

Search query (2): [SP]: [0001] the invention relates to a suture comprising a suture member, the suture member comprising ultra high molecular weight polyolefin filaments.[0002] in ep-a-561108 a suture is disclosed comprising ultra high molecular weight polyethylene. the suture comprises at least 7 fibres, that are spiral braided or formed as a hollow spiroid braid with the fibres forming a core within the braid.[0003] in us2003/0139775 a suture is disclosed comprising ultra high molecular weight polyolefin fibres and another fibre, for example a polyester fibre. the suture includes a multifilament cover of the ultrahigh molecular weight polyethylene fibres braided with polyester or nylon fibres.[0004] in wo 2004/082724 a suture is disclosed comprising a core of twisted ultra high molecular weight polyethylene fibres and a braided cover made from a different material, for example polyester. it is stated in the patent application that a woven braid is the standard in the industry for sutures.[0005] disadvantages of the known sutures are that their structure is complicated, so that it is laborative to produce the sutures. furthermore there is need for sutures having improved properties.[0006] aim of the invention is to provide a suture that is simple to produce and yet shows good properties.[0007] surprisingly this object is obtained if the suture member comprising ultra high molecular weight polyolefin filaments consists of two or more strands, the strands having been twisted together to form the member.[0008] it is very surprising that with such a suture comprising a member of such a rather simple structure very good results are obtained, whereas the known suture members comprising the ultra high molecular weight polyolefin filaments since a long time all have a complicated structure, such as a braided structure rather than a twisted structure and often have a separate core and sheath structure, the sheath being braided around the core.[0009] the suture member of the suture according to the invention is very soft, well pliable and yet stronger than the known sutures having the braided structure.[0010] furthermore the suture member has a smooth surface and a round intersection, so that it slides very easy through tissue when repairing a wound.[0011] moreover it shows high knot strength.[0012] the suture according to the invention may consist of the suture member, or it may next to the suture member comprise further components, for example a needle may be attached to the suture, or the suture may comprise a bone anchor.[0013] high molecular weight polyolefin filaments are known to the skilled person. the filaments have an elongate body whose length dimension is greater than the transverse dimensions of width and thickness. it is preferred for the filaments to have a tensile strength of at least 1.2 gpa and a tensile modulus of at least 40 gpa.[0014] homopolymers and copolymers of polyethylene and polypropylene are particularly suitable as polyolefins for the production of the high molecular weight polyolefin fibres. furthermore, the polyolefins used may contain small amounts of one or more other polymers, in particular other alkene-1-polymers.[0015] preferably the filaments are ultra high molecular weight polyethylene (uhmwpe) filaments, prepared by a gel spinning process, as for example described in ep 0205960 a, ep 0213208 a1, us 4413110, gb 2042414 a, ep 0200547 b1, ep 0472114 b1, wo 01/73173 a1, and advanced fiber spinning technology, ed. t. nakajima, woodhead publ. ltd (1994), isbn 1-855-73182-7, and references cited therein. gel spinning is understood to include at least the steps of spinning at least one filament from a solution of ultra-high molecular weight polyethylene in a spin solvent cooling the filament obtained to form a gel filament removing at least partly the spin solvent from the gel filament and drawing the filament in at least one drawing step before, during or after removing spin solvent. suitable spin solvents include for example paraffins, mineral oil, kerosene or decalin. spin solvent can be removed by evaporation, by extraction, or by a combination of evaporation and extraction routes. such filaments are commercially available as spectra(r) or dyneema(r) grades.[0016] good results are obtained if the uhmwpe has an intrinsic viscosity (iv. as determined according to method ptc-179 (hercules inc. rev. apr. 29, 1982) at 135 degrees c in decalin, with dissolution time of 16 hours, with anti-oxidant dbpc in an amount of 2 g/l solution, and the viscosity at different concentrations extrapolated to zero concentration) of above 5 dl/g. particularly suitable is uhmwpe with iv of between about 8 and 40 dl/g, more preferably between 10 and 30, or 12 and 28, or between 15 and 25 dl/g. these ranges represent an optimum in polymer processability and filaments properties. intrinsic viscosity is a measure for molar mass (also called molecular weight) that can more easily be determined than actual molar mass parameters like mn and mw. there are several empirical relations between iv and mw, but such relation is highly dependent on molar mass distribution. based on the equation $mw = 5.37 \times 10^4 [iv]^{1.37}$ (see ep 0504954 a1) an iv of 8 dl/g would be equivalent to mw of about 930 kg/mol.[0017] preferably, the uhmwpe is a linear polyethylene with less than one branch or side chain per 100 carbon atoms, and preferably less than one side chain per 300 carbon atoms, a branch usually containing at least 10 carbon atoms. the linear polyethylene may further contain up to 5 mole percent of one or more comonomers, such as alkenes like propylene, butene, pentene, 4-methylpentene or octene.[0018] in a preferred embodiment, the uhmwpe contains a small amount of relatively small groups as side chains, preferably a c1-c4 alkyl group. it is found that a filament from uhmwpe with a certain amount of such groups show reduced creep behaviour. too large a side chain, or too high an amount of side chains, however, negatively affects the processing and especially the drawing behaviour of the filaments. for this reason, the uhmwpe preferably contains methyl or ethyl side chains, more preferably methyl side chains. the uhmwpe therefore contains preferably at least 0.2, 0.3, 0.4 or 0.5 methyl or ethyl side chains. the amount of side chains is preferably at most 20, more preferably at most 10 per 1000 carbon atoms.[0019] the uhmwpe can be a single polymer grade, but also a mixture of two or more different grades, e.g. differing in iv or molar mass distribution, and/or number of side chains.[0020] the uhmwpe filaments may further contain usual amounts, generally less than 5 mass percent of customary additives, such as anti-oxidants, thermal stabilizers, colorants, nucleating agents, flow promoters, catalyst residues etc. as long as these components are suitable for the use in a surgical product. the uhmwpe filaments preferably contain less than 800 ppm of residual amounts of spin solvent, more preferably less than 500, 250, or even less than 100 ppm. the filaments may also contain other polymers, preferably polyolefinic polymers, like other polyethylenes, polypropylenes, or their copolymers, including rubbery copolymers like epdm, epr, etc. the amount of such other polymer is always lower than the amount of uhmwpe in the filament, and is preferably not more than 30 mass percent, or more preferably not more than 20, 10 or 5 mass percent of the uhmwpe filament.[0021] a strand is the largest structural element in the suture member according to the invention. a strand may consist of a monofilament, a yarn or two or more assembled yarns. it is even possible that a strand consists of two or more sub-strands, that as such have the same structure as defined above for a strand. preferably, the strand is a single multifilament yarn.[0022] in case a strand contains more than one yarn, preferably the yarns are twisted together to form the strands in a direction that is opposite to the direction in which the strands are twisted together to form the suture member.[0023] in case a strand contains sub-strands, preferably the sub-strands are twisted together to form the strands in a direction that is opposite to the direction in which the strands are twisted together to form the suture member. the opposite twist direction suppresses the unravelling of the suture element.[0024] the suture member may consist of between 2 and 8 strands.[0025] in one preferred embodiment the suture member consists of 2 strands, the strands having been twisted together to form the suture member. in that case the suture member can readily be knotted. this is an important property for sutures as during an operation many knots have to be made. easy application of the knots helps the surgeon quick and accurately doing his job. in another preferred embodiment the suture member consists of 3 or 4 strands, the strands having been twisted together to form the suture member. in that case the suture slips very easy through tissue when the suture is applied for example when stitching a wound. the suture also has a very high strength.[0026] a suitable size for the suture member of the suture according to the invention may be in the full usp range for sutures (e.g. 12-0 to 10). a usp value of 10 corresponds with a maximum diameter of 1.3 mm. in one preferred embodiment the suture member has a titer of between 25 and 500 dtex. in that case the suture is very suitable for cardiovascular operations. in another preferred embodiment the suture has a titer of between 500 and 3000 dtex. in that case the suture is very suitable for use in orthopaedic applications. in yet another preferred embodiment the suture member has a tite

