

THE HISTORY OF WOOL *Fact Sheet*



Like human civilization, the story of wool begins in Asia Minor during the Stone Age about 10,000 years ago. Primitive man living in the Mesopotamian Plain used sheep for three basic human needs: food, clothing and shelter.

Later on man learned to spin and weave. As primitive as they must have been, woolens became part of the riches of Babylon.

The warmth of wool clothing and the mobility of sheep allowed mankind to spread civilization far beyond the warm climate of Mesopotamia.

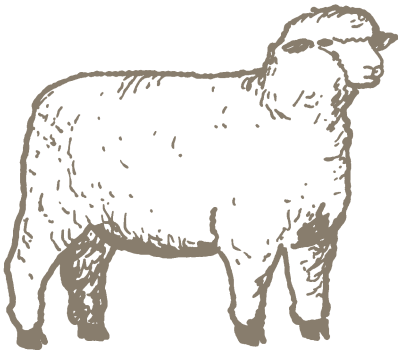
Between 3000 and 1000 BC the Persians, Greeks and Romans distributed sheep and wool throughout Europe as they continued to improve breeds. The Romans took sheep everywhere as they built their Empire in what is now Spain, North Africa, and on the British Isles. They established a wool plant in what is now Winchester, England as early as 50 AD.

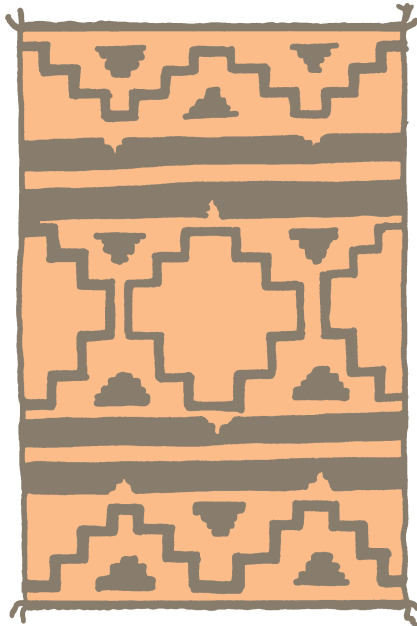
The Saracens, nomadic people of the Syrian-Arabian deserts, conquered Spain in the eighth century and established a widespread wool export trade with North Africa, Greece, Egypt and Constantinople.

During the twelfth century, weaving in Florence, Genoa and Venice was stimulated by the Norman conquest of Greece. The conquerors sent about a hundred Greek weavers to Palermo as slaves, and their extraordinary work was copied at once by Italian weavers.

Back in Spain a thriving wool trade helped finance the voyages of Columbus and the Conquistadores. Guarding its wealth closely, Spain levied the death penalty on anyone exporting sheep until 1786. That year King Louis XVI imported 386 Merino ewes to cross with sheep on his estate at Rambouillet in Northern France. The resulting Rambouillet breed is highly desirable today because of its fine and long-staple wool.

Just like Spain, England froze its borders to raw wool exports. In 1377 England's King Edward III, "the royal wool merchant," stopped woven-goods imports and the domestic weaving of foreign wools and invited Flemish weavers fleeing the Spanish invasion to settle in England where the industry thrived. By 1660 wool textile exports were two-thirds of England's foreign commerce.





Columbus brought sheep to Cuba and Santo Domingo on his second voyage in 1493, and Cortez took their descendants along when he explored what is now Mexico and the southwestern United States. Navajo and other Southwest Indian tribes are famous yet today for their magnificent woolen rugs and colorful wall hangings.

Although pelts may have been worn in Britain as early as the late Bronze Age (3000 BC) England's "empire of wool" peaked during the 1509-47 reign of King Henry VIII. He seized the flocks of the monasteries and redistributed them to court favorites. This caused unemployed shepherds to be sent to prison for non-payment of debts and was one of the unfair treatments which incited immigration to America.

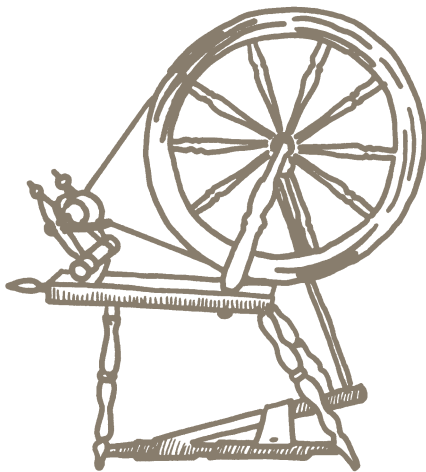
Despite the fact that England tried to discourage a wool industry in North America, a few smuggled sheep had multiplied to about 100,000 by 1665. Massachusetts even passed a law requiring young people to spin and weave. Traditions and folklore grew with the industry. Spinning duties fell to the eldest unmarried daughter in the family, hence the term "spinster." Spun yarn was wound on a reel (weasel) which made a popping sound when a given yardage was reached. Pop goes the weasel!

