Textile

Acetate

By Marshella

What is cellulose acetate?

a thermoplastic polymer made by acetylating cellulose, used as the basis of artificial fibers and plastic.

any of several compounds insoluble in water that are formed especially by the action of acetic acid, anhydride of acetic acid, and sulfuric acid on cellulose and are used for making textile fibers, packaging sheets, photographic films, and varnishes

FYI

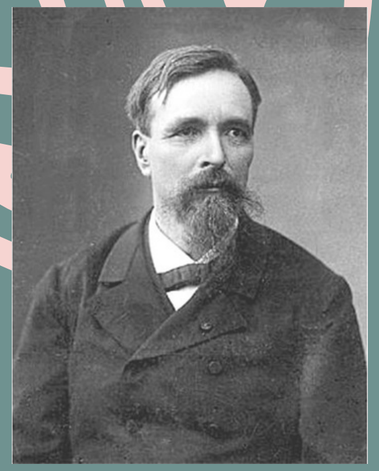
Acetate shares many similarities with rayon, and was formerly considered as the same textile. Acetate fabric is used frequently in wedding gowns and other bridal attire.Its lustrous sheen and smooth, satiny texture make it a good alternative to silk.

Trade names for acetate include Acele, Avisco, Celanese, Chromspun, and Estron.

History

Founder

In 1865, French chemist Paul Schützenberger discovered that cellulose reacts with acetic anhydride to form cellulose acetate. The German chemists Arthur Eichengrünand & Theodore Becker invented the first soluble forms of cellulose acetate in 1903. And in 1904, Camille Dreyfus and his younger brother Henri performed chemical research and development on cellulose acetate



First Uses

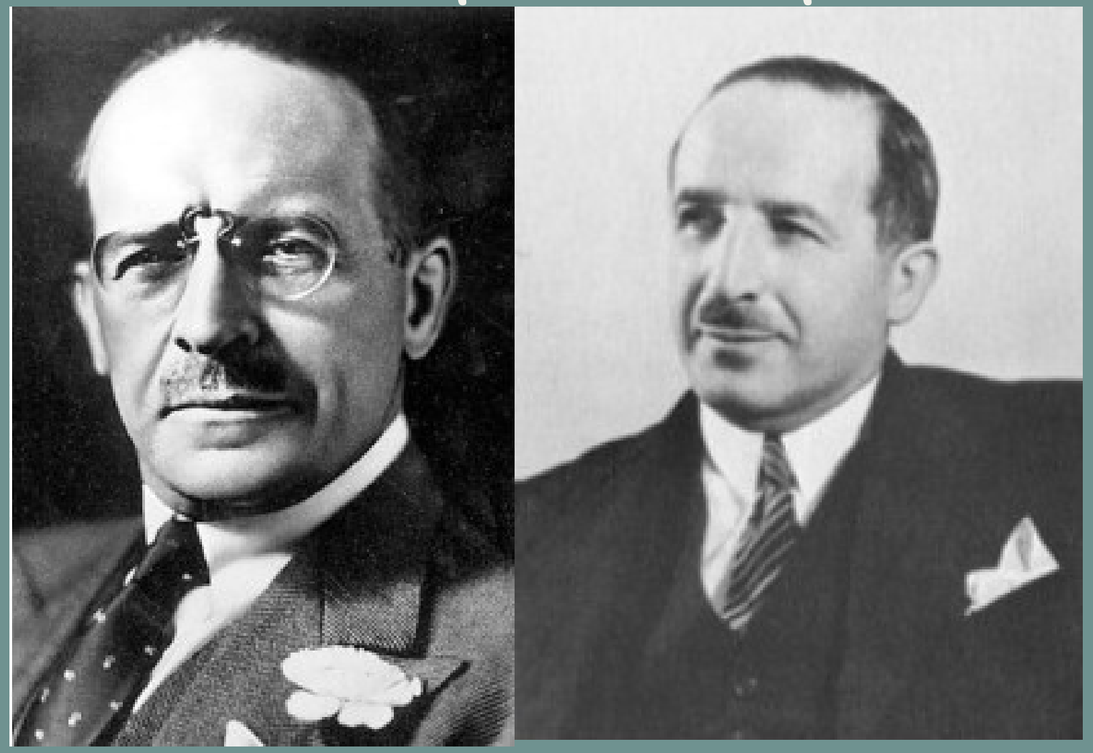
By 1910, they were producing film for the motion picture industry , and a small but constantly growing amount of acetate lacquer, called "dope", was sold to the expanding aircraft industry to coat the fabric covering wings and fuselage.And because of World War 1 they focused to manufactured acetate dope .