Results: 17

1) Family number: 2189092 (US4413110A)

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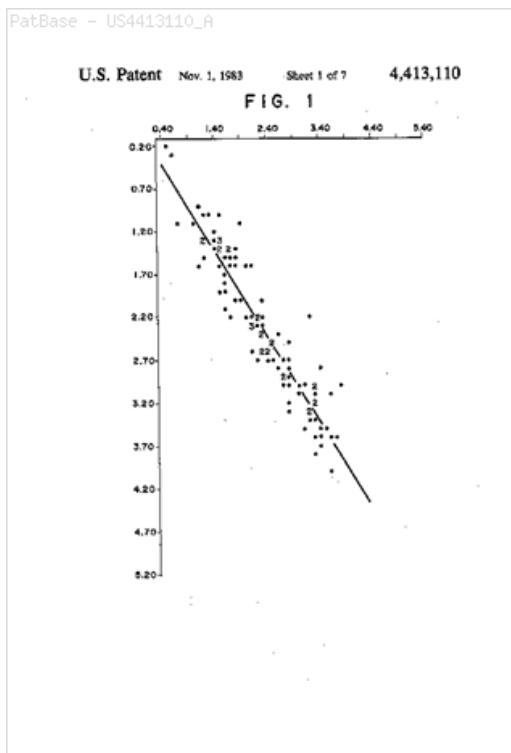
Title: HIGH TENACITY, HIGH MODULUS POLYETHYLENE AND POLYPROPYLENE FIBERS AND INTERMEDIATES THEREFORE

Abstract: Solutions of ultrahigh molecular weight polymers such as polyethylene in a relatively non-volatile solvent are extruded through an aperture at constant concentration through the aperture and cooled to form a first gel of indefinite length. The first gels are extracted with a volatile solvent to form a second gel and the second gel is dried to form a low porosity xerogel. The first gel, second gel or xerogel, or a combination, are stretched. Among the products obtainable are polyethylene fibers of greater than 30 or even 40 g/denier tenacity and of modulus greater than 1000 or even 1600 or 2000 g/denier.

Classifications:

International (ipc 8-9): B29C49/00 B29C55/00 B29C55/04
C08J5/18 D01F6/02 D01F6/04 D01F6/06 D01F6/12 D01F6/66
D02J1/22 (Advanced/Invention);
B29C49/00 B29C55/00 B29C55/04 C08J5/18 D01F6/02
D02J1/22 (Advanced/Non-invention);
B29C49/00 B29C55/00 B29C55/04 C08J5/18 D01F6/02 D01F6/04
D01F6/58 D02J1/22 (Core/Invention)
International (ipc 1-7): B29D7/02 B29D7/24 C08F10/02 C08F10/06
C08J5/18 C08K5/02 D01F6/00 D01F6/04 D01F6/06 D01F6/12
D01F6/66 D01F8/06
CPC: D01F6/06 Y10S428/902 D01F6/04 D01F6/02
European: D01F6/02 D01F6/04 D01F6/06
US: 264/164 264/177F 264/184 264/203 264/204 264/205 264/210.1
264/210.8 264/343 264/344 428/902 524/108 524/366 524/462

524/464 524/583 524/585 526/348.1 526/351 526/352
JP F-Term: 4L035 4L035/BB05 4L035/BB06 4L035/BB11
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 4L035/HH01 4L035/HH02 4L035/MA01 4L035/MA10 4F012
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 4F210/AH17 4F210/AH47 4F210/AH59 4F210/QA03 4F210/QA10
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JP F-Index: D01F6/04/A D01F6/06/Z B29C55/04 D01F6/12/Z
 D01F6/66 D02J1/22 D02J1/22/J



Family:

Publication number	Publication date	Application number	Application date
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AU198550242 A1	19860612	AU19850050242	19851121
AU549453 B2	19860130	AU19820082254	19820401
AU581702 B2	19890302	AU19850050242	19851121
CA1174818 A1	19840925	CA19820401450	19820422
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ES513190 A0	19830616	ES19820513190	19820522
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US4536536 A	19850820	US19830523503	19831003
US4551296 A	19851105	US19840572607	19840120

Priority:

US19810259266 19810430 US19820359019 19820319 US19820359020 19820319
 AU19820082254 19820401 CA19820401450 19820422 JP19820073297 19820430
 US19830523503 19831003 US19840572607 19840120 AU19850050242 19851121

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Designated states: BE CH DE FR GB IT LI NL SE

2) Family number: 31807102 (US2005107797A)

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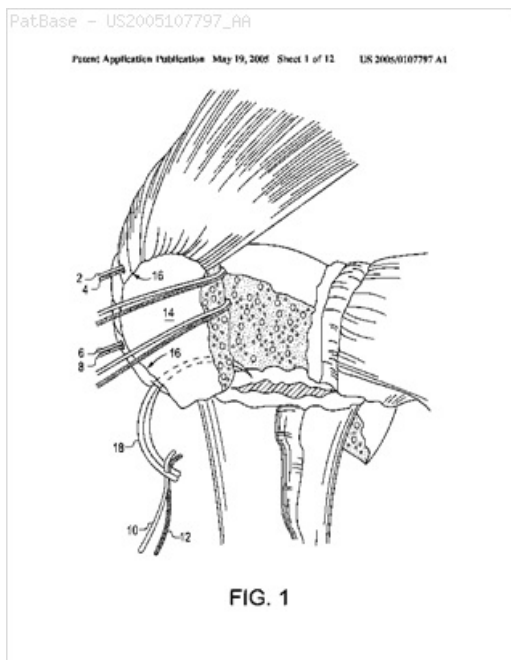
Title: HIGH STRENGTH SUTURE KIT FOR SHOULDER FRACTURE REPAIR

Abstract: High strength suture kits and methods for shoulder fracture repair using a shoulder prosthesis. An exemplary kit contains color-coded lengths of high-strength suture and a copy of a complementary surgical plan represented and detailed by a written brochure, and an audio and/or video recording, for example. The complementary surgical plan involves pre-installing the color-coded suture, which is used for horizontal cerclage, temporary sutures, and vertical tension bands. The fractured humeral head is replaced with the prosthetic humerus, which is secured by the shoulder tuberosities using the pre-installed suture.

Classifications:

International (IPC 8-9): A61B17/04 A61B17/06
 A61B17/56 (Advanced/Invention);
 A61B17/04 A61B17/06 A61B17/56 (Core/Invention)

International (IPC 1-7): A61B17/06 A61B17/56
CPC: A61B17/0483 A61B17/06004 A61B17/06133 A61B17/06166
A61B2017/0496 A61B2017/0619
European: A61B17/04H A61B17/06S K61B17/04T K61B17/06A
K61B17/06P4 K61B17/06S9
US: 606/74



Family:

Publication number	Publication date	Application number	Application date
EP1522262 A1	20050413	EP20040024006	20041008
US2005107797 AA	20050519	US20040960975	20041012

Priority:

US20030509950P 20031010 US20040960975 20041012

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Assignee(s): (std): ARTHREX INC

Inventor(s): (std): ROMEO ANTHONY A

Inventor(s): ROMEO ANTHONY

Agent(s): DICKSTEIN SHAPIRO MORIN AND OSHINSKY LLP

Designated states: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

3) Family number: 15935217 (US2003033655A)

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Title: HIGH TENACITY, HIGH MODULUS FILAMENT

