

PatentAlert 5-2009
HIGH TENACITY YARNS

HIGH LINEAR DENSITY, HIGH MODULUS, HIGH TENACITY YARNS AND METHODS FOR MAKING THE YARNS

WO2009048770 (A2)

2009-04-16

DU PONT [US]; CHITRANGAD BHATNAGAR [US]

The present invention relates to a yarn, comprising (a) a plurality of fibers having an orientation angle of no more than 8.0 degrees and made of a para-aramid having an inherent viscosity of 5.2 to 6.2 dl/g, (b) a linear density of at least 2666 dtex (2400 denier), (c) a modulus of at least 810 grams per dtex (900 grams per denier), and (d) a tenacity of at least 18 grams per dtex (20 grams per denier). The invention further relates to methods of making such yarn.

A HIGH STRENGTH LOW SHRINKAGE POLYESTER DRAWN YARN, AND A PROCESS OF PREPARING FOR THE SAME

WO2004011702

2008-04-18

KOLON INC

The present invention discloses a high strength low shrinkage polyester drawn yarn used as industrial yarns and a process of producing the same. The strength low shrinkage polyester drawn yarn has a thermal relaxation stress change ratio of 5 to 100% and a thermal relaxation stress area ratio of 50 to 140% on a thermal relaxation and shrinkage stress curve with a final temperature set to 170% C.; The process for producing a high strength low shrinkage polyester drawn yarn by a direct spin draw (DSD) process in which a quenching delay region I is mounted, wherein the high strength low shrinkage polyester drawn yarn is produced in such methods that a spinning oil is attached to the yarn being spun with an oiling apparatus 8 mounted at the position 500 to 1,500 mm below from the lower bottom surface of the insulating board 3, the relaxation stress of the yarn is controlled with one or two tension guides 9 mounted between Godet rollers of a relaxation region III, or both oiling apparatus 8 and tension guides 9 are mounted.

HIGH-STRENGTH POLYETHYLENE FIBER WITH HIGH PRODUCTIVITY, PRECURSOR THEREFOR, AND PROCESS FOR PRODUCING PRECURSOR

WO2009028590 (A1)

2009-03-05

TOYO BOSEKI [JP]; FUKUSHIMA YASUNORI [JP]; OHTA YASUO [JP]; MURASE HIROKI [JP]; SAKAMOTO GODO [JP]; SHIRAKO MASAYUKI [JP]; OKAMOTO JUN [JP]

[PROBLEMS] To provide a polyethylene fiber which can give a high-strength fiber when stretched at a low stretch ratio and a high stretching speed. [MEANS FOR SOLVING PROBLEMS] The polyethylene fiber is characterized by comprising an ultrahigh-molecular polyethylene which consists substantially of ethylene repeating units and has an intrinsic viscosity of 5 dL/g or higher. It is further characterized in that when a single yarn of the fiber is analyzed in a restrained state by temperature-rising differential scanning calorimetry, it gives a curve (DSC curve) in which the ratio of the area of all endothermic peaks to that of a higher-temperature-side endothermic peak is from 14.0/1.0 to 1.5/1.0.

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POLYETHYLENE YARNS

EP2028295 (A1)
2009-02-25
HONEYWELL INT INC

A polyethylene multi-filament yarn is provided, which comprises a polyethylene having an intrinsic viscosity in decalin at 135 DEG C of from 5 dl/g to 35 dl/g, fewer than two methyl groups per thousand carbon atoms, and less than 2 wt. % of other constituents. The yarn has a tenacity of at least 17 g/d as measured by ASTM D2256-02. The filaments of the yarn have a peak value of the ordered-sequence length distribution function, F(L), as determined at 23 DEG C from the low frequency Raman band associated with the longitudinal acoustic mode (LAM-1), at a straight chain segment length L of at least 40 nanometers.

