

MAN-MADE
FIBER AND
TEXTILE
DICTIONARY

CELANESE
CORPORATION

sectional area, or in (2) force per unit linear density of the original specimen, and the strain may be expressed either as a fraction or as a percentage of the original specimen length. (Also see **LOAD-DEFORMATION CURVE**.)

STRETCH BREAKING: In conversion of tow-to-top, fibers are hot stretched and broken rather than cut to prevent some of the damage done by cutting.

STRETCH GROWTH: See **SECONDARY CREEP**.

STRETCH SPINNING: A term used in the manufacture of rayon. Rayon filaments are stretched while moist and before final coagulation to decrease their diameter and increase their strength.

STRETCH YARN: See **TEXTURED YARNS**.

STRIATIONS: Streaks or bands of various natures in fibers or fabrics.

STRINGUP: See **THREADUP**.

STRINGY SELVAGE: See **SLACK SELVAGE**.

STRIPPING: 1. A chemical process for removing color from dyed cloth by the use of various chemicals. Stripping is done when the color is unsatisfactory and the fabric is to be redyed. 2. The physical process of removing fiber that is embedded in the clothing of a card. 3. See **DEGUMMING**.

STUFFER BOX: A mechanism for crimping in which a fiber bundle (e.g., tow or filament yarn) is jammed against itself, causing it to crimp. By the suitable application of heat (usually wet steam and pressure to the stuffed tow, a high and permanent crimp can be forced into the bundle. (Also see **TEXTURING**, **Stuffer Box Method**.)

S TWIST: See **TWIST**, **DIRECTION OF**.

STYRENE: An unsaturated hydrocarbon, $C_6H_5-CH=CH_2$, prepared from coal tar. Polystyrene is a colorless, transparent plastic used for molding various articles for insulation, transparent parts, radio parts, etc.

SUBLIMATION: A loss of material as a result of surface evaporation of a solid. Some dyes lose color by sublimation.

SUBLISTATIC PROCESS: A method of applying print designs to fabrics containing man-made fibers by paper-transfer techniques. Developed by Sublistatic Corp. (See also **PRINTING**, **Heat Transfer Printing**.)

SUEDE FABRIC: Woven or knitted cloth finished to resemble suede leather, usually by napping, shearing, and sanding techniques.

SULFATE PULP: See **KRAFT PULP**.

SULFONATED: A term describing a material which has been reacted with sulfonic acid, usually to impart solubility, dyeability with cationic dyes, or other properties.

SULFONIC ACID: Any acid containing the sulfonic group, SO_3H .

SULFUR DYES: See **DYES**.

SURAH: A soft silk fabric, usually a twill and often woven in a plaid. Surah is used for ties, mufflers, blouses, and dresses.

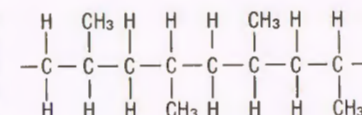
SURFACTANT: A surface-active agent, i.e., a product that acts by modifying the surface or boundary between two phases.

SWATCH: A small piece of fabric used as a representative sample of any fabric.

SWELLING: In textile usage, expanding of a fiber caused by the influence of a solvent or chemical agent. A property often used to facilitate dyeing.

SYNDIOTACTIC POLYMER:

A polymer structure in which the atoms that are not part of the backbone chain are distributed in a symmetrical and recurring manner above and below the backbone chain when the latter is in a single plane. (Also see **ATACTIC POLYMER** and **ISOTACTIC POLYMER**.)



Syndiotactic Structure

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TACKINESS: The property of being sticky or adhesive.

TACTIC POLYMER: A polymer whose molecular structure exhibits regularity or symmetry of non-backbone side groups rather than random ordering. (Also see **ATACTIC POLYMER**, **ISOTACTIC POLYMER**, and **SYNDIOTACTIC POLYMER**.)

TAFFETA: A plain-weave fabric with a fine, smooth, crisp hand and usually a lustrous appearance. Taffeta fabric usually has a fine cross rib made by using a heavier filling yarn than warp yarn. Taffetas are produced in solid colors, yarn-dyed plaids and stripes, and prints. Changeable and moiré effects are often employed. Although originally made of silk, man-made fibers are now often used in the production of taffeta.