Abstract: Polyethylene solutions are extruded through a multi-orifice spinneret into a cross-flow gas stream to form a fluid product. The fluid product is stretched at a temperature at which a gel will form at a stretch ratio of at least 5:1 over a length of less than about 25 mm with the cross-flow gas stream velocity at less than about 3 m/min. The fluid product is quenched in a quench bath consisting of an immiscible liquid to form a gel. The gel is stretched. The solvent is removed from the gel to form a xerogel and the xerogel product is stretched in at least two stages to produce a polyethylene yarn characterized by a tenacity of at least 35 g/d, a modulus of at least 1600 g/d and a work to break of at least 65 J/g. The yarn is further characterized by having greater than about 60 percent of a high strain orthorhombic crystalline component and, optionally, a monoclinic crystalline component greater than about 2 percent of the crystalline content. Composite panels made with these yarns exhibit excellent ballistic resistance, e.g. SEAC of 300 J-m²/Kg or higher against .38 caliber bullets using test procedure NILECJ-STD-0101.01. A ballistic resistant composite panel is provided comprising a polyethylene multi-filament yarn having a tenacity of at least about 35 g/d, a modulus of at least 1600 g/d, a work-to-break of at least about 65 J/g wherein the yarn has greater than about 60 percent of a high strain orthorhombic crystalline component and the yarn has a monoclinic crystalline component greater than about 2 percent of the crystalline content

Classifications:

International (IPC 8-9): D01D D01D4/02 D01F D01F6/04 D02G3/44 F41H F41H5/00 F41H5/02 F41H5/04 F41H5/08 (Advanced/Invention); D01F6/04 (Advanced/Non-invention); D01F6/04 (Core/Invention)

International (IPC 1-7): B32B27/12 C08F110/02 D01D4/02 D01D5/088 D01D5/098 D01F6/04 D02G3/02 F41H1/02 F41H5/04 F41H5/08

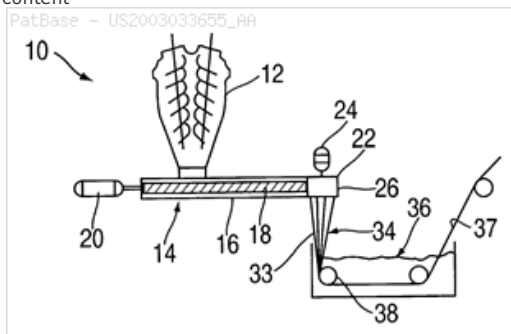
CPC: Y10T428/2913 D01D4/02 D01F6/04 F41H5/0471 Y10T442/2623 Y10T442/3667 Y10T442/622 Y10T442/629

European: D01D4/02 D01F6/04 F41H5/04F

US: 2/2.5 2/2.500P 264/103 264/103S 264/210.7 264/210.700S 264/211.14 264/211.140S 264/211.16 264/211.160S 428/364 428/364S 442/135 442/263 442/347 442/353 525/55 526/352 526/352S

JP F-Term: 2C014 2C014/KK04 4L035 4L035/AA09 4L035/BB05 4L035/BB06 4L035/BB11 4L035/BB15 4L035/BB66 4L035/BB69 4L035/BB72 4L035/BB76 4L035/BB82 4L035/BB85 4L035/BB89 4L035/BB90 4L035/BB94 4L035/DD13 4L035/EE08 4L035/EE09 4L035/EE20 4L035/HH03 4L035/HH10 4L035/KK05 2C014/KK01 4L035/AA05 4L035/BB31 4L035/BB40 4L035/BB54 4L035/BB55 4L035/BB57 4L035/BB71 4L035/BB81 4L035/DD20 4L035/FF01 4L035/HH02 4L036 4L036/MA04 4L036/MA33 4L036/UA07 4L036/UA25

JP F-Index: D01F6/04/B F41H5/08 D02G3/44 F41H5/00 F41H5/02



Family:

Publication number	Publication date	Application number	Application date
AT319869 E	20060315	AT20010924361T	20010327
AT372402 E	20070915	AT20010028130T	20010327

AU2001251020 AA	20011008	AU20010251020	20010327
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TR200504299 T2	20061026	TR20050004299T	20010327
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WO0173173 A1	20011004	WO2001US09762	20010327

Priority:

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KR20027012876 20020927 WO2001US09762 20020927

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Designated states: AE AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CR CU CY CZ DE DK DM EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

4) Family number: 4994270 (US5106563A)

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Title: PROCESS FOR PRODUCING HIGHLY ORIENTED MOLDED ARTICLE OF ULTRA-HIGH-MOLECULAR-WEIGHT POLYETHYLENE

Abstract: A pre-oriented molded article of ultrahigh-molecular-weight polyethylene is composed of ultrahigh-molecular-weight polyethylene having an intrinsic viscosity of at least 5 dl/g, has a degree of orientation of at least 0.8, and has such a creep property that a stretched product of the molded article having a degree of orientation of about 0.97 shows an elongation of not more than 2 percent in an atmosphere at 80 DEG C. at 1000 seconds. The pre-oriented molded article is produced by (1) extruding a high-concentration molding solution composed of 15 to 80 parts by weight of ultrahigh-molecular-weight polyethylene and 85 to 20 parts by weight of a solvent capable of dissolving said polyethylene from a molding die at a temperature at which the molding solution remains a solution, (2) taking up the extrudate at a draft ratio of at least 3, and cooling the extrudate during or after take-up to crystallize the polyethylene in the extrudate and to form a pre-oriented molded article. A stretched molded article is produced from the pre-oriented molded article by (3) stretching the pre-oriented molded article at a stretch ratio of at least 3.

Classifications:

International (IPC 8-9): B29C55/00 B29C55/30

D01F6/04 (Advanced/Invention);

B29K23/00 (Advanced/Non-invention);

B29C55/00 D01F6/04 (Core/Invention)

International (IPC 1-7): B29C55/00 B29C55/30 B29K23/00

D01D5/04 D01F6/04

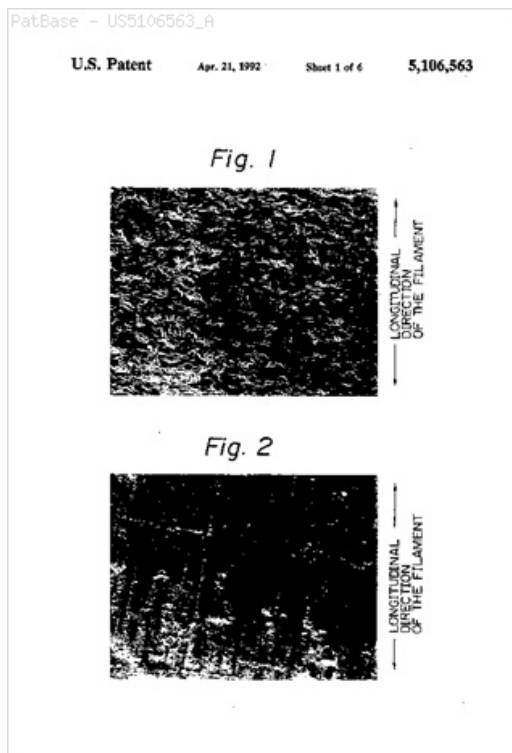
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D01F6/04

European: B29C55/00B D01F6/04 L29K223/06 L29K23/06

L29K995/00F29

US: 264/203 264/204 264/205 264/210.7 264/210.8 264/211.13
 264/211.15
JP F-Term: 4F210 4F210/AA04/A 4F210/AA04/C 4F210/AG14
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JP F-Index: B29C55/30 B29K23:00 D01F6/04/A D01F6/04/Z



Family:

Publication number	Publication date	Application number	Application date
DE3680022 D1	19910808	DE19863680022	19860430
EP0200547 A2	19861105	EP19860303290	19860430
EP0200547 A3	19880113	EP19860303290	19860430
EP0200547 B1	19910703	EP19860303290	19860430
JP1965445 C3	19950825	JP19850092356	19850501
JP6102846 B4	19941214	JP19850092356	19850501
JP61252312 A2	19861110	JP19850092356	19850501
US5106563 A	19920421	US19890406172	19890913