ELASTIC POLYURETHANE YARN AND PROCESS FOR PRODUCTION THEREOF

WO2009011189 (A1)
2009-01-22
OPELONTEX CO LTD [JP]; TANAKA TOSHIHIRO [JP]; HARA MASASHI [JP]; KANBAYASHI TATSUAKI [JP]

Disclosed is an elastic polyurethane yarn which can exhibit excellent heat resistance even when an unsaturated fatty acid or a heavy metal is attached to the yarn during dyeing at a high temperature, and which has high elastic recovery and high strength/elongation. Specifically disclosed is an elastic yarn comprising a polyurethane mainly composed of a polymer diol and a diisocyanate, which contains (a) a hindered phenol compound, (b) an N,N-dialkylsemicarbazide compound and (c) a nitrogenated aromatic compound, wherein the nitrogenated aromatic compound (c) is contained in an amount of 0.01 to 0.30 wt% inclusive.

METHOD FOR PRODUCING HIGHLY TOUGH FIBER

JP2008308786 (A)
2008-12-25
TEIJIN FIBERS LTD; UNITIKA FIBERS LTD; TORAY INDUSTRIES; TOYO BOSEKI; ASAHI KASEI FIBERS CORP

PROBLEM TO BE SOLVED: To provide a high strength and highly tough fiber suitable for industrial uses. ; SOLUTION: This method for producing the highly tough fiber such as a polyester fiber, etc., is obtained by passing a melt-spun un-stretched yarn through a liquid vessel heated at or higher than the glass transition temperature, then before the polymer is cooled to a temperature at or lower than the glass transition temperature, passing the yarn through a liquid vessel having a temperature lower than the glass transition temperature to produce the highly tough un-stretched fiber of a structure having less entanglement of molecular chains and then performing a high magnitude stretching on the yarn. ; COPYRIGHT: (C)2009,JPO&INPIT

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POLYESTER/POLYAMIDE INDUSTRIAL YARN AS TYRE FRAMEWORK MATERIAL AND CO-BLENDED SPINNING PROCESS THEREOF IN MELTING STATE

CN101333717 (A)

2008-12-31

JUNMA TYRE CORD CO LTD [CN]

The invention relates to a polyester polyamide industrial yarn as well as a blending melt spinning method thereof, particularly relating to a method which adds a little polyester chip (PET) into polyamide chip 6 (PA6) for blending melt spinning, and the prepared polyester polyamide industrial yarn is used for tyre framework materials. The polyester polyamide industrial yarn and the blending melt spinning method thereof include the following steps of: (a) material proportioning; (b) fusion; (c) spinning; (d) cooling by lateral blowing, adding oil, drafting and winding formation, and finally obtaining the polyester polyamide industrial yarn which has breaking strength of 8.0 to 8.5cN/dtex and breaking elongation of 10 percent to 17 percent

HIGH TENACITY POLYETHYLENE YARN

WO2008154304 (A2)

2008-12-18

HONEYWELL INT INC [US]; TAM THOMAS Y-T [US]; ZHOU QIANG [US]; YOUNG JOHN A [US]; ARNETT CHARLES R [US]; TWOMLEY CONOR [IE]

A process for preparing ultra-high molecular weight polyethylene (UHMWPE) multi-filament yarns having improved tensile properties and the yarns and articles thereby produced.

PRODUCTION PROCESS OF HIGH-STRENGTH AND AGEING RESISTANCE POLYPROPYLENE FLAT YARN

CN101311387 (A)

2008-11-26

HUA GAO [CN]

The invention discloses a method of a high intensity anti-aging polypropylene flat wire, which uses polypropylene, polyethylene, ethylene-vinylacetate copolymer, hindered amine-770, nano-sized CaCO₃ and ultraviolet absorber 1001 as raw materials; the flat wire is obtained after the steps of agitation and preheat which aim at moisture elimination, polymerization under high temperature, air exhaust, pressing diaphragms, cooling, dissecting unfinished wire, stretching, heating and forming.; The toughness of the flat wire is improved as ethylene-vinylacetate copolymer modifying agent is used for copolymerization; the falling-proof strength of the flat wire is enhanced by adding nano-sized CaCO₃ filler; the oxidation is prevented and restrained by adding the hindered amine-770; an ultraviolet absorber is used for absorbing ultraviolet absorption, thus efficiently preventing the oxidation caused by illumination of ultraviolet from happening. The method solves the problems of unsatisfactory weather-ability, inferior toughness, low strength, short service life, and the like existing in the packing bags weaved with polypropylene flat wire using the prior art, and all the technical targets of the excellent product obtained from the modified polypropylene exceed the national standards.