Acetate Fiber

After the war 1 ,The Dreyfus Brothers attention returned to the production of acetate fibers. The first yarn was of fair quality, but sales resistance was heavy, and silk associates worked zealously to discredit acetate and discourage its use. However, the thermoplastic nature of acetate made it an excellent fiber for moiré because the pattern was permanent and did not wash away. The same characteristic also made permanent pleating a commercial fact for the first time, and gave great style impetus to the whole dress industry.

The mixing of silk and acetate in fabrics was accomplished at the beginning, and almost at once cotton was also blended, thus making possible low-cost fabrics by means of a fiber which then was cheaper than silk or acetate. Today, acetate is blended with silk, cotton, wool, nylon, etc. to give fabrics excellent wrinkle recovery, good heft, handle, draping quality, quick drying, proper dimensional stability, cross-dye pattern potential, at a very competitive price.

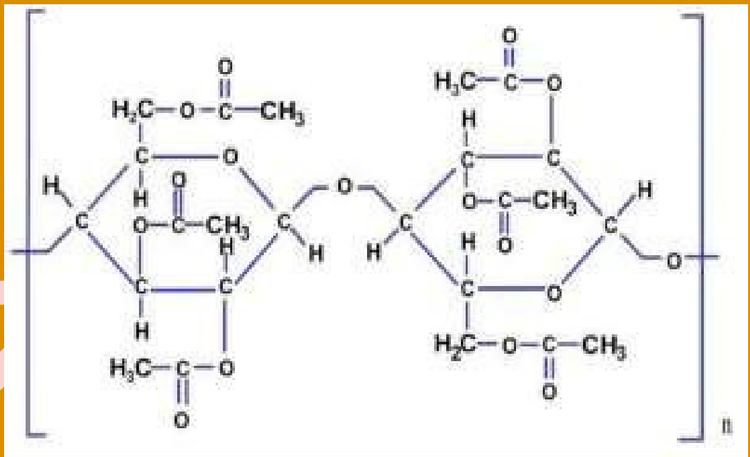
Founder of acetate fiber

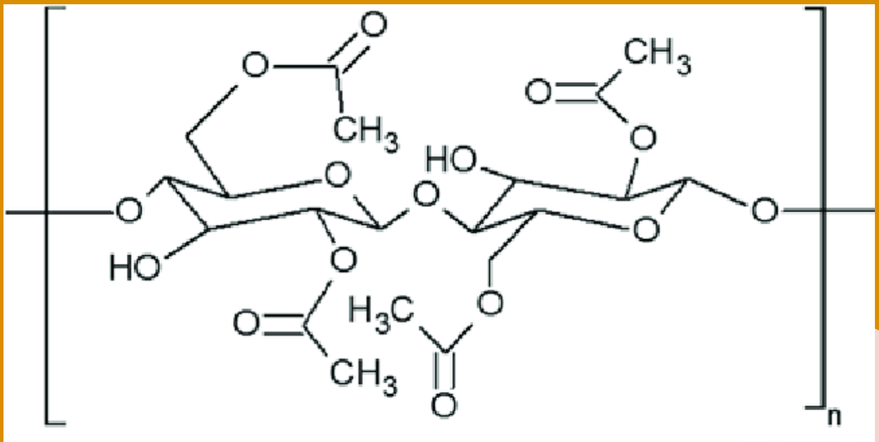


The Dreyfus brothers (Camille Dreyfus and Henri Dreyfus)