King George III of England made wool trading in the Colonies a punishable offense. Cutting off the offender's right hand was the chosen punishment. This policy, together with other oppressive actions including the Stamp Act of 1765, which required that revenue stamps be affixed to all printed matter and official documents in the Colonies, helped incite the Revolutionary War.

Despite the King's attempts to disrupt wool commerce, the wool industry flourished in America. Both Washington and Jefferson maintained flocks of sheep; both were inaugurated in woolen suits. New inventions like the spinning jenny, combing machines and water-powered looms, expanded the industry rapidly. Sheep moved West with civilization and beyond; at the turn of the 18th century small flocks in the hands of pioneers started the industry in Australia, New Zealand and South Africa.

Sheep are as versatile as the fiber they produce. All parts are used; they provide tender, delicious meat... and wool is a renewable resource. Sheep thrive in all 50 states and most nations of the world, often in rough, barren ranges, or high altitudes where other animals cannot survive because of lack of vegetation. Sheep can survive and flourish on weeds and vegetation other animals will not eat, therefore they convert to protein a group of natural resources which would otherwise be wasted.

Sheep fill our food and fiber needs today just as they have for centuries.



AMERICAN WOOL

Division American Sheep Industry Association, Inc.
6911 South Yosemite Street
Centennial, CO 80112-1414
(303) 771-3500 • Fax (303) 771-8200
www.sheepusa.org

CHARACTERISTICS OF WOOL *Fact Sheet*

Durability & resilience
Fiber absorbency
Felting
Dyeability

Resistance to flame
Chemical structure
Resistance to compression

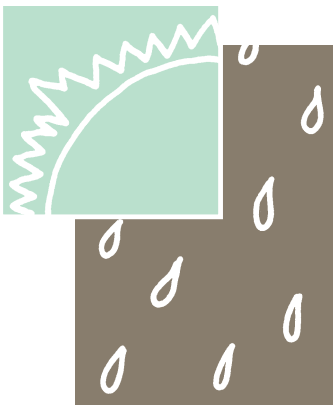
BENEFITS

- **Resists wrinkles**
wool springs back quickly
- **Resists soiling**
because the fiber is complex
- **Is durable**
multi-part fiber resists wear
- **Repels moisture**
fiber sheds water
- **Retains shape**
resilient fibers return to size
- **Resists flames**
fibers will not support combustion
- **Is comfortable in all seasons**
keeps layer of air next to skin



DURABILITY AND RESILIENCE Each wool fiber is a molecular coil-spring making the fiber remarkably elastic. Nature has folded the chemical polypeptide chains back upon themselves in such a way that they act like a coiled spring which elongates when it is extended and retracts when it is released. This molecular crimp, along with the 3-dimensional fiber, allows wool fibers to be stretched up to 50% when wet and 30% when dry, and still bounce back to their original shape when stress is released. But be careful: When wool is wet the fibers are weaker. Recovery from stress takes place faster when the fiber is in a humid environment; that's why steaming a wool garment will freshen the fabric and why a steam iron is recommended for pressing wool.

The flexibility of the wool fiber also makes it more durable. A wool fiber can be bent back on itself more than 20,000 times without breaking, compared to about 3,000 times for cotton and 2,000 times for silk. The natural elasticity of wool also makes woolen fabrics resistant to tearing. In addition, the outer skin of the wool fiber acts as a protective film, giving wool cloth improved resistance to abrasion.



FIBER ABSORBENCY Wool is a hygroscopic fiber; it takes up moisture in vapor form. Tiny pores in the epicuticle make the fiber semi-permeable, allowing vapor to pass through to the heart of the fiber. Wool can easily absorb up to 30% of its weight in moisture without feeling damp or clammy.

The capacity to absorb makes wool a "temperature regulator" because it can protect the body in both cold and warm conditions. Wool always absorbs moisture from the atmosphere of greater humidity and releases it to the drier environment as it creates a balance in moisture conditions. This characteristic makes wool a versatile all-season fabric.

Wool absorbs perspiration; thus it keeps a layer of dry air next to the skin which, in turn, helps to hold in body heat. As wool absorbs atmospheric moisture, the hydrogen bond of water is broken and chemically reacts with molecules of the wool to generate heat.

Wool garments are therefore regarded as good protection against hypothermia... a condition that occurs when sudden drastic lowering of body temperature causes the body to lose heat faster than it can be produced.