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POLYPROPYLENE YARN

JP2008266872 (A)
2008-11-06
KURARAY CO

PROBLEM TO BE SOLVED: To provide a polypropylene yarn excellent in water retainability and excellent in strength. ; **SOLUTION:** This polypropylene yarn which comprises polypropylene having an isotactic pentad fraction (IPF) of $\geq 94\%$ and has a single filament fineness of 0.1-3 dtex and a yarn strength of ≥ 7 cN/dtex is characterized by having unevennesses which comprise large diameter protruded portions A1-A4 and small diameter non-protruded portions B1-B4 alternately placed along the yarn axis in an average distance of 6.5-20 [μ]m and an average height h1 to h4 of 0.35-1 [μ]m. ; **COPYRIGHT:** (C)2009,JPO&INPIT

POLYPROPYLENE YARN EXCELLENT IN HEAT RESISTANCE

JP2008266871 (A)
2008-11-06
KURARAY CO

PROBLEM TO BE SOLVED: To provide a polypropylene yarn excellent in heat resistance and excellent in strength. ; **SOLUTION:** The polypropylene yarn comprises polypropylene having an isotactic pentad fraction (IPF) of $\geq 94\%$, and is characterized in that the shape of an endothermic peak measured by differential scanning calorimetry (DSC) is a single shape having a half-power band width of ≤ 10 [deg.]C; an enthalpy variation of fusion ($[\Delta]H$) is ≥ 125 j/g; and a yarn strength is ≥ 7 cN/dtex. ; **COPYRIGHT:** (C)2009,JPO&INPIT

SPUN YARN

JP2008274496 (A)
2008-11-13
ASAHI KASEI FIBERS CORP

PROBLEM TO BE SOLVED: To provide a spun yarn which can give gloves high in air permeability, giving refreshing feeling, excellent in stretchability, and extremely excellent in wear amenity. ; **SOLUTION:** In this siro spun yarn or double roving spun yarn, fibers constituting the spun yarn is constituted by high strength staple fibers having a tensile strength of ≥ 10 cN/dtex. ; **COPYRIGHT:** (C)2009,JPO&INPIT

TECHNICAL YARNS, TEXTILE FABRIC AND USE

CN101285226 (A)
2008-10-15
TORAY FIBER RES INST CHINA CO [CN]

The invention discloses an industrial yarn and an industrial fabric as well as a use thereof. Yarn is the yarn which is made from a raw material of heat resistant fiber, after the yarn is weaved, the joint number of the yarn in a fabric is below 10 /100m². Tensile strength of the fabric, of which the longitude direction is above 500 N/5cm based on JIS L 10968.12.1A law, and the fabric is applied in the filtering material field and a reinforcement fabric of non-woven fabric. The invention has the advantages of reducing the joint number of the yarn, reducing unevenness of yarn twist, improving strength of the fabric and stability of ventilation degree value and improving overall performance of the finished product.

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POLYETHYLENE MULTI-FILAMENT YARN

EP1746187 (A1)

2008-09-24

DSM IP ASSETS BV [NL]

The invention relates to a process for making a polyethylene multifilament yarn comprising the steps of a) spinning multiple filaments from a solution comprising between 0.5 and 30 mass% of ultra high molecular weight polyethylene in a solvent; b) cooling the filament obtained to form gel filaments; c) removing at least partly the solvent from the gel filaments; d) drawing the filaments in at least one drawing step before, during or after removing the solvent, wherein the solution of step a) further comprises between 0.1 and 7 mass% of a sorbitol derivative and at step d) the filaments are drawn with a draw ratio of more than 15 to a strength of at least 1 GPa. The invention further relates to a high performance polyethylene multifilament yarn having a strength of at least 1 GPa, wherein the yarn comprises between 0.1 and 5 mass% of a sorbitol derivative.