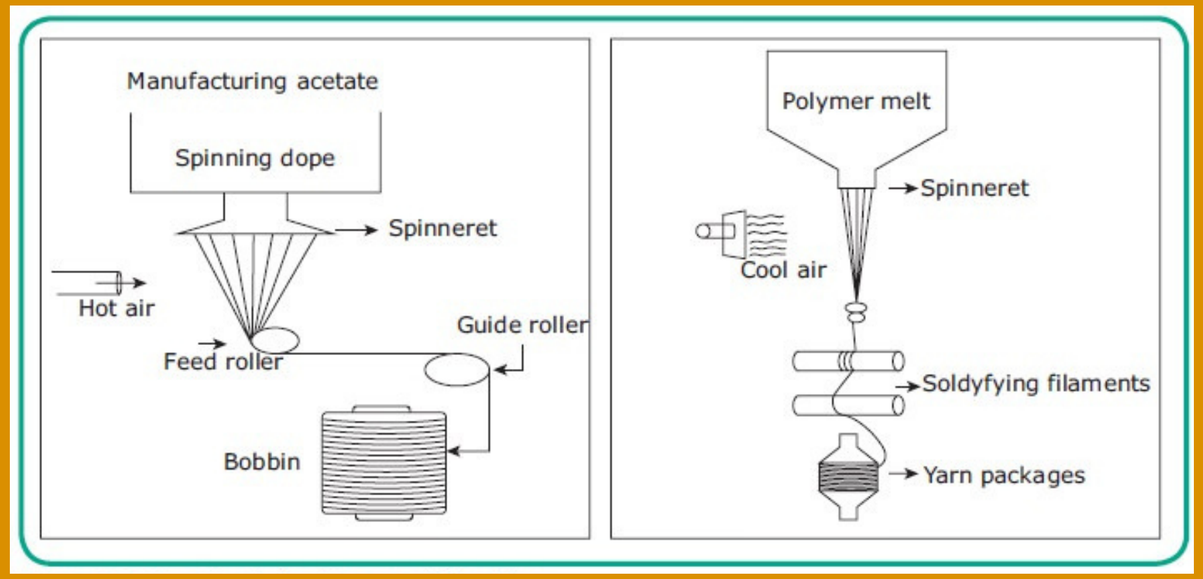
2 Type of Acetate

Triacetate	Acetate or Di-acetate
• Contain 3 acetate groups.	• Contains 2 acetate groups.
• No OH groups is present.	• Only one OH group is present.
• More crystalline.	• Less crystalline.
• High melting point.	• Low melting point.
• It is not hydrophilic.	• It is hydrophilic.
• It is called primary acetate.	• It is called secondary acetate.





Process



Finishing Process

Embossing

Heat setting

Moireing

Napping

Sizing

Water repellency

Wrinkle resistance

Advantages

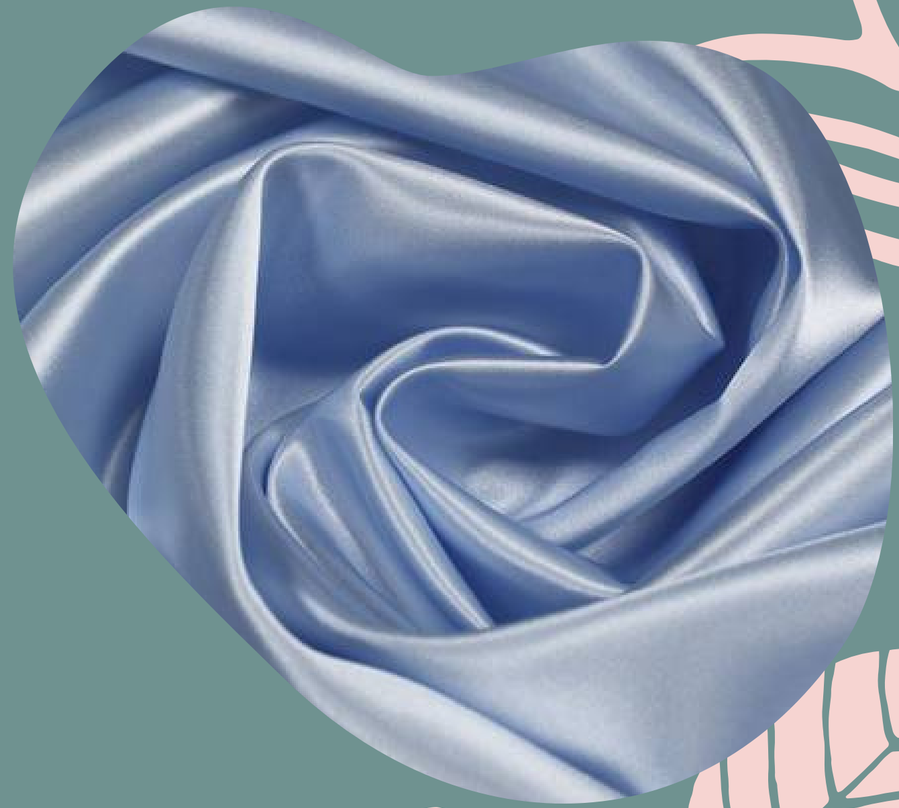
- Excellent drape (a fabric's ability to fold while worn)
- Luxurious hand (the feel of a fiber, yarn, or fabric to the
- wearer)
- High luster (reflection of light on fabric)
- No pilling
- Little static
- Low cost
- Holds white very well

Disadvantages

- Poor resiliency (fabric does not return to original shape or form after being altered)
- Poor elasticity
- Poor tenacity (ability to withstand stress)
- Low abrasion resistance
- Poor strength
- Thermoplastic (melts when heated)
- Susceptible to wrinkles
- Most often needs to be dry clean