The same principle of moisture contact on the skin acts to protect against hot weather as well. The body cools itself naturally with the evaporation of perspiration. Wool expedites this process by absorbing perspiration and keeping the same dry air next to the skin. This is why wool clothing is worn throughout the desert regions of the world where it's hot during the day and cool at night.





FELTS NATURALLY The physical structure of the outer scaly layer of the wool fiber contributes to wool's unique property of felting. Under the mechanical action of agitation, friction and pressure in the presence of heat and moisture, the scales on the edges of the wool fibers interlock, preventing the fiber from returning to its original position. Felting shrinkage is irreversible.

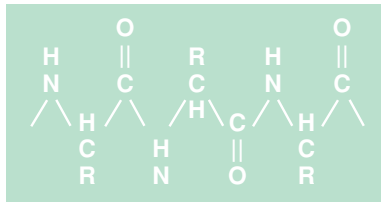
The felting property of wool is both an advantage and disadvantage. In a controlled situation the felting quality is called fulling or milling and creates a softer finish for woven wool fabric. Felting is also an advantage because it provides for a wide variety of non-woven felt fabrics for hats and for industrial uses. Felting is a disadvantage because it makes the washing of untreated wool fabrics difficult.

Treatments have been developed to prevent felting shrinkage, allowing wool garments to be machine-washed. The SUPERWASH® mark certifies that fabrics have been treated for machine-washability and dryability under strict standards set by The Wool Bureau, Inc. Technically, the process involves a mild chemical treatment applied to the fiber to form a microscopic film of resin that spreads evenly over the fiber surface. The film reduces friction and thus eliminates entanglement. The resin can't be washed or worn off; it is held in place permanently by chemical adhesive bonds.



TAKES DYE BEAUTIFULLY Wool absorbs many different dyes deeply, uniformly and directly without the use of combining chemicals. Wool is an amphoteric, which means it reacts with both acids and bases; thus it accepts both acid and basic dyestuffs. Dyes penetrate into the inner medulla core of the fiber where a chemical reaction occurs making the color change permanent except under extreme and prolonged fading conditions.

RESISTANCE TO FLAME Because wool contains moisture in each fiber, it resists flame without chemical treatment. Instead of burning freely when touched by flame, wool chars and stops burning when it is removed from the source of fire. Wool is self-extinguishing. It will not support combustion; this is why wool blankets are recommended for use in extinguishing small fires.



CHEMICAL STRUCTURE Wool is a natural protein fiber that grows from the follicles of the sheep's skin. It is like human hair in that it is composed of keratin-type protein. Chemically these proteins contain 5 elements: carbon, hydrogen, oxygen, nitrogen and sulfur. These 5 elements are combined into 19 amino acids linked together in ladder-like polypeptide chains.

RESISTANCE TO COMPRESSION Resistance-to-compression values are useful in assessing the suitability of wool for specific end uses. Resistance to compression (R to C) is the force per unit area required to compress a fixed mass of wool to a fixed volume. Resistance to compression is related to fiber diameter and the form and frequency of crimp.

For instance, low and medium R to C wools tend to be softer, more lustrous, more susceptible to felting, easier to process and produce strong fabrics. On the other hand, high R to C wools have a harsher handle, are resistant to felting and are bulkier.

Two resistance-to-compression studies conducted by Texas A&M University prove American wool is well-suited to produce the finest of fabrics as well as wool batting for the production of futons and other bedding materials. These studies confirmed that there is a good variety of wools available in the U.S. with low, medium and high resistance to compression. The majority of the wool finer than 28 micron in this test was analyzed as being in the middle resistance-to-compression range (53%). On the other hand, some 73 percent of the wool coarser than 28 micron was evaluated to be highly resistant to compression.



AMERICAN WOOL

Division American Sheep Industry Association, Inc.
6911 South Yosemite Street
Centennial, CO 80112-1414
(303) 771-3500 • Fax (303) 771-8200
www.sheepusa.org

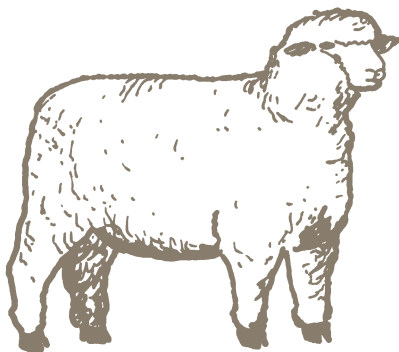
PROCESSING WOOL *Fact Sheet*

Shearing & grading
Washing & scouring
Blending & dyeing
Carding



PRODUCING WOOL For thousands of years sheep have been among the most efficient of all the domestic animals. Unlike cattle and swine, they thrive in the most extreme conditions of climate and habitat. Sheep graze easily on noxious weeds in the highest reaches of mountain vegetation where neither cattle nor elk nor deer choose to feed; thus they convert to protein for human use a whole variety of natural resources that would otherwise be wasted.