Priority:

JP19850092356 19850501 US19860857373 19860430

Probable Assignee: MITSUI CHEMICALS INC

Assignee(s): (std): MITSUI PETROCHEMICAL IND

Assignee(s): MITSUI PETROCHEMICAL INDUSTRIES LTD ; MITSUI PETROCHEMICAL INDUSTRIES LTD TOKIO TOKYO JP ; MITSUI CHEMICALS INC ; MITSUI PETROCHEM IND LTD

Inventor(s): (std): NAGANUMA SEIKOH ; YAGI KAZUO ; NAGANUMA KIYOHIO

Inventor(s): NAGANUMA SEIKOH OHTAKE SHI HIROSHIMA KEN JP

Designated states: DE FR GB IT NL

5) Family number: 40722272 (EP1847276A1)

© PatBase

Title: TWISTED SUTURE

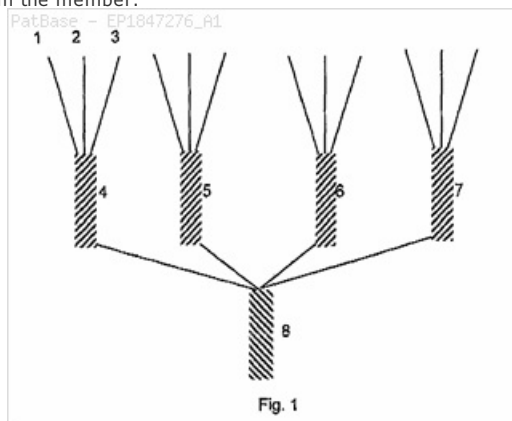
Abstract: Suture comprising a suture member, the suture member comprising ultra high molecular weight polyolefin filaments, characterized in that the suture member comprising the ultra high molecular weight polyolefin filaments consists of two or more strands, the strands having been twisted together to form the member.

Classifications:

International (IPC 8-9): A61L17/04 (Advanced/Invention)

CPC: A61B17/06166 A61L27/04 C08L23/06 D07B1/025 D07B2205/2014

European: A61B17/06S A61L27/04 D07B1/02C M08L23/06 N07B205/20C10



Family:

Publication number	Publication date	Application number	Application date
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Priority:

EP20060008179 20060420

Probable Assignee: ROYAL DSM NV

Assignee(s): (std): DSM IP ASSETS BV ; ROYAL DSM NV

Assignee(s): DSM IP ASSETS B V

Inventor(s): (std): SNIJDER CARINA SACHA ; DIRKS CHRISTIAAN HENRI PETER

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU

6) Family number: 42574290 (US2010217317A)

© PatBase

Title: COLORED SUTURE

Abstract: Suture containing filaments of ultra-high molecular weight polyethylene (UHMwPE), characterized in that the suture contains a multi-filament yarn that is obtained by a process comprising the steps of: a) Providing a mixture containing UHMwPE, a spinning solvent and a pigment b) Spinning a multi-filament yarn from the mixture by the gel spinning process.

Classifications:

International (IPC 8-9): A61B17/04 A61B17/064 A61L17/00 A61L17/04 D01D5/04 D01D5/06 D01F1/04 D01F6/04 D02G3/04 D07B1/02 (Advanced/Invention);

A61B17/04 A61B17/064 A61L17/00 D01F1/02 D01F6/04 (Core/Invention)

International (IPC 1-7): D01F1/04

CPC: A61L17/04 D07B1/025 D07B2205/2014 C08L23/06 D07B2801/10 D02G3/04 D01D5/06 D01D5/04 D10B2509/04 D01F6/04 D01F1/04

European: A61L17/04 D01F1/04 D01F6/04

US: 524/407 606/228 606/228P

JP F-Term: 4C081 4C081/AC02 4C081/BC02 4C081/CA02 4C081/CB01 4C081/CF22 4C081/DA04 4C081/EA03

JP F-Index: A61L17/00 A61L17/04

Family:

Publication number	Publication date	Application number	Application date
AU2008253241 AA	20081127	AU20080253241	20080523
AU2008253241 BB	20120223	AU20080253241	20080523
BRPI0811936 A2	20141125	BR2008PI11936	20080523
BRPI0811936 B1	20180821	BR2008PI11936	20080523
CA2686533 AA	20081127	CA20082686533	20080523
CA2686533 C	20150210	CA20082686533	20080523
CN101680122 A	20100324	CN200880017166	20080523
CN101680122 B	20130306	CN200880017166	20080523
DE602008023731 D1	20130606	DE200860023731T	20080523
DK2158344 T3	20130708	DK20080773348T	20080523
EA015582 B1	20111031	EA20090001589	20080523
EA015582 B9	20120130	EA20090001589	20080523
EA015582 B9	20111031	EA20090001589	20080523
EA200901589 A1	20100430	EA20090001589	20080523
EP2158344 A1	20100303	EP20080773348	20080523
EP2158344 B1	20130410	EP20080773348	20080523
ES2420970 T3	20130828	ES20080773348T	20080523
IN07829DN2009 A	20100709	IN2009DN07829	20091201
JP2010527669 T2	20100819	JP20100508747T	20080523
JP5582404 B2	20140903	JP20100508747T	20080523
KR101693850 B1	20170106	KR20097026770	20080523
KR20100029091 A	20100315	KR20097026770	20080523
MX2009012564 A1	20091209	MX20090012564	20080523
US2010217317 AA	20100826	US20080599869	20080523
US2017044692 AA	20170216	US20160338085	20161028
US9506168 BB	20161129	US20080599869	20080523
WO08141835 A1	20081127	WO2008EP04135	20080523

Priority:

EP20070010217 20070523

EP20080773348 20080523

WO2008EP04135 20080523

US20100599869 20100114

US20160338085 20161028

Probable Assignee: ROYAL DSM NV

Assignee(s): (std): DSM IP ASSETS BV ; ROYAL DSM NV ; SIMMELINK JOSEPH ARNOLD PAUL MARIA ; SIMMELINK JOSEPH ARNOLD PAUL MARIA J A P M ; VAZ CLAUDIA MARIA ; VAZ CLAUDIA C ; DSM IP ASSESTS BV

Assignee(s): DSM IP ASSETS B V

Inventor(s): (std): MARIA SIMMELINK JOSEPH ARNOLD PAUL ; MARIA VAZ CLAUDIA ; SIMMELINK JOSEPH ARNOLD PAUL M ; SIMMELINK JOSEPH ARNOLD PAUL MARIA ; SIMMELINK JOSEPH ARNOLD PAUL MARIA J A P M ; VAZ CLAUDIA C ; VAZ CLAUDIA MARIA

Inventor(s): CLAUDIA MARIA VAZ ; JOSEPH ARNOLD PAUL MARIA SIMMELINK ; SIMMELINK JOSEPH ARNOLD PAUL MARIA JAPM

Agent(s): PHILLIPS ORMONDE FITZPATRICK; SMART AND BIGGAR; HANSEN JESPER ROEMER; LEHMANN MARIA ISABEL; NIXON AND VANDERHYE PC; HANSEN J R

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: Cabled core and braided suture made therefrom

Abstract: A braided suture possesses a cable core which resists any tendency to protrude through the surrounding braid structure.

