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EC 58-413

FABRICS

*Buying
Sewing
Laundering*

Extension Service—University of Nebraska
College of Agriculture and U.S. Department
of Agriculture Cooperating, W. V. Lambert, Director



FABRICS *Buying, Sewing, Laundering.*

WITH A widening world of new fibers, fabrics and finishes, we need facts to help us buy, use, sew and care for family clothing. It is difficult and confusing to tell by look or feel just what fibers are in today's fabrics. We may know certain tests, but our best guide is reliable label information to tell us how to use and care for a garment. We learn special qualities about fibers, but when they are made into fabric, then dyed, finished, or made into garments, their behavior may be very different.

Through the ages, natural fibers have had certain shortcomings. Their quantity and quality could be affected by drought or floods, or by diseases in flocks of sheep, in silkworm cultivations, and in fields of cotton or flax. Although quality of fibers depends on length and fineness,

little could be done about their natural size, strength and weight. Now, man-made fibers can be controlled with scientific precision, but they, too, have limitations. None are perfect or "miracles." It is necessary to test each fabric construction to find if it is suited for a specific end-use.

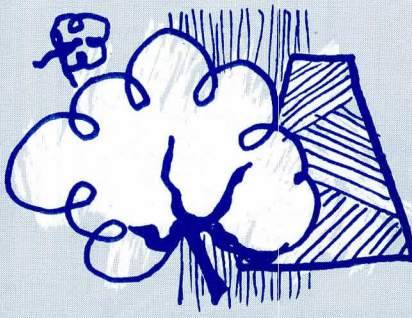
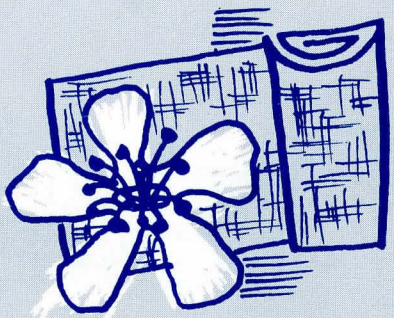

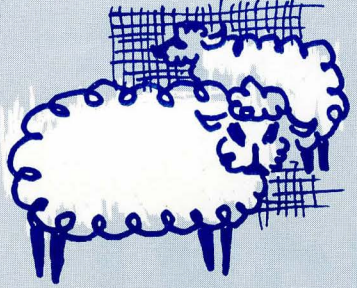
Man-made fibers may be regenerated from a cellulose (vegetable) base such as cotton linters or wood pulp to make a fiber like Rayon or from a protein base such as corn to make a fiber like Vicara. Or they may be made from a combination of chemicals such as coal, air and water to make a fiber like Nylon. Many of the 20 or more man-made fibers today have a proved value, others are still experimental. Several have qualities in common.

Blends in a fabric are a mixture of two or more fibers, either natural or man-made. Well over a million blends are possible. For a special use they need to combine desirable fiber qualities or eliminate the undesirable. In a *true* blend, fibers are mixed and spun into single yarns. In a *combination* blend, yarns of different fibers are woven into a single piece of fabric. Lengthwise yarns may be one fiber, crosswise yarns another.

Caring for garments is lighter work than in grandmother's day, but we have to know more about the varied fabrics, laundry supplies and equipment available.

When you fold back this flap you will find a reference chart giving you a few pointers about fibers, fabric finishes, uses, sewing tips, and care of today's clothing fabrics.