These conversions are, of course, wool—the perfect fiber for uncounted varieties of fabric, and lamb—the most tender and succulent of meats. Shear a sheep and spin its wool into yarn for a sweater or a skirt. Before you know it, the sheep has grown a new fleece and the cycle starts all over again. Wool is a renewable resource.



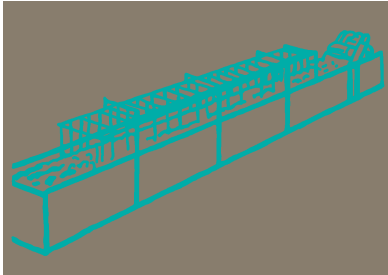
SHEARING AND GRADING The first step in processing wool takes place on the farm or ranch with shearing... usually in the springtime just before lambing. A skillful shearer, using fast electric hand clippers similar to enlarged barber's shears, can shear a sheep in about 5 minutes. He uses long, smooth strokes close to the skin in order to preserve the length of the fiber and hence the value of the fleece.

The shearer usually peels the fleece off in one piece. Then a worker rolls and ties it and stuffs it into a long bag with 19 or 39 other fleeces which together weigh from 200 to 400 pounds. He also marks the bag to identify its source (owner) before it goes to the warehouse.

Next come the buyers. They are the final judges of the value of the wool. Many times they take core samples of the bags of wool in order to measure fiber length, diameter, amounts of dirt, plastic, and vegetable matter. These factors can also be determined by experienced graders who make their judgments by visual inspection. The buyers bid on "the lot" based on the grade and/or the core samples of the wool.

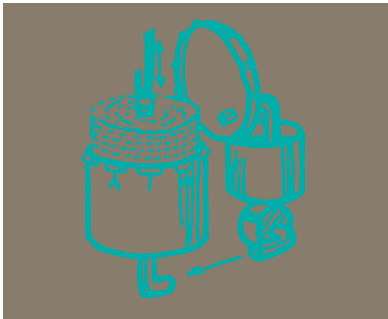
Fine and medium-fine wools of longer staple lengths (more than three inches) usually go to make light-weight worsted suit and dress fabrics. Coarser and shorter fibers, under three inches long, usually go into bulky sweater and carpet yarns.





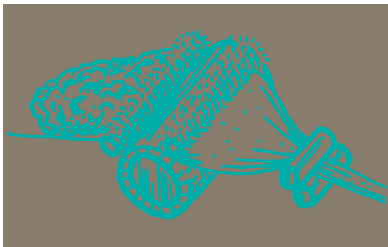
WASHING AND SCOURING The next step in the process is washing (scouring) the wool to remove grease (unrefined lanolin), vegetable matter and other impurities which gather in the wool from the range, feedlot, or shearing floor. A set of rakes moves the fleeces through a series of scouring tubs of soap and water. Impurities can weigh from 30 to 70 percent of a raw (unscoured) fleece. The first wash waters are warm—up to 140 degrees F—and the rinses are cold. Then squeeze rollers and a hot-air drying chamber bring the moisture content to the right level for the next step in processing.

The grease in wool is a wonder of its own... lanolin. It is separated from the wash water (oil and water don't mix), purified, and used in creams, soaps, cosmetics, and other products.



BLENDING AND DYEING Clean wools from several different batches or lots are often blended—mixed mechanically—at this stage. Blending unifies the slightly-different basic colors of raw wool, and also helps to standardize staple length and diameter for uniform quality.

Each wool fiber absorbs dyes so deeply that dyeing at any processing stage is equally effective and durable. Wool dyed immediately after it is scoured (washed) and blended is *stock-dyed*. Spin it into yarn first and then it's *yarn-dyed*. Weave it into a piece of fabric and then it is *piece-dyed*. To weave a patterned fabric, use either stock-dyed or yarn-dyed threads. Plain-colored fabrics are usually piece-dyed. And woolen fabrics can, of course, also be screen or roller printed in myriad colors and patterns.



CARDING The carding process passes the clean and dry wool through a system of wire rollers to straighten the fibers and remove any remaining vegetable matter. The rollers vary in diameter and turn at different speeds in order to form a thin web of aligned fibers. Smooth steel fingers then divide the web and roll the strands over onto one another to create narrow continuous ropes of fibers called "slivers."

If the batch of wool is of coarser fiber and shorter staple length (three inches or less), the machinery gently twists the slivers into ropelike strands called "roving," and winds the roving into balls ready for spinning into woolen yarns.