TAK DYEING: See **KÜSTERS DYEING RANGE**.

TAKE-UP (TWIST): The change in length of a filament, yarn, or cord caused by twisting, expressed as a percentage of the original (untwisted) length.

TAKE-UP (YARN IN FABRIC): The difference in distance between two points in a yarn as it lies in a fabric and the same two points after the yarn has been removed from the fabric and straightened under specified tension, expressed as a percentage of the straightened length. In this sense, take-up is contrasted to the crimp of a yarn in a fabric which is expressed as a percentage of the distance between the two points in the yarn as it lies in the fabric. Take-up is generally used in connection with greige fabric.

TANGENT MODULUS: The ratio of change in stress to change in strain derived from the tangent to any point on a stress-strain curve.

completely the strength, flexibility, and other typical properties of the original fiber or filaments.

TEXTILE PROCESSING: Any mechanical operation used to translate a textile fiber or yarn to a fabric or other textile material. This includes such operations as opening, carding, spinning, plying, twisting, texturing, coning, quilling, beaming, slashing, weaving, and knitting.

TEXTURE: A term describing the surface effect of a fabric such as dull, lustrous, woolly, stiff, soft, fine, coarse, open or closely woven; the structural quality of a fabric.

TEXTURED: An adjective used to describe continuous filament man-made yarns (and woven and knit fabrics made therefrom) which have been crimped or have had random loops imparted, or which have been otherwise modified to create a different surface texture. (Also see TEXTURED YARNS and TEXTURING.)

TEXTURED YARNS: Yarns which develop stretch and bulk on subsequent processing. When woven or knitted into fabric, the cover, hand, and other aesthetics of the finished fabric better resemble the properties of a fabric constructed from spun yarn. (Also see TEXTURING.)

1. Bulked Yarn: Qualitative term to describe a textured yarn. A bulked yarn develops more bulk than stretch in the finished fabric.

2. Coil Yarn: A textured yarn which takes on a coil or spiral configuration when further processed. A coil yarn can be either a torque yarn or a nontorque yarn. A coil yarn can be formed by the false twist or edge crimp methods. Some bilateral fibers become coiled on further processing.

3. Core-Bulked Yarn: A bulky or textured yarn composed of two sets of filaments, one of which is straight to give dimensional stability and forms a core around and through which the other set is coiled or looped to give bulk.

4. Crinkle Yarn: A torque-free textured yarn which is characterized by periodic wave configurations. Crinkle yarns can be formed by the stuffer box, gear crimping, or knit-de-knit methods.

5. Entangled Yarn: A textured yarn of one variant which develops bulk by the air-jet texturing method.

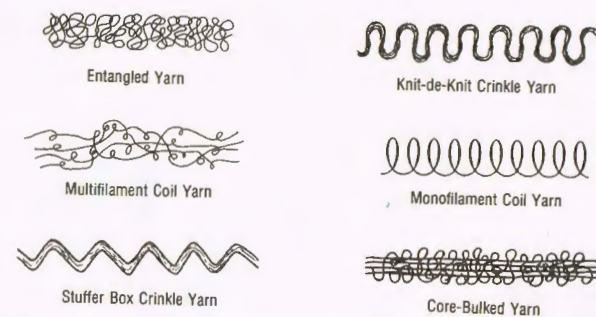
6. Modified Stretch Yarn: A stretch yarn which develops more bulk than usual but less bulk than a bulked yarn in the finished fabric.

7. Nontorque Yarn: A yarn which does not rotate or kink when permitted to hang freely. A nontorque yarn may be the result of plying two equal but opposite torque yarns.

8. Set Yarn: A textured yarn which is heat relaxed to reduce torque. Set yarns are not stretch yarns.

9. Stretch Yarn: Qualitative term to describe a textured yarn. A stretch yarn develops more stretch than bulk in the finished fabric.

10. Torque Yarn: When a torque yarn is permitted to hang freely, it rotates or kinks to relieve the torque introduced into the yarn during texturing.



Textured Yarns

TEXTURING: The process of crimping, imparting random loops, or otherwise modifying continuous filament yarn to increase cover, resilience, abrasion resistance, warmth, insulation, and moisture absorption or to provide a different surface texture. Texturing methods can be placed roughly into six groups. (Also see TEXTURED YARNS.)