FABRIC R

Natural Fibers			
			
COTTON	LINEN	SILK	WOOL
Characteristics Inexpensive vegetable fiber. Absorbent, soft, smooth, durable, light weight, strong (especially when wet). Mildews. Retains whiteness. Good scorch resistance. Stands high washing and ironing temperatures. Blends with all fibers—contributes comfort, washability, absorbency, smoothness.	Characteristics High-priced vegetable fiber. Mostly imported. Durable, absorbent, lustrous, crisp, very strong. Mildews. Pliable, drapes well. Does not soil readily, creases unless finished, relatively inelastic. Stands high washing and ironing temperatures. Blends with cotton, silk, rayon, wool, some man-mades—contributes absorbency, texture, strength.	Characteristics Luxury animal fiber. Long, fine, lustrous, durable, strong, springy. Drapes softly. Resists wrinkles. Good absorption, elasticity. Dyes well. Easily heat damaged. Blends with wool, cotton, most man-mades—contributes luster, strength and "hand." Includes cultivated, wild, Douppioni (double cocoons), waste (damaged cocoons).	Characteristics Costly, animal fiber (sheep, goat, camel, cashmere, etc.). Soft, warm, resilient. Sheds wrinkles. Medium strength but durable. Good insulation, absorption. Flame resistant. Holds odors. Shrinks. Soft fabrics "pill." Blends with cotton, silk, linen, most man-mades—contributes warmth, resilience, comfort.
Fabric Finishes Possible Mercerizing adds luster, strength, absorbency, ease of dyeing. Can be bleached, glazed, embossed, napped, shrinkage controlled. Resin finishes add permanent crispness and resistance to creases, mildew, flame, stains and water.	Fabric Finishes Possible Can be bleached, beetled (pounded to give leathery, flat surface for table damask), and dyed color-fast. Wide variety fabric weights and textures. Resin finishes add permanent crispness and resistance to stains, water, creases and mildew.	Fabric Finishes Possible Gum sizing used for stiffness for sheers (replace when dry-cleaned). Avoid metallic-weighted fabrics. Ask for "pure" silks. Finishes add durability and resistance to stains, spots, perspiration, creases and yellowing.	Fabric Finishes Possible Worsted: smooth, distinct weave. Woolens: soft, indistinct weave. Can be fulled (makes fabric compact), felted, napped or sheared. Dyes fast colors. Finish can give water, mildew and moth resistance, washability and shrinkage control.
Uses For sewing thread. All types of fabric—sturdy, heavy-duty for work clothes; firm and medium-weight for work and play; delicate for sheerest use. "Winter" cottons resemble wools without their warmth.	Uses For sewing thread. Fabrics for outer garments from sheerest to very coarse. Handkerchief linen for sheer blouses and lingerie. Heavier fabrics for men's suits and women's coats. Novelty fabrics—tweeds, and for shoes, hats and handbags.	Uses For sewing thread. Fabrics for all types clothing. Cultivated for fine lingerie and dresses; Wild for heavier, linen types; Douppioni for nubby Shantung; Waste for crashes, rough textures. Also fabrics for shoes, ribbons, trimmings and umbrellas.	Uses Fabric for all types of clothing from delicate, sheerest wools to thick, heavy, fleeced winter coatings. Especially important for baby clothes, knitted and swim wear. Felt and velour important for house shoes, hats and purses.
Sewing Tips Shrink fabric if not treated. Use 6-ply or mercerized thread, washable interfacing and colorfast trim. Avoid fabrics printed or pressed off grain. Straighten before cutting. Select right size needle and thread for fabric weight.	Sewing Tips Shrink fabric if not treated. Pull thread to straighten cut ends because strength of linen makes it difficult to tear. Use mercerized thread. Select right size needle and thread for fabric weight. Fabric often ravels, so finish seams adequately.	Sewing Tips Cut with sharp shears. Use sharp, fine needles and pins. Place pins in seam allowance to avoid pin holes. Use silk or mercerized thread. Loosen machine tensions for some weaves. Sew over tissue paper for sheer or slick fabrics.	Sewing Tips Shrink wools and blends unless labeled pre-shrunk. Consider "London Shrunk" method. Stitch with mercerized, silk or heavy-duty thread according to fabric. Easy to shape with steam and pressing. Avoid scorching. For jersey, use fine needle, short stitch, and Dacron or silk thread for stitching.
Care Untreated Cottons: Machine-washable in hot water and all-purpose detergent or soap if fast color. Very hot for soiled whites, 140°-160°, colors, 130°-140°. Rinse in soft water. Can be dryer dried. "Hand wash" delicate garments. Dampen well, iron with hot iron. May be bleached. Resin-finished: Wash at moderate temperature in mild detergent or soap. If bleaching, use only perborate type, except if labeled "May Be Bleached."	Care Machine or hand wash according to fabric strength and construction. Use hot water, all-purpose detergent or soap for whites. Dry partially or completely. Dampen well. Iron with hot iron on wrong side for dull finish. Untreated fabric can be bleached and starched. Use only perborate bleaches on resin-finished linen unless labeled "May Be Bleached." Dampen and press with hot iron for between-washings care.	Care Protect from perspiration. Dry-clean unless labeled washable. Lingerie is always hand washable. "Hand wash" in warm water and mild soap or detergent, squeeze suds through fabric, don't rub. Do not bleach. Roll in towel. Hang till damp-dry. Fold to distribute moisture while double parts are wet. Press on wrong side with moderate heat.	Care Dry clean unless labeled washable. Air and brush often. Protect from perspiration, moths, heat. "Hand wash" knits in warm water and mild soap or detergent. Gently squeeze, do not wring or rub. Absorb moisture in towel. Lay flat to finish drying. Launder "washable wools" in washer with warm water, mild suds, little agitation. May soak, then spin. Dry with minimum agitation. Steam press on wrong side or with cloth on right side.