If the batch is of finer fiber and longer staple length (longer than three inches), the slivers usually go to the combing and drawing steps which prepare them for spinning into worsted yarn.



AMERICAN WOOL

Division American Sheep Industry Association, Inc.
6911 South Yosemite Street
Centennial, CO 80112-1414
(303) 771-3500 • Fax (303) 771-8200
www.sheepusa.org

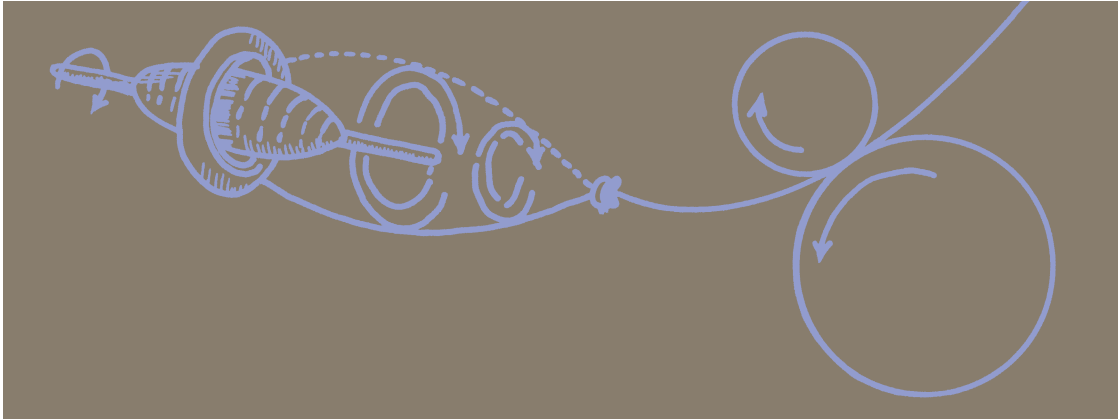
PROCESSING WOOL *Fact Sheet*

Spinning

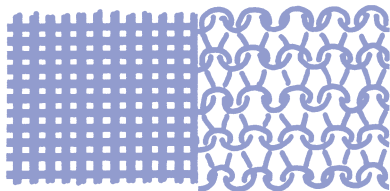
Weaving or knitting

Fulling & finishing

Chemical finishes

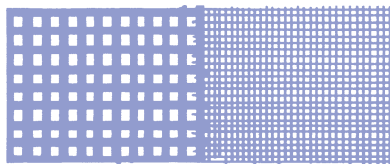


SPINNING Roving for both woolen and worsted yarns goes through the spinning process for yarn formation, making it suitable for weaving or knitting. After spools of roving are in place on the spinning frame, the ends of the roving are drawn through small rollers to extend the wool fibers still further. Then the spinning machines twist and retwist the roving into yarns of a wide variety of qualities including strength, firmness, size and ply.



WEAVING OR KNITTING Weaving produces cloth by interlacing two sets of yarn at right angles. Yarns running lengthwise in the loom are the “warp,” while yarns running crosswise form the filling or “weft.” As each warp yarn passes through the loom, it is raised and lowered by a wire eyelet through which it is threaded. As yarns are raised and lowered by cycles of the loom, a weft yarn is carried by a shuttle, (rapier or air jet) through the opening created by the warp yarns. This sequence, repeated endlessly, forms woven fabrics of almost infinite variety.

Knitting machines are just as versatile. Their mechanical needles are just as accurate and many times faster than hand knitting. Knitted fabrics are produced by interlocking rows of yarn and loops. As new loops are formed, they are drawn through those previously shaped. This inter-looping and the continued formation of new loops produces knit fabric. A circular knitting machine produces mainly jersey and a variety of double knits. Flat knitting machines produce yard goods such as tricot and raschel knits.



QUALITY CONTROL, FULLING AND FINISHING Quality control inspection is a part of the final step in fabric manufacturing. A thorough examination of the cloth identifies imperfections such as broken threads, variations in color and other undesired effects. These are removed and the area is rewoven by hand if necessary.

Fulling Once the fabric passes inspection it undergoes a controlled shrinkage process called *fulling* or *milling*. Moisture, heat and friction are applied causing the fabric to shrink a controlled amount in both length and width. This tightens the weave and improves the hand (texture) of the fabric.



Finishing Woolens are often brushed to raise the ends of the wool fibers above the surface of the cloth in a soft, fluffy nap. Naps range from the lightly brushed surfaces of a flannel to the deep-pile effect of fleecy coatings. Deep naps are produced by passing the fabric over cylinders covered with fine metal wires and small hooks. These hooks pull fiber ends to the surface and create the nap.