CARBON FIBER AND COMPOSITE MATERIAL USING THE SAME

JP2008248423 (A)

2008-10-16

PROBLEM TO BE SOLVED: To provide a carbon fiber that provides a composite material having excellent impact resistance etc., and high composite characteristics and has improved surface characteristics, strength and modulus of elasticity. ; SOLUTION: The carbon fiber has a compressive strength in the traverse direction of single yarn of $\geq 130 \text{ kgf/mm}^2$, a surface oxygen concentration (O/C) of 20-30%, and a specific surface area value by a BET method by krypton absorption of $0.65\text{-}2.5 \text{ m}^2/\text{g}$. The composite material is composed of the carbon fiber and a matrix resin and has an compressive strength after impact of preferably $\geq 220 \text{ MPa}$. A carbon fiber having a modulus of elasticity of $\geq 340 \text{ GPa}$ and a strength of $\geq 5,970 \text{ MPa}$ is preferable as the carbon fiber. ; COPYRIGHT: (C)2009,JPO&INPIT

POLYPHONY THIOETHER SHORT FIBER AND MANUFACTURING METHOD THEREOF

CN101275309 (A)

TORAY INDUSTRIES [JP]

The invention comprises a polyphenyl thioether brief fiber with a boiling point more than 200 deg C. and a volatile component less than 0.15 weight%, or a polyphenyl thioether brief fiber with a fiber tensile-strength more than 5cN/dtex and a curling modulus of elasticity more than 75%. These PPS brief fibers are obtained by the following method, e.g., melting and granulating PPS powder in decompression at the temperature less than 350 deg C., drying granules in decompression at 130 deg C. to 170 deg C. and then melting granules, spinning fibers from a spinneret, and cutting fibers into a specific length after extension; ; or collecting un-drawn yarn from melted PPS by the spinneret, undergoing hot stretch for the un-drawn yarn more than 3 times but less than 4 times, processing the yarn by thermal treatment for 4 seconds at the temperature more than 180 deg C., and then curling the yarn in a crimper full of steam with the temperature more than 180 deg C., and cutting the yarn into the specific length, relaxing the yarn before and after specific length thermal treatment, to obtain a slack rate between hot stretch and curling treatment more than 1% but less than 6%.

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LIQUID CRYSTALLINE POLYESTER YARN

JP2008240230 (A)
2008-10-09
TORAY INDUSTRIES

PROBLEM TO BE SOLVED: To provide a liquid crystalline polyester yarn which can enhance a weaving property and a woven fabric quality without deteriorating the characteristics of a woven fabric comprising the yarns of a solid phase-polymerized liquid crystalline polyester, such as high strength, high elastic modulus and excellent heat resistance, and thereby has excellent wear resistance, excellent uniformity in the longitudinal direction, and small single fiber fineness. ; **SOLUTION:** This liquid crystalline polyester yarn is characterized in that a peak half-value width is ≥ 15 [deg.]C at an endothermic peak (T_{m1}) observed, when measured in a temperature-rising condition of 20[deg.]C/min from 50[deg.]C in a differential calorie measurement, and a strength is ≥ 12.0 cN/dtex. ; **COPYRIGHT:** (C)2009,JPO&INPIT

PROCESS FOR PRODUCING POLYPHENYLENE SULFIDE FILAMENT YARNS

US2008213561 (A1)
2008-09-04
DIOLEN IND FIBERS B V [NL]

The present invention relates to a process for producing a polyphenylene sulfide multifilament yarn, a polyphenylene sulfide multifilament yarn and the use of a polyphenylene sulfide multifilament yarn. The process for producing a polyphenylene sulfide multifilament yarn is characterized in that only after time period between 0.1 sec and 0.3 sec after leaving the spinneret the filaments of the spun yarn are subjected to an active cooling stage. The Polyphenylene sulfide multifilament yarn having a filament linear density of 5 dtex to 30 dtex, an overall linear density of 500 dtex to 2500 dtex, a breaking tenacity in the range of 50 cN/tex to 80 cN/tex and an elongation at break of 8% to 16% for a yarn with a breaking tenacity in the range of 60 cN/tex to 80 cN/tex and an elongation at break of 16% to 30% for a yarn with a breaking tenacity in the range of 50 cN/tex to 60 cN/tex.