REFERENCE CHART

Man-Made Fibers



These modern fibers are called man-made because the material from which they are produced is made into a solution or melted, then forced through spinnerets into the air, or into a hardening bath, to form the fiber. The spinneret resembles a small shower nozzle with holes that vary in size, but frequently are so fine that they cannot be seen with the naked eye. The long hair-like fibers are called filaments. A number of filaments may be twisted together to form long, smooth yarns, called "multifilament," or cut into "staple" or short lengths and made into thicker or softer spun yarns that resemble cotton, linen or wool in appearance. Fibers may be straight, crimped, bright, dull or solution-dyed.



RAYON, NYLON, ORLON, DACRON, ACRILAN, VEREL, ACETATE, DYNEL, VICARA, FORTISAN, DARLAN, ARNEL, CRESLAN, ETC.

Characteristics

No one fiber or fabric has everything. Most fabrics of man-made fibers have these qualities in common—Sturdy, resist wear. "Hand" or drape. Resist insects, chemicals and mildew. Absorb little moisture. Dry quickly. Retain size and shape. Resist non-oily stains. Easy care. Light weight. Resist wrinkling. Can heat-set pleats. Non-allergic. Difficult to dye. Easily heat damaged. Tend to "pill" (surface balls caused by friction). Accumulate static electricity unless blended or treated.

They also have differences and special traits. Fibers which absorb moisture readily (Vicara, Fortisan—a super-strong rayon, and Viscose rayon) make fabrics comfortable to wear, easy to dye, but absorb water-soluble stains. Fibers which absorb very little moisture (Dacron, Dynel, Verel, Orlon, Creslan, Acrilan, Nylon, Darlan, Arnel and Acetate in this order) dry rapidly, resist water-soluble stains, but attract lint and oily soil, accumulate static electricity,

and require little or no ironing. Wet Dacron garments may feel cold because a "wicking" action pulls moisture through the fabric. Oil-soluble stains may be persistent.

Fibers which make thick, bulky fabrics without weight, make warm winter clothing. These are Orlon, Acrilan, Creslan, Darlan, Verel and Dynel. Fibers most easily damaged by heat are, in decreasing order, Dynel, Acetate, Orlon, Acrilan, Nylon, Dacron and Arnel. And when finish and fabric texture contribute to wrinkle recovery, Dacron is best, followed by Orlon, Acrilan, Dynel, Acetate and Arnel. Fortisan is poor in wrinkle recovery so present use is limited for clothing. Color pigment added to fiber solutions avoids fabric dyeing.