Classifications:

International (IPC 8-9): A61B17/06 A61L17/00 (Advanced/Invention);

A61B17/00 (Advanced/Non-invention)

International (IPC 1-7): A61B17/04

CPC: D04C1/12 A61B17/06166 A61B2017/00004 A61L17/005 A61L2300/406 A61L2300/412 A61L2300/418

European: A61B17/06S A61L17/00C D04C1/12 K61B17/00A K61L17/00A K61L17/00B4G K61L300/406 K61L300/412 K61L300/418

US: 57/204 57/236 57/237 57/243 606/228

Family:

Publication number	Publication date	Application number	Application date
US5456697 A	19951010	US19930110356	19930823

Priority:

US19870089732 19870826	US19880227699 19880803	US19890344745 19890428
US19900491215 19900309	US19900623224 19901205	US19910733362 19910719
US19920855682 19920617	US19930110356 19930823	

Probable Assignee: UNITED STATES SURGICAL CORP

Assignee(s): (std): UNITED STATES SURGICAL CORP

Inventor(s): (std): CHESTERFIELD MICHAEL P ; HERMES MATTHEW E ; KAPLAN DONALD S ; KOYFMAN ILYA S

Title: METHOD OF MANUFACTURING A DRAWN MULTIFILAMENT YARN

Abstract: The invention relates to a method of manufacturing a polyolefin multifilament yarn comprising twisting a partially drawn multifilament yarn and post-twist-drawing the twisted partially drawn multifilament yarn.

Classifications:

International (IPC 8-9): D01D D01D5/12 D01F D01F6/04 D01F6/06

D02G1/02 D02G3/26 D04C D04C1/12

D06B9/00 (Advanced/Invention);

D01D D01F D04C (Subclass/Invention)

CPC: D04C1/12 D10B2321/0211 D01D5/12 D01F6/04 D02G3/26

D06B9/00

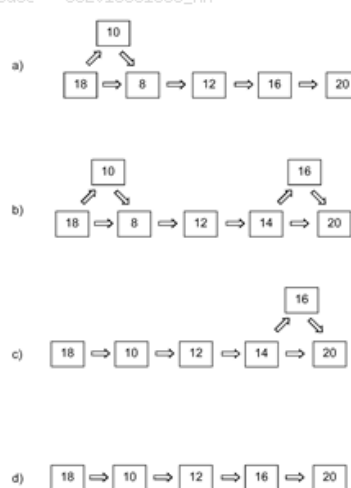
US: 264/103

JP F-Term: 4L035 4L035/AA04 4L035/BB05 4L035/BB33 4L035/FF08 4L036 4L036/MA04 4L036/MA05 4L036/MA26 4L036/MA33

4L036/PA03 4L036/PA05 4L036/PA14 4L036/PA21 4L036/PA26

JP F-Index: D01F6/06/Z D02G1/02/A

PatBase - US2015361588_AA



Family:

Publication number	Publication date	Application number	Application date
BR112015017564 A2	20170711	BR20151117564	20140127
CA2897906 AA	20150710	CA20142897906	20140127
CN104955992 A	20150930	CN201480005797	20140127
CN104955992 B	20171010	CN201480005797	20140127
DE602014004759 D1	20161222	DE201460004759T	20140127
EA201500766 A1	20160129	EA20150000766	20140127
EP2948579 A2	20151202	EP20140701413	20140127
EP2948579 B1	20161109	EP20140701413	20140127
EP3051010 A1	20160803	EP20160159435	20140127
HK1215287 A1	20160819	HK20160103250	20160321
JP2016508549 T2	20160322	JP20150554180T	20140127
KR20150110550 A	20151002	KR20157020134	20140127
MX2015009421 A1	20150924	MX20150009421	20140127
MX344520 B	20161216	MX20150009421	20140127
US2015361588 AA	20151217	US20140762212	20140127
WO14114793 A2	20140731	WO2014EP51534	20140127
WO14114793 A3	20141030	WO2014EP51534	20140127

Priority:

EP20130152764 20130125	US20130756577P 20130125	EP20140701413 20140127
WO2014EP51534 20140127	US20140762212 20140127	EP20160159435 20140127

Probable Assignee: ROYAL DSM NV

Assignee(s): (std): DSM IP ASSETS BV ; ROYAL DSM NV

Assignee(s): MITTENZWEI ANDREAS OLIVER ; DANSCHUTTER DE EVERT FLORENTINUS FLORIMONDUS ; DE
DANSCHUTTER EVERT FLORENTINUS FLORIMONDUS

Inventor(s): (std): DE DANSCHUTTER EVERT FLORENTINUS FLORIMONDUS ; MITTENZWEI ANDREAS OLIVER ; EVERT
FLORENTINUS FLORIMONDUS DANSCHUTTER DE ; DE EVERT FLORENTINUS FLORIMONDUS
DANSCHUTTER ; DANSCHUTTER DE EVERT FLORENTINUS FLORIMONDUS ; ANDREAS OLIVER
MITTENZWEI ; EVERT FLORENTINUS FLORIMONDUS DE DANSCHUTTER

Agent(s): SMART AND BIGGAR; BOOTSMA JAN PC; CHAN TANG AND KWOK; HANSEN JESPER

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR
CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID
IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN
MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG
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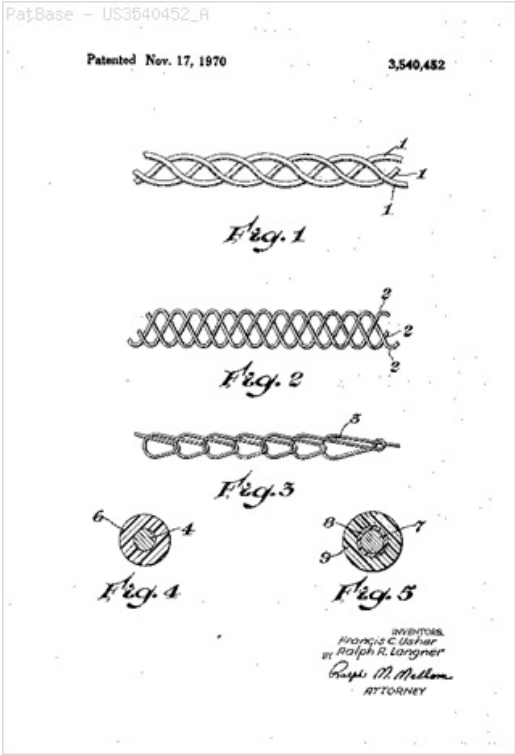
9) Family number: 1310353 (US3540452A) © PatBase

Title: SUTURE

Abstract: 1,258,688. Yarns. DOW CHEMICAL CO. 17 July, 1970, No. 34784/70. Heading D1W. A suture comprises a core coated with a copolymer of a monoolefin having 2-6 carbon atoms per molecule and an a, #-monoethylenically unsaturated carboxylic acid having 3-8 carbon atoms per molecule. The core may be monofilament or multifilaments assembled by intertwisting, braiding or crocheting and metallic e.g. of stainless steel or titanium, magnesium or lead or alloys thereof, or non-metallic e.g. silk, glass fibre, polyolefins such as polyethylene, polybutenes, polyhexenes, polyacrylates, polyamides, polyesters, polyethers, polyurethanes, polyvinyls. The olefin of the copolymer may be ethylene which easily reacts with an acid or with which ethylene homopolymers will serve as a base to which acids may be grafted: the acid may be acrylic, methacrylic, ethacrylic crotonic, isocrotonic, tiglic, angelic, succinic, fumaric, maleic, itaconic, citraconic and for the purpose of the invention is stated to include some a, #-monoethylenically unsaturated anhydrides of carboxylic acids such as methyl hydrogen maleate, methyl hydrogen fumarate and ethyl hydrogen fumarate. The suture may have an outer adherent coating of an organic plastics material e.g. polyolefins such as polyethylene, polypropylene, polybutene, polyacrylates such as polymethacrylate and polyethacrylate, polyamides, polyesters, polyethers, polyurethanes, polyvinyls. Single, coated sutures may be assembled into composite forms, as by intertwisting, braiding, crocheting, which may be provided with an outer coating. The two forms of coating may be applied by conventional methods and apparatus e.g. solution deposition, dip coating in a fluidised bed, or extrusion coating to which the copolymer and/or plastics materials may be supplied in pellet or granular form..