ELASTIC YARN

JP2008163479 (A)
2008-07-17
TOYO BOSEKI

PROBLEM TO BE SOLVED: To obtain an elastic yarn that has an excellent heat resistance, heat aging resistance, water resistance, light resistance and low-temperature physical properties, etc., and excellent retention of block property. ; **SOLUTION:** The elastic yarn comprises a polyester elastomer obtained by bonding a hard segment composed of a polyester consisting of an aromatic dicarboxylic acid and an aliphatic or alicyclic diol to a soft segment mainly composed of an aliphatic polycarbonate. The polyester elastomer which is a thermoplastic polyester elastomer has a difference in melting point (T_{m1}-T_{m3}) between the melting point (T_{m1}) of 0-50[deg.]C obtained by the first measurement and the melting point (T_{m3}) obtained by the third measurement when a cycle in which the thermoplastic polyester elastomer is heated by a differential scanning calorimeter from a room temperature to 300[deg.]C at a heating rate of 20[deg.]C/minute, is kept at 300[deg.]C for 3 minutes and cooled to a room temperature at a cooling rate of 100[deg.]C/minute is repeated three times and a tensile strength at break of 15-100 MPa. ; **COPYRIGHT:** (C)2008,JPO&INPIT

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POLYESTER FIBER FOR SANDBAG

JP2008156772 (A)

2008-07-10

UNITIKA FIBERS LTD

PROBLEM TO BE SOLVED: To provide a polyester fiber for sandbag, which provides a sandbag having a high strength, an excellent weather resistance and flexibility and hardly slidable even if used in a piled form. ; SOLUTION: The polyester fiber for sandbag includes a multifilament composed of a polyethylene terephthalate containing carbon black in the fiber in an amount of 0.2-1.2 mass%, having an elongation at break of ≥ 5.5 cN/dtex, and a ratio of fiber yarns to coefficient of static friction of the yarn ($F/F[\mu]s$) of ≥ 1.7 . ; COPYRIGHT: (C)2008,JPO&INPIT

TECHNIQUE FOR PRODUCING ULTRA-HIGH STRONG POLYPROPYLENE INDUSTRY FILAMENT YARN WITH ONE-STEP METHOD

CN101220525 (A)

2008-07-16

JIANGSU HUAYA CHEMICAL FIBER C [CN]

The invention discloses a production technique of an ultra high strength polypropylene industrial filament, and adopts spinning and a drawing one-step method which comprises chips drying and tackifying, melt spinning, high temperature tensile, heat setting and winding formation. Adopting an innovative technique of 5 pairs of hot rolls drawing and heat-setting, the invention effectively decreases the drawing speed of fibers, prolongs the heat setting time of fibers, leads fibers to possess uniform stable orientation structure and optimizes the state of fibers while guarantees physical properties of products. The ultra high strength polypropylene industry filament, which is produced by the invention, has the advantages of high strength, reasonable extension and dry heat-shrinkage, good heat resisting and impact resisting properties and good fatigue durability.

NYLON-66 ULTRAVIOLET RESISTANCE YARN AND PRODUCING METHOD THEREOF

CN101220531 (A)

2008-07-16

JIANGSU HUAYA CHEMICAL FIBER C [CN]

The invention discloses a nylon-66 anti-ultraviolet yarn and a manufacturing method thereof. The invention is manufactured by mixing functional anti-ultraviolet nano powder with nylon-66 slices and blending the functional mixture with the nylon 66 slices to spin; the invention has lower strength loss and longer service life than other fibers in use, and has the advantages of simple manufacturing method, easily obtained raw material and convenient operation.