Nylon and Fortisan are the strongest fibers. Dacron is strong, but most Rayons, Acetate and Vicara lose considerable strength when wet and need special care in handling. Orlon is most resistant to sunlight damage followed by Dacron, Dynel, Rayon, Acetate and Nylon.

Fabric Finishes Possible

Both yarns and fabrics may have special treatments. A slubbed Rayon yarn imitates an uneven silk yarn. A bulked yarn of man-made fibers develops a high volume which resembles wool and remains stable in wear. An Acrilan yarn can blend shrinking and non-shrinking fibers that produce a puckered fabric. Stretch yarns develop elastic qualities with permanent crimping, twisting, and heat-setting. Metallic yarns are made by laminating one layer of metal foil between two layers of plastic film or by metalizing, as in electroplating. Mylar film is the strongest and resists wear and the heat of laundering.

A metallic-coated finish such as Milium gives additional warmth to lining fabrics.

Many finishes may be applied to man-made fabrics for service and appearance—crease-resistance, shape-retention, crimping, water-repellency, spot, stain and mildew resistance, flame retardance, shrinkage control and resistance to pilling and static electricity. They may be heat-treated for special effects such as moire, embossed and pleated.

Dacron and Orlon yarns can be "fulled" in wool blends to make a compact fabric.

Wash-and-wear fabrics have a finish applied to cotton or rayon fabrics, or they are made from man-made fibers (Nylon, Dacron, Orlon or Acrilan) with inherent "no iron" qualities.

Uses

Man-made fibers, depending on their qualities, are used for almost all woven and knitted clothing, from the sheerest of fabrics to fur-like coatings. This includes foundations, sewing thread and supplies, uniforms, ribbons, lace and umbrellas. Man-made fabrics can be made to look like cotton and linen fabrics, silk twill, satin, taffeta, crepe, chiffon and velvet. They can be made to resemble cashmere, other woolen fabrics, "Straw" hats (Dynel), fleeces and fur. Stiffened nylon sheers, net and marquisette, are used for evening wear and petticoats.

Of the man-made fibers, only Dacron and Nylon are used for sewing thread.

When man-made fibers are used in blends with the natural fibers, their uses are without limit. Vinyl and other plastic films come in various thicknesses or gauges. They can be perforated for comfort, embossed, printed and colored. When supported with a laminated fabric back, they are used for jackets, leggings, upholstery and luggage. Unsupported, they are used for aprons, baby bibs and pants, rainwear, boots, garment covers and other ways.

Sewing Tips

Sewing man-made fabrics is the same as sewing natural fabrics—with few variations. Pre-shrink fabric. Use well-sharpened shears, and cut smoothly without chopping. Pins and needles, for both machine and hand sewing, should be fine and have sharp, smooth points. These fibers are tough and may dull needles.

Use clay chalk for pattern markings since wax may leave an oily mark, difficult to remove. Use thread and sewing supplies with qualities similar to the fabric. Cut, rather than break thread to avoid "pulled" seams.

Test stitching on double thickness of fabric. Machine tension for Dacron and mercerized threads are similar. For Nylon thread, you may need to loosen both tensions.

Adjust pressure to suit fabric and weight, and stitch length to fit fabric texture and weight. Run machine slowly and evenly. Hold fabric firmly without pushing or pulling. Fasten stitches at each end of seam with lock or back stitch. Stitch sheers on tissue paper to avoid puckering.

Most fabrics ravel, so cut seams wider and use a suitable seam finish. Pinking is usually not enough. Be sure seam is right before pressing. Needle holes or creases may not press out. You may have difficulty shrinking out the ease of set-in sleeves, so choose another style of sleeve.

For stitching plastic film, use Scotch tape, paper clips or weights instead of pins. Stitch with a fine needle, long stitch, light tension, and mercerized thread.