Worsted go through less radical changes in finishing, although the characteristic crisp, firm appearance of worsted fabric is sometimes enhanced by special treatments. *Clear finishing* is a shearing or singeing process which gives the fabric a smooth surface and a crisp feel. *Unfinished* worsteds are lightly napped to give them a woolen-like surface producing a fabric with the softness of a woolen and the firmness of a worsted.

The *decating* finishing process is another shrinking process which gives the fabric stability. It is done by winding the fabric under tension on a perforated cylinder through which steam is passed.

Crabbing sets the cloth and yarn twist by rotating the fabric over cylinders through hot, then cold water baths. The cloth is held firmly and tightly to prevent wrinkling.

Sponging is a preshrinking process achieved by dampening the fabric with a sponge, then rolling it in moist muslin. It is applied to wool fabric before cutting to prevent possible contractions of the fabric in the finished garment caused by stresses created in manufacturing. "London Shrinking" is a popular sponging treatment which prevents shrinkage during manufacturing.



CHEMICAL FINISHES Several chemical finishes may be applied to wool, depending on their end use. Products labeled SUPERWASH®, a trademark owned by The Wool Bureau, Inc. are 100% wool that can be machine-washed (using ordinary laundry detergent) and machine-dried. The process that qualifies SUPERWASH® certification is a mild chemical treatment applied to the fiber to form a permanent microscopic film of resin which spreads evenly over the fiber surface, coating the scales of the wool fiber. The finish reduces friction and fiber entanglement and eliminates felting shrinkage that usually occurs if wool garments are machine-washed and dried. Wool can also be treated chemically to make it highly resistant to moths, stains, moisture and fire.

The finishing process is the final step in wool processing which takes the wool from the sheep's back to woven or knitted fabric.



AMERICAN WOOL

Division American Sheep Industry Association, Inc.
6911 South Yosemite Street
Centennial, CO 80112-1414
(303) 771-3500 • Fax (303) 771-8200
www.sheepusa.org

WOOL FABRICS *Fact Sheet*

Woolen or worsted— the difference

The woolen system

The worsted system— combing and drawing

Wool in your wardrobe

Consumer attitudes on wool

Blends

WOOLEN OR WORSTED—THE DIFFERENCE Woolen and Worsted are two major classifications for wool yarns and fabrics. Here are the differences:

Woolens

Processing

spun from *shorter* wool fibers— one to three inches in length
spun from fibers of a *medium* or *coarse* diameter
fibers are washed, scoured and carded

Yarn

bulky, uneven
low to medium slack twist
tensile strength lower than worsted

Fabric Appearance

soft
fuzzy
thick, heavier weight

Characteristics

more insulatory due to trapped air
not as durable as worsteds
nap reduces shine

does not hold a crease well

Uses

sweaters, carpets
tweeds

Worsteds

spun from *longer* wool fibers— longer than three inches in length
spun from fibers of *fine* diameter
fibers are washed, scoured, carded, **combed** and **drawn**

fine, smooth, even
tighter twist
higher tensile strength

crisp
smooth, clear-faced
lighter weight

less insulatory
more durable than woolens
may become shiny with use where abraded during wear
holds creases and shape

suits, dresses
gabardines, crepes



Woolen Yarn



Worsted Yarn

THE WOOLEN SYSTEM Woolen fabrics are characterized as being fuzzy, thick and bulky. They are made from fibers that are one to three inches in length that have been carded only (worsted yarns are carded and combed). After the carding process the woolen “sliver” is twisted by machine into rope-like strands called “roving” and wound onto reels for spinning. Woolen yarns are fluffy, relatively loosely twisted, and are used in weaving fabrics such as tweeds, blanket cloth and meltons. Woolen fabrics and yarns are traditionally made into bulky garments such as coats, heavy jackets and sweaters.

THE WORSTED SYSTEM—COMBING AND DRAWING

Worsted yarns are spun from longer (three inches and longer) fibers that have been carded, *combed* and *drawn*. Combing machines further straighten the wool sliver making the individual fibers lie parallel. The combing process also eliminates “noils” or shorter fibers which grow mostly on the belly of the sheep. (Noils are used in the production of less expensive woolen fabrics and for the manufacturing of felt, a non-woven wool fabric).

The drawing process takes the worsted sliver, doubles it over onto itself and draws it out again to a thinner, more uniform diameter to insure that all wool fibers are parallel. Worsted yarns are twisted tighter and thinner in the spinning process and are manufactured into lightweight fabrics such as gabardine and crepe.





ALAMERA™
AMERICAN WOOL AND COTTON



WOOL IN YOUR WARDROBE When planning a professional business wardrobe, wool is preferred. Chosen for its comfort, appearance and longevity, wool garments are suitable for many situations and individual styles. Because wool has this versatility, it is both prestigious and practical for a wardrobe.