Classifications:

International (IPC 8-9): A61B17/06 A61L17/14 (Advanced/Invention);
A61B17/06 A61L17/00 (Core/Invention)
International (IPC 1-7): A61F13/00 A61L17/00
CPC: Y10T428/294 A61L17/145 A61B17/06166 Y10T428/31692
European: A61B17/06S A61L17/14C
US: 128/335.5 428/379 428/461 606/231



Family:

Publication number	Publication date	Application number	Application date
CA944645 A1	19740402	CA19700086530	19700625
DE2035224 A1	19720120	DE19702035224	19700716
FR2096931 A1	19720303	FR19700026373	19700717
FR2096931 B1	19740503	FR19700026373	19700717
GB1258688 A	19711230		19700717
US3540452 A	19701117		19680228

Priority:

US19680709006 19680228 CA19700086530 19700625 DE19702035224 19700716
FR19700026373 19700717 GB19700034784 19700717

Probable Assignee: DOW CHEMICAL CO

Assignee(s): (std): DOW CHEMICAL CO

Assignee(s): DOW CHEMICAL CO THE ; DOW CHEMICAL COMPANY THE ; DOW CHEMICAL CY ; DOW CHEMICAL CY
US ; LANGNER RALPH R ; USHER FRANCIS C ; DOW CHEM CO ; DOW CHEM CO THE

Inventor(s): (std): LANGNER RALPH R ; USHER FRANCIS C

Inventor(s): RALPH R LANGNER ; FRANCIS C USHER

Title: VERY LOW CREEP, ULTRA HIGH MODULUS, LOW SHRINK, HIGH TENACITY POLYOLEFIN FIBER HAVING GOOD STRENGTH RETENTION AT HIGH TEMPERATURES AND METHOD TO PRODUCE SUCH FIBER

Abstract: By poststretching, at a temperature between about 135 DEG and 160 DEG C., a polyethylene fiber, which has already been oriented by drawing at a temperature within 5 DEG C. of its melting point, an ultra high modulus, very low creep, low shrink, high tenacity polyolefin fiber having good strength retention at high temperatures is obtained. The poststretching can be in multiple stages and/or with previous annealing. The poststretching should be done at a draw rate of less than 1 second-1. Tensile modulus values over 2,000 g/d for multifilament yarn are consistently obtained for ultrahigh molecular weight-polyethylene, with tensile strength values above 30 g/d while at the same time dramatically improving creep (at 160 DEG F. (71.1 DEG C.) and 39,150 psi load) by values at least 25 percent lower than fiber which has not been poststretched. Shrinkage is improved to values less than 2.5 percent of the original length when heated from room temperature to 135 DEG C. Performance at higher temperature is improved by about 15 DEG to 25 DEG C.

Classifications:

International (IPC 8-9): C08F10/00 C08F10/02 C08F110/02 C08F8/00 C08J5/00 D01D5/04 D01F6/04 D01F6/46 D02J1/22 (Advanced/Invention); D01F6/46 (Core/Invention)

International (IPC 1-7): B32B3/00 C01F6/46 C08F10/02 C08F110/02 C08J5/00 D01D5/04 D01D5/12 D01F6/04 D01F6/46 D02G3/00 D02J1/22

CPC: Y10S428/902 D01F6/04 D07B2205/2014 D07B2401/2005 Y10T428/2913 Y10T428/2967 Y10T442/30 Y10T442/60

European: D01F6/04 N07B205/20C10 N07B401/20A

US: 264/103 264/205 264/210.7 264/210.8 264/235.6 264/237 264/288.4 264/290.2 264/290.5 264/348 428/364 428/394 428/902 442/181 442/327

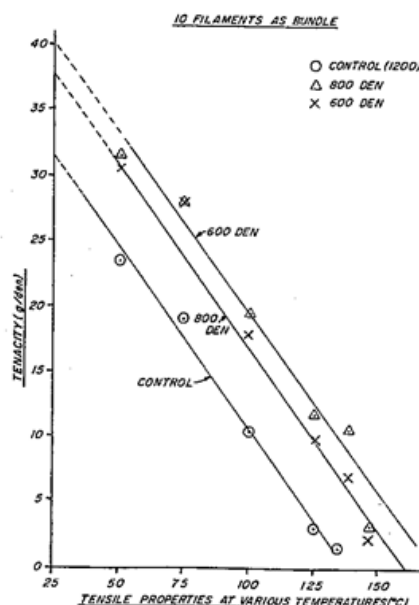
JP F-Term: 4F071 4F071/AA14 4F071/AA15 4F071/AA81 4F071/AA88 4F071/AF14/Y 4F071/AF15/Y 4F071/AF61/Y 4F071/AH19 4F071/BA01 4F071/BB06 4F071/BC07 4L035 4L035/BB02 4L035/BB05 4L035/BB81 4L035/BB89 4L035/CC20 4L035/EE01 4L035/EE08 4L035/EE20 4L035/FF01 4L035/HH02 4L035/HH10 4L035/MA01 4J019 4J019/AA02 4J019/AA03 4J019/AH01 4J019/AH10 4J100 4J100/AA02/P 4J100/CA01 4J100/DA01 4J100/DA09 4J100/DA36 4J100/DA47 4J100/DA51 4J100/GC00 4J100/JA11 4L035/BB06 4L035/BB11 4L035/BB22 4L035/BB66 4L035/BB82 4L035/BB83 4L035/BB88 4L035/BB91 4L035/EE09 4L035/HH03 4L045 4L045/AA03 4L045/AA13 4L045/BA03 4L045/BA49 4L045/BA51 4L045/CA25 4L045/CB09 4L045/CB13 4L045/DA17 4L045/DA19 4L045/DA33 4L045/DA36 4L045/DA42 4L045/DA46 4L045/DA60 4L045/DC02 4L045/DC06 4L045/DC07

JP F-Index: C08J5/00 D01F6/04/A D01F6/04/B C08F10/00

C08F10/02/A C08F8/00 D01D5/04

JP Facet: MJF

PatBase - US5578374_A



Family:

Publication number	Publication date	Application number	Application date
CA1276065 A1	19901113	CA19860510891	19860605
DE3675079 D1	19901129	DE19863675079	19860526
EP0205960 A2	19861230	EP19860107119	19860526
EP0205960 A3	19880107	EP19860107119	19860526
EP0205960 B1	19901024	EP19860107119	19860526
JP11081035 A2	19990326	JP19980162464	19980610
JP3673401 B2	20050720	JP19980162464	19980610
JP61289111 A2	19861219	JP19860141193	19860617
JP7033603 B4	19950412	JP19860141193	19860617
KR19870000457 A	19870218	KR19860004781	19860616
KR880001034 B1	19880615	KR19860004781	19860616
US5578374 A	19961126	US19950385238	19950208
US5741451 A	19980421	US19950516054	19950817
US5958582 A	19990928	US19980064664	19980420

Priority:

US19850745164 19850607	US19850745164 19850617	CA19860510891 19860605
US19890358471 19890530	US19910758913 19910911	US19930032774 19930315
US19950385238 19950208	US19950516054 19950817	US19980064664 19980420

Probable Assignee: ALLIEDSIGNAL INC

Assignee(s): (std): ALLIED CORP ; ALLIED SIGNAL INC

Assignee(s): ALLIED SIGNAL INC A DELAWARE CORP ; ALLIED SIGNAL INC A DELAWARE CORPORATION ; ALLIED SIGNAL INC N D GES D STAATES DELAWARE MOR ; ALLIEDSIGNAL INC ; ALLIED SIGNAL INC N D GES D STAATES DELAWARE MORRISTOWN N J US ; WINCKLHOFFER ROBERT CHARLES ; PREVORSEK DUSAN CIRIL ; WEEDON GENE CLYDE ; TAM THOMAS YIU TAI ; KAVESH SHELTON ; DUNBAR JAMES JAY ; ALLIED SIGNAL INC NDGEDS STAATES DELAWARE MORRISTOWN NJ