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Care

Dry clean or wash often to prevent oily soil or perspiration from penetrating the fiber and becoming difficult to remove. Whites especially need to be cleaned of surface attracted soil or color to retain their whiteness.

Launder blended fabrics as if made of fiber needing greatest care. (Example: Treat Orlon and wool as if it were all wool because wool is more delicate.)

Generally machine or "hand washable," according to fabric construction or special finishes. Separate white garments from colored. Wash sturdy whites in warm water, all-purpose or mild detergent or soap or according to instructions if they have wrinkle resistant finishes. Gentle washing done more often keeps finish beautiful longer.

Avoid using chlorine bleaches on Rayon and resin-treated fabrics—except on the recent improved resin finishes, labeled, "May Be Bleached."

Some man-made fibers and finishes are softened by heat of washing, rinsing and drying. (See characteristics.) Spinning and wringing while in a softened condition will leave set

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wrinkles and creases. Cold water washing with special detergent may aid in reducing wrinkles and in retaining fabric finishes for a longer time, but removing soil may be a problem. Even if warm water is used for better washability—cool rinses, slow spins, and careful handling in dryer will help prevent wrinkling.

If ironing is necessary for "Wash and Wear" garments use low setting or touch-up with steam iron.

Acetate is especially sensitive to heat. Iron at low setting while garment is still quite damp. Need not iron completely dry.

For Dynel, most sensitive to heat, use press cloth and cool, dry iron—no steam or brushing.

Napped and knit fabrics may need no pressing; Use a light steam press for dress up knits.

To reduce accumulated static or clinging effect, avoid over-drying or friction. May use occasional application of anti-static fabric softener in final rinse water.

Labels Help You

We are all consumers. Haphazard buying wastes hard-earned money, but wise buying gives us more for our dollars. If wise, we know our family clothing needs, how much money we have to spend, the price of each item, and its quality compared to another.

Most clothing items have a brand or trade name which is a standard, but not a guarantee of quality. A brand name makes it convenient to find the same item again. Informative labels describe the quality of a fabric, garment or both. A guaranteed washable fabric, for example, may be made into a garment with an unwashable trim.

We judge a label's helpfulness if it—

- Defines fiber content and fabric finish.
- Describes qualities in order of importance.
- Gives information on use and care.
- Describes hidden values and qualities.
- Is stated in terms we can understand.
- Gives direct, honest and complete facts.
- Has name and address of manufacturer.
- Is in a form we can save for future use.

If we want good labels on the clothing we buy, we should buy from the stores selling well-labeled merchandise. Labeling adds to cost but our satisfaction is worth it. Ask for, read and use labels.

Then, keep up-to-date about labeling legislation.

Fiber identification gives information, but no guarantee of fabric performance. The Wool Labeling act requires manufacturers to state the amount of wool in a fabric, and whether it is new or re-used. Present labeling requirements cover one-fourth of the textile fiber trade.

The Federal Trade commission also has accepted Trade Practice rules requiring fiber labeling on Rayon, Acetate, silk, and linen fabrics and garments. Other rules define acceptable pre-shrinking and flammability processes, and the metallic weighting of silk. These are steps toward other helpful rules about fiber content labeling.

We should tell buyers in stores and dry-cleaners about the success or failure of purchases. They will relay comments to the manufacturer. Eventually, keen competition in the art and science of engineering new fabrics will produce even better ones than we have today.



If the Label About Care Says—

"*Wash and Wear*"—the garment can be laundered and worn with little or no ironing. Wash those with resin finishes in warm water (not above 120°F.), mild soap or detergents, and pretreat oily soil.

These garments may wrinkle less if they are carefully dryer-dried than if drip-dried on hangers—the exception, "durable pleating" which should be drip-dried.

"*Hand wash*" indicates careful laundering. For very delicate garments or single pieces requiring a different treatment, true hand washing in a bowl may be practical. Avoid too much detergent or soap, knuckle rubbing and hard wringing. It is possible, by proper management of washer and dryer, to get equally careful handling (see back page).