When concerned with the price-value relationship of clothing, look closely at clothing durability and appearance over time. Authorities (consultants) on clothing selection and image consistently recommend selecting fewer, but higher quality clothes. By selecting garments qualitatively, rather than quantitatively, money is saved in the long run and a better investment has been made. The right business, professional or social image is important. It can add to your confidence and credibility.

A wardrobe that contains wool is attractive, resists wrinkling, tailors beautifully, retains its shape, wears well, travels well and projects an effective professional image. A wool garment will give the appearance needed to get through a long, busy day.

Today's lifestyles demand getting the best value for your time and money. Make wool a financial investment, and watch it pay off.

CONSUMER ATTITUDES TOWARD WOOL WARM, SOFT, COMFORTABLE, NATURAL, PURE: The words used by consumers to describe wool in a research study conducted by Bruskin Goldring Associates. The study entitled, "Consumer Attitudes Towards Wool & Wool Products," asked consumers what they look for in wool garments. The top four answers were comfort, fit, durability and ease of care. This research bears out the growing trend to comfort-driven and quality clothing. After years of living in T-shirts and sweats, the American consumer has become accustomed to clothing that is easy on the body. When Americans dress up, they are still likely to be slightly dressed-down.

The boom in knitted apparel is just one indication of the strength of this trend. Layered-knit dressing, comfort-stretch wovens, and the return to sweaters all point to the importance of the simple but chic style that wool fits so well.

The American wool industry is responding to these demands with innovative blends and finishes. Fabric weights are generally lighter than they were even a few years ago. Feather-weight worsteds and twelve-ounce coatings are just two of the wool fabrics that have inspired designers to create easy-to-wear yet elegant garments.

BLENDS Yarns and fabrics made with blends of American wool and other fibers, either natural or synthetic, have long been the choice of knowledgeable designers. Blending two great natural fibers like wool and cotton produces fabrics which benefit from the inherent qualities of each fiber. The end result is better comfort, better aesthetics and better performance.

The American Wool Council has been involved in the development and promotion of wool/cotton blended yarns and fabrics for several years. ALAMERA™ is a registered trademark of the American Wool Council denoting blends of American wool and cotton. ALAMERA blends are distinguished by a soft hand and good loft. The fabrics are season-spanners which can be worn nine to twelve months out of the year, depending on the climate. Other current popular blends are wool/polyester, wool/rayon, wool/nylon and wool/silk.



AMERICAN WOOL

Division American Sheep Industry Association, Inc.
6911 South Yosemite Street
Centennial, CO 80112-1414
(303) 771-3500 • Fax (303) 771-8200
www.sheepusa.org

CARE OF WOOL *Fact Sheet*

General care

Pressing wool

Care in storage

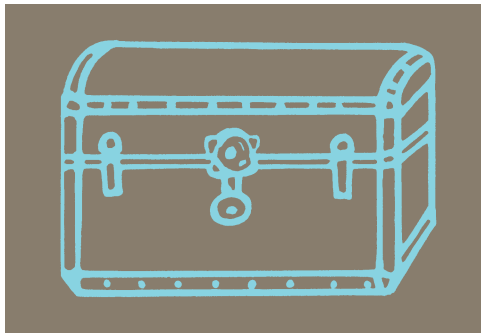
Cleaning wool

Machine-washing

Hand-washing

Dry cleaning

Stain removal



GENERAL CARE With proper care the natural qualities of wool can be maintained for years. Follow these simple tips to insure the lasting beauty of your wool garments.

- Give wool clothing a 24-hour rest between wearings. Wool fibers will shed wrinkles and return to their original shape.
- Hang woven wool garments on shaped or padded hangers. Store knits gently folded in drawers.
- Empty pockets and remove belts from garments and hang with closures zipped or buttoned.
- Brush wool clothing to remove surface soil. Use a damp sponge for knits and finer fabrics.
- Refresh wool garments quickly after wearing or unpacking by hanging them in a steamy bathroom. Moisture from the steam will remove wrinkles.
- If wool gets wet, dry the garment at room temperature away from heat. If there's a nap, brush with the nap.
- Remove spots and stains promptly.

PRESSING WOOL Always use steam when pressing wool. Set the iron on the wool setting. Avoid pressing wool totally dry. When possible, press on the reverse side of the fabric. When it is necessary to press on the right side of the fashion fabric, use a press cloth to avoid a shine. Extra scraps of wool fabric make excellent press cloths; they help to preserve the resilient texture of woolsens. Lower and lift the iron; don't slide it back and forth. Prevent imprinting inside detail by placing a piece of brown wrapping paper or tissue paper under folds, seams or darts.