Inventor(s): (std): KAVESH SHELTON ; PREVORSEK DUSAN CIRIL ; ROBAATO CHAARUZU UINKURUHOOFUA ; TAM THOMAS YIU TAI ; WEEDON GENE CLYDE ; WINCKLHOFFER ROBERT CHARLES ; WNGKIHOOPER ROBERT CHALS ; WINCKLHOFFER ROBERT C ; WEEDON GENE C ; WEDN JINKLID ; TOMAS UTAE ; TAM THOMAS Y ; SIRIFREBOSEK DUSAN ; PREVORSEK DUSAN C ; KAVESH SHELTON NMN ; KABESHI SHELDU ; DUNBAR JAMES J ; ROBAATO CHIYAARUZU UINKURUHOOF ; DEYUSAN SHIRIRU PUREBUAASEKU ; DENBA JAMES J ; TOOMASU IUUTAI TAMU ; SHIERUDON KEIBETSUSHIYU ; DUNBAR JAMES JAY ; JIIN KURAIIDO UIIDON ; JIEEMUSU JIEI DANBAA

Inventor(s): JEEMUSU JIEI DANBAA ; ROBAATO CHIYAARUZU UINKURUHOOFUA ; DEYUSAN SHIRIRU PUREBUAASEKU ; WINCKLHOFFER ROBERT CHARLES MORRISTOWN NEW JERSEY 0 ; WINCKLHOFFER ROBERT CHARLES MORRISTOWN NEW JERSEY 07960 US ; ROBAATO CHAARUZU UINKURUHOOFUA ; SHERUDON KEIBETSUSHU

Agent(s): GOWLING LAFLEUR HENDERSON LLP

Designated states: DE FR GB IT NL

Title: SHAPED POLYETHYLENE ARTICLES OF INTERMEDIATE MOLECULAR WEIGHT AND HIGH MODULUS

Abstract: Solutions of intermediate molecular weight polymers from about 200,000 to about 4,000,000, such as polyethylene, in a relatively non-volatile solvent are extruded through an aperture at constant concentration and thereafter stretched at a ratio of at least about 3:1 prior to cooling to form a first gel. The first gels are extracted with a volatile solvent to form a second gel, and the second gel is dried to form a low porosity xerogel. Stretching occurs with any one or more of the first gel, second gel or xerogel. The polyethylene products produced by our process include products having a molecular weight between about 200,000 and about 4,000,000 a tenacity of at least about 13 grams/denier, a modulus of at least about 350 gram/denier, a porosity of less than 10 percent by volume, a crystalline orientation function of at least about 0.95, and a main melting temperature of at least about 140 degrees C.

Classifications:

International (IPC 8-9): B29C47/00 B29C55/00 C08F10/00 C08F10/02 C08F8/00 C08J5/18 D01D5/00 D01F6/04 D07B1/02 (Advanced/Invention); B29C55/00 B29K23/00 C08F10/00 C08F8/00 (Advanced/Non-invention)

International (IPC 1-7): B29C47/00 B29C55/00 B29K23/00 B29K23/00 C08F10/02 C08F210/02 C08J5/18 C08L23/06 D01D5/00 D01D5/08 D01D5/12 D01F6/04 D02G3/00

CPC: Y10T428/2913 Y10T428/2967 D01F6/04 B29K2023/06 B29K2105/0061 B29K2223/06 B29K2995/0088 C08J5/18 C08J2323/06 D01D5/00 D07B1/02 D07B1/025 D07B2205/2014 D10B2321/0211 Y10T428/31855 B29C48/022 B29C48/05 B29C48/08

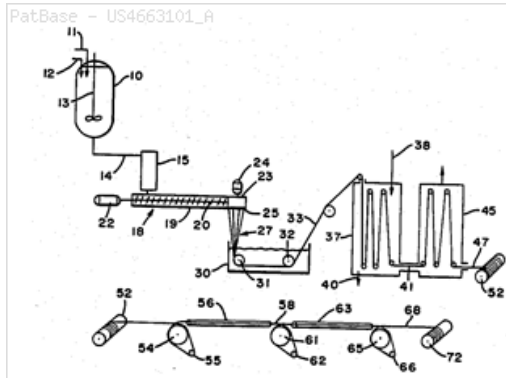
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US: 264/178.00F 264/178F 264/203 264/204 264/210.7 264/210.8 264/46.1 428/364 428/394 428/500 526/348.1

JP F-Term: 4F210 4F210/AA04/A 4F210/AA04/C 4F210/AA04/E 4F210/AG01 4F210/AG14 4F210/AG16 4F210/AG20 4F210/AH17 4F210/AH28 4F210/AH45 4F210/AH46 4F210/AH47 4F210/AH55 4F210/AH59 4F210/QA03 4F210/QC01 4F210/QD01 4F210/QD04 4F210/QD13 4F210/QD16 4F210/QD18 4F210/QG08 4F210/QG18 4F210/QG20 4J019 4J019/AA02 4J019/AH01 4J019/AH10 4J100 4J100/AA02/P 4J100/CA01 4J100/DA01 4J100/DA24 4J100/DA41 4J100/DA47 4J100/DA51 4J100/GC00 4J100/GC22 4J100/GC25 4J100/GC29 4J100/GD01 4J100/JA11 4L035 4L035/AA04 4L035/BB05 4L035/BB06 4L035/BB11 4L035/BB15 4L035/BB22 4L035/BB66 4L035/BB69 4L035/BB79 4L035/BB81 4L035/BB89 4L035/BB91 4L035/EE08 4L035/EE09 4L035/EE20 4L035/HH02 4L035/HH03 4L035/HH04 4L035/JJ11 4L035/MA01 4L045 4L045/AA03 4L045/AA13 4L045/BA01 4L045/BA49 4L045/BA50 4L045/BA60 4L045/CA05 4L045/CA20 4L045/CA25 4L045/CA29 4L045/CB09 4L045/CB13 4L045/DA03 4L045/DA08 4L045/DA20 4L045/DA33 4L045/DA36 4L045/DA41 4L045/DC02

JP F-Index: B29C55/00 C08F10/00 C08F10/02 C08F8/00 D01D5/00 D01F6/04/A

JP Facet: MJF

**Family:**

Publication number	Publication date	Application number	Application date
AU198550701 A1	19860717	AU19850050701	19851203
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DE3587017 D1	19930304	DE19853587017	19851217
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DE3588211 D1	19990520	DE19853588211	19851217
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EP0187974 A2	19860723	EP19850116065	19851217
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ES8701796 A1	19861216	ES19860551405	19860110
JP2113241 C3	19961121	JP19860004100	19860111
JP61167010 A2	19860728	JP19860004100	19860111
JP8019563 B4	19960228	JP19860004100	19860111
US4663101 A	19870505	US19850690914	19850111
US5736244 A	19980407	US19950520328	19950828
US5972498 A	19991026	US19980046317	19980323

Priority:

US19850690914 19850111	EP19850116065 19851217	EP19850116065 19851217
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US19900629183 19901221	US19930107421 19930816	US19950520328 19950828
US19980046317 19980323		