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POLYESTER FIBER FOR SEAT BELT

JP2008106418 (A)
2008-05-08
TORAY INDUSTRIES

PROBLEM TO BE SOLVED: To provide a polyester fiber for a seat belt which has a high strength, and a small change in entanglement before and after woven in a high density in a needle loom, is excellent in strength retention and process passage rate of raw yarn, and has good entanglement characteristics. ; **SOLUTION:** The polyester fiber having a fineness of 1,000 to 2,000 dtex and a single fiber fineness of 2-20 dtex satisfies a relationship: $[\Delta]L = \frac{3}{4} L1n - L2n \frac{3}{4} \leq 15$ (cm), $[\Delta][\sigma] = \frac{3}{4} [\sigma]1 - [\sigma]2 \frac{3}{4} \leq 15$, wherein L1 (cm) the tear length of the polyester fiber; L2 (cm) is the tear length of the polyester fiber after subjected to tension at a tension of 2 cN/dtex. ; **COPYRIGHT:** (C)2008,JPO&INPIT

CRIMPED YARN AND FIBER STRUCTURE USING THE SAME

JP2008106410 (A)
2008-05-08
TORAY INDUSTRIES

PROBLEM TO BE SOLVED: To provide an aliphatic polyester crimped yarn providing a fiber structure not only excellent in abrasion resistance, but also excellent in peeling resistance of core sheath interface, free from change in appearance, having high quality appearance and excellent in endurance, and to provide the fiber structure composed of the crimped yarn. ; **SOLUTION:** The crimped yarn is composed of a core-sheath composite fiber, wherein a core component is composed of an aliphatic polyester resin (A) and a sheath component is composed of a thermoplastic polyamide resin (B) and the crimped yarn has the following physical properties of (1) 1.5-3.0 cN/dtex strength, (2) 5-40 dtex single fiber fineness and (3) $\leq 6\%$ boiling water shrinkage. ; **COPYRIGHT:** (C)2008,JPO&INPIT

METHOD FOR OBTAINING HIGH-TENACITY ARAMID YARN

WO2008061668 (A1)
2008-05-29

TEIJIN ARAMID B V [NL]; BOERSTOEL HANNEKE [NL]; BOS JOHANNES [NL]; SCHAAP ADRIAAN ANTON [NL]; WILBERS DENNIS [NL]; BUSSCHER LEONARDUS ANTONIUS GO [NL]; SCHOTMAN ANTONIUS HENRICUS MAR [NL]; STOLZE KURT RAINER HANS-HEINRI [DE]

The invention relates to a method for obtaining high-tenacity aramid yarn, wherein the yarn is made of a copolymer obtained from a mixture of monomers comprising DAPBI, an aromatic para-diamine, and an aromatic para-diacid, wherein the yarn is heated in at least two process steps, characterized in that in a first step the yarn is heated at a temperature of 200 to 360 DEG C at a tension of at least 0.2 cN/dtex, followed by a second step wherein the yarn is heated at a temperature of 370 to 500 DEG C at a tension of less than 1 cN/dtex. The invention further pertains to a multifilament aramid yarn spun from a sulfuric acid spin dope and having a tenacity of at least 2500 mN/tex.

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POLYESTER FIBER

JP2008057061 (A)
TEIJIN FIBERS LTD

PROBLEM TO BE SOLVED: To provide a dope-dyed black polyester fiber having good black color and effective for suppressing the abrasion of accessories such as a roller and a guide contacting with the fiber in the production of a yarn, the processing of the obtained fiber or the use of the formed fiber article, and causing little deterioration of the strength at break in use. ; **SOLUTION:** The sheath-core conjugate polyester fiber is composed of a modified cross-section core component containing carbon black and having 3-5 sharp protrusions on the cross-section perpendicular to the fiber axis and a sheath component completely covering the core component. The fiber has an A/B ratio falling within a specific range, wherein A is the diameter of a circumscribing circle of the tip ends of the sharp protrusions of the core component, and B is the diameter of the fiber cross-section. ; **COPYRIGHT:** (C)2008,JPO&INPIT