CARE IN STORAGE The same chemistry that makes wool fiber resilient and durable and lets it breathe and shed wrinkles also makes wool susceptible to moths and carpet beetles. These insects, if allowed to infest wool, feed in the larva stage on the keratin protein present only in animal fibers.

Since the insect larvae are attracted to areas of the cloth that are soiled with food stains and body oil, clothing kept clean in storage is the most effective protection. Additional prevention can be achieved by taking the following precautions:

- Have your woolsens cleaned before packing them away. Cleaning will also kill larvae.
- Brush clothing after each wearing. This not only will revive the nap but will help rid clothing of insect infestation.
- Keep closets, dresser drawers and trunks clean.
- Pack clothes in airtight containers—well-sealed garment bags or boxes and trunks with secure lids. Cold storage in temperatures of 40 degrees (4°C) or lower further discourages infestation.

CLEANING WOOL Before deciding on a cleaning method for wool clothing, look for the care instruction label. Required by law, these labels are sewn into garments and should not be removed. Most clothing manufacturers recommend dry cleaning although some garments can be hand-washed and some even laundered by machine.

MACHINE-WASHING Garments labeled SUPERWASH® can go right from the washing machine to the dryer without the worry of felting shrinkage. The SUPERWASH® label, is a certification mark of The Wool Bureau, Inc. It indicates a certain standard of machine-washability performance. For the best results for woven washable woolsens:

- Set the machine for gentle action at a short cycle.
- Set the water temperature at cool or lukewarm.
- Use a mild soap or detergent which contains no bleach. If it's the powdered variety, make sure it is completely dissolved.





- Wash each garment separately.
- Garments identified with the SUPERWASH® label can be dried by machine or hung carefully on a padded hanger.

Shearling bedpads may also carry the SUPERWASH® certification allowing them to be washed and dried by machine. Once clean, they should be lightly brushed to restore their original appearance.

HAND-WASHING Follow these suggestions when laundering woolen garments labeled *hand-washable*.

- Make a paper pattern of knits by tracing the outline of the garment.
- Wash in lukewarm or cold water using a mild soap or liquid detergent (which contains no bleach) according to directions.
- Soak for 3-5 minutes, gently squeezing suds through without twisting or wringing the garment.
- Rinse twice in clean water that is the same temperature as the wash water.
- Gently squeeze out excess water and roll the garment in a towel to absorb excess water.
- For knits, lay the pattern on a dry towel and pin the garment to the pattern, smoothing to its original shape.
- Dry away from sunlight and direct heat.

DRY CLEANING If the label indicates the garment should be dry-cleaned only, take it to a reliable dry cleaner. Identify any spots or stains for special treatment.

STAIN REMOVAL Wool is naturally soil-resistant for two seemingly diverse reasons: its ability to repel and absorb moisture. The outer layer of the wool fiber has an epicuticle, or thin protective wax-like film, which acts as a raincoat... enabling wool to shed droplets of liquids without wetting the fabric, much like birds' feathers.

Spill a liquid on a horizontal wool surface and you have time to mop it up before it stains the fabric.

Although wool does not absorb liquids directly, it readily absorbs moisture in vapor form. In fact wool will absorb up to 30% of its weight in moisture. Because of this ability to absorb moisture, wool does not build up static electricity which attracts lint and dirt from the air.

When wool is soiled, it is important to remove stains promptly.

A GUIDE FOR REMOVING COMMON STAINS

Alcohol or Food Place towel under area. Gently rub carbonated water toward center of the spot over the stain.

Blood Blot with common starch paste and rinse from back with soapy water.

Burning Cigarette Brush off ash.

Butter and Grease Sponge with dry cleaning solvent.

Chewing Gum Scrape and sponge with dry cleaning solvent.

Chocolate Sponge with soapy cold water.

Coffee or Tea Sponge with glycerine. If none available, use warm water.

Egg Scrape and sponge with soapy cold water.

Glue Sponge with alcohol.

Ink Immerse in cold water.

Iodine Treat with cool water followed by alcohol.

Iron Rust Sponge with weak solution of oxalic acid until stain disappears. Then sponge carefully with household ammonia and rinse with cold water.

Lipstick May often be erased by rubbing white bread over area with a firm gentle motion.

Mud Once dry, brush and sponge from back with soapy cold water.

Tar, Road Oil Sponge with dry cleaning solvent or degreaser.

Wine, red Immerse in cold water.



AMERICAN WOOL

Division American Sheep Industry Association, Inc.
6911 South Yosemite Street
Centennial, CO 80112-1414
(303) 771-3500 • Fax (303) 771-8200
www.sheepusa.org