"*Washable*" indicates moderate colorfastness or sensitive finishes. Wash in warm (120°F.) water, with soap or detergent at home or at commercial laundry. It is best not to bleach.

"*Completely washable*" or "*Washfast*" may be washed at laundry or in home washer in hot water (160°F.) with soap or detergent and bleaching agent.

Laundering Today's Fabrics

Remove stains while fresh and always before the garment is washed (keep a reliable reference handy). Hot water and soaps set some stains permanently. Pretreat heavily soiled parts with detergent solution.

Oily stains on Dacron, Nylon, Acetates and resin-treated cottons and linens should be pretreated with solvent because these stains become permanently set when washed.

Machine Washing: Proper management of washer controls, water, choice of laundry supplies, and of timing can give good results with any washer. Machines with greater choice in water temperature, amount of agitation, length of wash and rinse, or spin speed may be more convenient.

The "blanket technique" of soaking, brief agitation and spinning may be used for garments that would be harmed by agitation. Do not wring or spin fabrics that wrinkle-set when wet and warm.

Dryer drying for regular laundry loads:

- For faster drying remove as much water as possible in washer, except for fabric finishes which become wrinkle set.
- Don't overload the dryer—this slows drying time and adds to agitation.
- Practice accurate timing — overdrying may cause shrinkage, harshness and wrinkles.

Dryer drying for careful handling:

- Dry a few pieces at a time with dry towels as buffers and absorbers.
- Tumble until nearly dry—usually a very short period. Use a bell timer to remind you to be there when dryer stops.
- Remove immediately and put on hanger.
- Smooth collars, facings, etc. into place. Gently stretch puckered seams.

Although proper washing and thorough rinsing give satisfactory laundering results, some laundry aid products are helpful. None of them are cures for poor laundry practices. Most of them work well to solve specific problems. The danger and unnecessary expense comes from their misuse.

Water Conditioners or Softeners of the non-precipitating type are a very effective aid to good

laundering. Add to wash with either soap or detergent (amount varies with hardness of water) and to rinse for thorough rinsing. Use for removal of built-up soil and detergent.

Rule of Thumb for Handling Fabrics

Avoid prolonged agitation, either in washing or drying, on wool, silk, man-mades, resin-treated cottons and blends.

Avoid excessive heat, on man-mades (especially Dynel, Acetate), wool, and resin-finished fabrics.

Treat blends and combinations of fibers according to recommendations for the most delicate fiber in the combination.

Starches or Sizing Aids give a crisper new look to regular fabrics or to finishes lost after several launderings. Vegetable starches are applied with each washing—buy prepared for convenience or make your own for economy. Plastic starches have a varying permanency and must be applied with caution—may require low heat ironing (overdosage may be removed with rubbing alcohol).

Bleaches are available in several forms.

Chlorine type bleach should be used cautiously—never on silk, wool, acetates or resin-treated fabric since it causes yellowing and fabric splitting. New finishes being developed will be tolerant to chlorine. Dry chlorine type bleach is safer, more convenient and more expensive than the liquid type.

Powdered perborate type bleaches are mild—may be used on resin-treated fabrics but become effective only at high temperatures.

Fabric softeners or "laundry rinses" may prove helpful for lending a softer feel to cottons, especially napped fabrics, and as a static electricity remover for man-made fabrics. Repeated overdosages may build up water repellency. Must be used after thorough rinsing.

This bulletin was prepared by Marjorie S. Lusk, Clothing Extension Specialist, and Arlean Pattison, Extension Home Management Specialist, State College of Washington; and reviewed by Extension specialists of the University of Idaho and Oregon State College.

Acknowledgement

This bulletin was made available to the Nebraska Agricultural Extension Service through the courtesy of the Agricultural Extension Services of Washington, Oregon and Idaho. It was originally published as PNW Bulletin 20.