BETTER TECHNIQUE FOR PRODUCING NYLON 6

CN101144204 (A)
2008-03-19
JIANGSU SHENGHONG CHEM FIBER [CN]

The proposal of the present invention provides a production process of nylon 6 with higher quality. During a sliced sheet rotating drum drying process, the speed rate of washing air current of equipment is increased, the total pressure bore by the converting drum is reduced, and thus the dust of the sliced sheet is cleaned out. The spinnability of the sliced sheet is improved; simultaneously the internal quality of silk is greatly improved; the plate mending period of the spinneret plate is prolonged; and waste silk consumption is simultaneously reduced. In practical production, when being used in the sock industry, caprone 6 stretch yarn has the advantages of good wear resistance, no pilling, high strength, and long wear life

POLYAMIDE FIBER FOR FISHNET, AND FISHNET USING THE SAME

JP2008031572 (A)
2008-02-14
TORAY INDUSTRIES

PROBLEM TO BE SOLVED: To provide a fiber for a fishnet, which is capable of obtaining a high strength and high toughness net fabric excellent in durability and weather resistance that could not be available by conventional technologies, and also since in the production of the polyamide fiber for the fishnet, almost without having yarn cutting in its spinning process and also almost without having the yarn cutting in its net-knitting process, enabling the production by reducing the number of necessary persons, and further the polyamide fiber for the fishnet having a wide use property capable of being applied for various net fabrics suitable for various fishery methods. ; **SOLUTION:** This polyamide fiber for the fishnet consisting of the polyamide having a relative viscosity of 3.0 to 4.0 has the following characteristics. (1) Single yarn fineness=10 to 48 dtex. (2) Tensile strength=6.0-7.5 cN/dtex. (3) Toughness=105 to 130 cN/dtex * %. (4) Knot strength=5.0 to 7.0 cN/dtex. (5) (Knot strength/tensile strength) * 100=85 to 100 %. ; **COPYRIGHT:** (C)2008,JPO&INPIT
Biobased fibers & composites

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PRODUCTION OF BIOPOLYMER FILM, FIBRE, FOAM AND ADHESIVE MATERIALS FROM SOLUBLE S-SULFONATED KERATIN DERIVATIVES

US2009069541 (A1)
2009-03-12
KERATEC LTD [NZ]
WOO3018673 (A1)

Film, fibre, foam and adhesive materials are produced from soluble S-sulfonated keratins. Once formed, the films, fibres, foams or adhesives are treated to modify the properties of the materials, in particular to improve the wet strength of the materials. Treatments used include removal of the S-sulfonate group by treatment with a reducing agent, treatment with an acid or treatment with a common protein crosslinking agent or treatment with a reduced form of keratin or keratin protein. The films are made by solvent casting a solution of S-sulfonated keratin proteins, the foam made by freeze-drying a solution of S-sulfonated keratin proteins and the fibres made by extruding a solution of a S-sulfonated keratin protein.

BIODEGRADABLE MULTICOMPONENT FIBRE

EP1966423
2008-12-17
KIMBERLY CLARK CO [US]

A multicomponent fiber that contains a high-melting aliphatic polyester and a low-melting aliphatic polyester is provided. The multicomponent fibers are substantially biodegradable, yet readily processed into nonwoven structures that exhibit effective fibrous mechanical properties.

BIODEGRADABLE NATURAL FIBRE COMPOSITE

EP1958762 (A1)
2008-08-20
WK NATURFASER TECHNOLOGIE GMBH [AT]

The natural bonded fiber material, consisting of a natural fiber textile of straw fiber (4) and at least one other natural fiber, e.g. a flat fiber (5), and a matrix of biodegradable material such as polyactide (6), has the natural fiber textile and the matrix heated to bond as a hybrid textile material. The matrix comprises 20-30% of the end product.