Properties

- Hand: soft, smooth, dry, crisp, resilient
- Comfort: breathes, wicks, dries quickly, no static cling
- Drape: linings move with the body linings conform to the garment
- Color: deep brilliant shades with atmospheric dyeing meet colorfastness requirements
- Luster: light reflection creates a signature appearance
- Performance: colorfast to perspiration staining, colorfast to dry cleaning, air and vapor permeable
- Tenacity: weak fiber with breaking tenacity of 1.2 to 1.4 g/d; rapidly loses strength when wet
- Abrasion: poor resistance
- Heat retention: poor thermal retention; no allergenic potential (hypoallergenic)
- Dyeability: (two methods) cross-dying method where yarns of one fiber and those of another fiber are woven into a fabric in a desired pattern; solution-dying method provides excellent color fastness under the effects of sunlight, perspiration, air contaminants and washing



Characteristics

- cellulosic and thermoplastic
- selective absorption
- easily bonded
- acetate is soluble in many common solvents
- hydrophilichigh
- made from wood pulp, a renewable resource
- can be composted
- can be dyed
- resistant to mold and mildew
- easily weakened by strong alkaline solutions and strong oxidizing agents
- can usually be washed or dry cleaned; generally does not shrink

End Uses

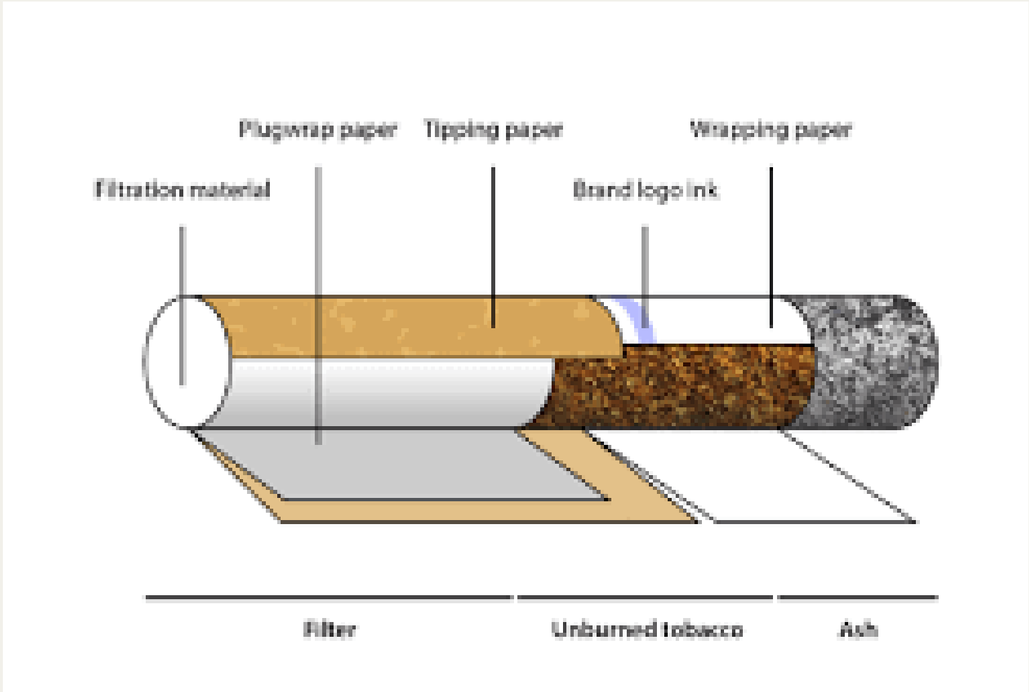
- Apparel: buttons, linings, blouses, dresses, wedding and party attire, home furnishings, draperies, upholstery and slip covers.
- Eyeglass frames are commonly made with cellulose acetate.
- Industrial uses: cigarette filters and other filters, ink reservoirs for fiber tip pens.
- High absorbency products: diapers and surgical products.
- The original Lego bricks were manufactured from cellulose acetate from 1949 to 1963.
- Award Ribbon: Rosettes for equestrian events, dog/cat shows, corporate awards, advertising and identification products all use cellulose acetate ribbon.
- Playing cards may be made of cellulose acetate.
- Toys
- Transparencies for overhead projection

For Apparel

Versace Dress

Givenchy Dress

Veronica Beard



For cigarettes filters

For Baby Diapers

For
eyeglasses
frame

David Kind Eyewear


Thankyou