, and other fibers. The suitable fiber lengths vary from 2.5 to 7 inches. The process includes, opening, blending, cleaning, carding, followed by combing, drawing and spinning. These yarns are compact, smooth and more even and stronger than similar yarns spun using the woolen system.

Yarn

A continuous strand of textile fibers that may be composed of endless filaments or shorter fibers twisted or otherwise held together. Yarns are utilized in making fabric.

Yield

The quantity of clean wool obtained from a specified amount of grease wool. The amount of usable fiber after the processes of washing, drying, and removing guard hairs.

Yolk

A colorless natural impurity consisting of grease and sweat.

Z-twist

See direction of twist