1. Air Jet Method: In this method of texturing, yarn is fed through the turbulent region of an air jet at a rate faster than it is drawn off on the far side of the jet. In the jet, the yarn structure is opened, loops are formed, and the structure is closed again. Some loops are locked inside and others are locked on the surface of the yarn. An example of this method is the Taslan process. (Also see TEXTURED YARNS, Core-Bulked Yarn and Entangled Yarn.)

2. Edge Crimping Method: In this method of texturing, thermoplastic yarns in a heated and stretched condition are drawn over a crimping edge and cooled. Edge-crimping machines are used to make Agilon yarns. (Also see TEXTURED YARNS, Coil Yarn.)

3. False-Twist Method: This continuous method for producing textured yarns utilizes simultaneous twisting, heat-setting, and untwisting. The yarn is taken from the supply package and fed at controlled tension through the heating unit, through the false-twist spindle, through a set of take-up rolls, and onto a take-up package. The twist is set into the yarn by the action of the heater tube and subsequently is removed above the spindle, resulting in a group of filaments with the potential to form helical springs. Both stretch and bulked yarns are produced by false-twisting. Examples of false-twist textured yarns are Superloft, Flufloft, and Helanca. (Also see TEXTURED YARNS, Coil Yarn.)

4. Gear Crimping Method: In this texturing method, yarn is fed through the meshing teeth of two gears. The yarn takes on the shape of the gear teeth. (Also see TEXTURED YARNS, Crinkle Yarn.)

5. Knit-de-Knit Method: In this method of texturing, the yarn is knit into a 2-inch diameter hoseleg, heat-set in an autoclave, and then unraveled and wound onto a final package. This texturing method produces a crinkle yarn. (Also see TEXTURED YARNS, Crinkle Yarn.)

6. Stuffer Box Method: The crimping unit consists of two feed rolls and a brass tube stuffer box. By compressing the yarn into the heated stuffer

HITCH-BACK: See STICKER, 1.

HOLES (TOW): In tow opening processes, partial or complete filament breakage within a confined spread of tow, usually circular or oval in shape. Not to be confused with splitting or partial crimp deregistration which are linear.

HOLLAND FINISH: A glazed or unglazed finish containing oil and a filling material. The finish is applied to cotton fabrics to make them opaque or semiopaque. The resultant fabric resembles a beetled linen fabric called Holland fabric.

HOLLOW FILAMENT FIBERS: Man-made, continuous filament fibers, having voids created by introduction of air or other gas in the polymer solution or by melt spinning through specially designed spinnerets.

HONAN: A pongee-type fabric of the very best Chinese wild silk. Honan is sometimes woven with blue edges.

HOOK REED: See REED.

HOPSACKING: A coarse, open, basket-weave fabric which gets its name from the plain-weave fabric of jute or hemp used for sacking in which hops are gathered.

HORIZONTAL LINE: See RING.

HOT-AIR SHRINKAGE: Generally, the reduction in the dimensions of a fabric, yarn, or fiber induced by exposure to dry heat. Specifically, a fundamental property of fibers.

HOT-HEAD PRESS: A pressing machine capable of generating high temperatures and pressures. Used for pressing and processing durable-press fabrics.

HOT-MELT ADHESIVE: A solid material which melts quickly upon heating, then sets to a firm bond upon cooling. Use of this type adhesive provides almost instantaneous bonding.

HYDROEXTRACTOR: See CENTRIFUGE.

HYDROGENATION: The process of passing hydrogen into an unsaturated chemical in the presence of a catalyst to convert the material to a more saturated state (i.e., containing more combined hydrogen).

HYDROLYSIS: A double decomposition reaction involving the addition of the elements of water and the formation of an acid and a base, an acid and an alcohol, or an acid and phenol.

HYDROPHILIC: Having strong affinity for or the ability to absorb water.

HYDROPHOBIC: Lacking affinity for or the ability to absorb water.

HYDROSCOPIC: Having the ability to absorb moisture from the atmosphere. All fibers have this property in varying degrees.

HYDROXYL END GROUP: A polymer chain-terminating -OH group.

HYGROSCOPIC: See HYDROSCOPIC.