Probable Assignee: ALLIED SIGNAL INC A DELAWARE CORPORATION

Assignee(s): (std): ALLIED CORP ; ALLIED SIGNAL INC

Assignee(s): ALLIED SIGNAL INC A DELAWARE CORP ; ALLIED SIGNAL INC A DELAWARE CORPORATION ; ALLIED SIGNAL INC N D GES D STAATES DELAWARE MOR ; ALLIEDSIGNAL INC ; ALLIEDSIGNAL INC MORRISTOWN N J US ; ALLIEDSIGNAL INC MORRISTOWN ; ALLIED SIGNAL INC N D GES D STAATES DELAWARE MORRISTOWN N J US ; KAVESH SHELDON ; PREVORSEK DUSAN CIRIL ; ALLIED SIGNAL INC NDGESDSTAATES DELAWARE MORRISTOWN NJ

Inventor(s): (std): SHIERUDON KEIBETSUSHIYU ; PREVORSEK DUSAN C ; DEYUSAN SHIRIRU PUREBAAASEKU ; PREVORSEK DUSAN CIRIL ; KAVESH SHELDON

Inventor(s): KAVESH SHELDON MORRISTOWN NEW JERSEY 07960 US ; DUSAN CIRIL PREVORSEK ; SHELDON KAVESH ; PREVORSEK DUSAN CIRIL MORRISTOWN NJ 07960 US ; PREVORSEK DUSAN CIRIL MORRISTOWN NEW JERSEY 07960 US ; PREVORSEK DUSAN CIRIL MORRISTOWN NEW JERSEY 07960 US

Agent(s): DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; GOWLING LAFLEUR HENDERSON LLP

Designated states: BE CH DE FR GB IT LI NL SE

Title: HIGH STRENGTH SUTURE MATERIAL

Abstract: A high strength abrasion resistant surgical suture material with improved tie down characteristics. The suture features a multifilament cover formed of braided strands of ultra high molecular weight long chain polyethylene and polyester. The cover surrounds a core formed of twisted strands of ultrahigh molecular weight polyethylene. The suture, provided in a #2 size, has the strength of #5 Ethibond, is ideally suited for most orthopedic procedures, and can be attached to a suture anchor or a curved needle.

Classifications:

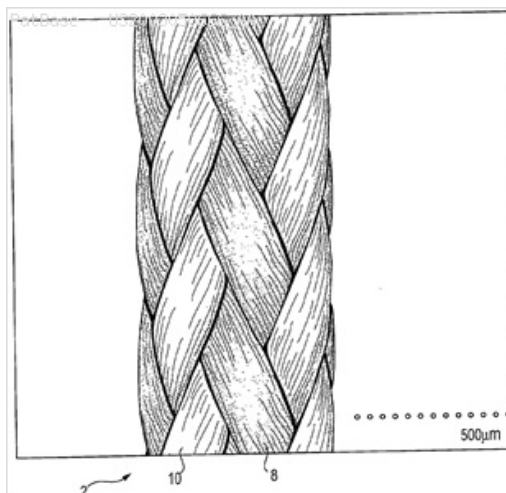
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International (IPC 1-7): A61B17/04 A61B17/06 A61L17/0 A61L17/00 A61L17/04 A61L17/04 A61L17/14 D01F6/04 D01F6/04

CPC: A61B17/0401 A61B2017/00004 A61B2017/0619 A61L17/08 A61L17/145 D04C1/12 D10B2509/04 A61B17/0485 A61B2017/044 A61B90/92 D04C1/06 A61B17/06166 A61B2017/0409 A61B2017/0414 A61B2017/0416 A61B2017/06028 A61L17/12 C08L67/00 C08L2203/12 C08L2207/068 D07B1/025 D07B2201/1096 D07B2205/2014 D10B2403/0311 A61L17/04 A61L17/14 C08L23/06 C08L91/06 C08L2205/16

European: A61B17/06S A61L17/04 A61L17/08 A61L17/12 A61L17/14 A61L17/14C D04C1/06 D07B1/02C K61B17/00A K61B17/04A K61B17/04A5 K61B17/04A8 K61B17/04A9 K61B17/06A9 K61B17/06S9 K61B19/44D M08L203/12 M08L205/16 M08L207/068 M08L23/06 M08L67/00 M08L91/06 N07B201/10H N07B205/20C10

US: 600/37 606/228 606/228P 606/230 606/231 606/232 606/232S



Family:

Publication number	Publication date	Application number	Application date
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AT409498 E	20081015	AT20040025078T	20041021
AT446775 E	20091115	AT20040254785T	20040809
DE602004016807 D1	20081113	DE200460016807T	20041021
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EP1293218 A1	20030319	EP20020255691	20020815
EP1293218 B1	20051221	EP20020255691	20020815
EP1504773 A1	20050209	EP20040254785	20040809
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EP1530976 A1	20050518	EP20040025078	20041021
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US2003050666 AA	20030313	US20010950598	20010913
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US2005033362 AA	20050210	US20040912221	20040806
US2005055051 AA	20050310	US20040970381	20041022
US2005192631 AA	20050901	US20040970380	20041022
US2006155329 AA	20060713	US20060369961	20060308
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Priority:

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Probable Assignee: ARTHREX INC

Assignee(s): (std): ARTHREX INC ; GRAFTON R D ; SCHMIEDING REINHOLD

Assignee(s): GRAFTON R DONALD ; INC ; ARTHREX INC NAPLES ; ARTHREX

Inventor(s): (std): BURKHART STEPHEN S ; GRAFTON R D ; HALLETT BRIAN ; SCHMIEDING REINHOLD ; LYON D LAWSON ; HALLET BRIAN ; GRAFTON R DONALD ; GRAFTON DONALD R

Inventor(s): LYON DLAWSON ; GRAFTON R

Agent(s): COLLINS JOHN DAVID ; KOPECKY HELMUT ET AL ; DICKSTEIN SHAPIRO MORIN AND OSHINSKY LLP ; DICKSTEIN SHAPIRO LLP

Designated states: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

Title: POLYETHYLENE MULTIFILAMENT YARN

Abstract: Novel polyethylene multifilament yarn having high strength and high modulus and being substantially free from cohesion between single yarns is provided by a novel process which comprises employing a dry-wet spinning or gel-wet spinning method, drying single yarns containing an extractant separately from each other by vibrating them using a turbulent

air flow, and heat-treating them under tension at temperatures in a specific range before drawing.

Classifications:

International (IPC 8-9): D01D10/06 D01D5/00 D01F6/04 (Advanced/Invention);

D01D10/00 D01D5/00 D01F6/04 (Core/Invention)

International (IPC 1-7): D01D10/06 D01D5/00 D01F6/04

CPC: D01D5/06 D01F6/04 D07B1/025 D07B2201/2009 D07B2205/2014

European: D01D5/06 D01F6/04

Family:

Publication number	Publication date	Application number	Application date
DE3682241 D1	19911205	DE19863682241	19860206
EP0213208 A1	19870311	EP19860901136	19860206
EP0213208 A4	19880928	EP19860901136	19860206
EP0213208 B1	19911030	EP19860901136	19860206
WO8604936 A1	19860828	WO1986JP00049	19860206

Priority:

JP19850026193 19850215 WO1986JP00049 19860206

Probable Assignee: TORAY IND

Assignee(s): (std): TORAY IND ; TORAY INDUSTRIES

Assignee(s): TORAY INDUSTRIES INC ; TORAY IND INC

Inventor(s): (std): FUJIOKA KOHTAROH ; MIYOSHI TAKEHIKO ; MIZUNO MASA HARU ; NISHIKAWA HIROSHI

Designated states: DE FR GB IT JP NL US

14) Family number: 30236765 (US4344908A)

© PatBase

Title: PROCESS FOR MAKING POLYMER FILAMENTS WHICH HAVE A HIGH TENSILE STRENGTH AND A HIGH MODULUS

Abstract: A process for making polymer filaments which have a high tensile strength and a high modulus by stretching a polymer filament which contains an appreciable amount of polymer solvent at a temperature between the swelling point and the melting point of the polymer.

Classifications:

International (IPC 8-9): B29C47/00 B29C70/10 D01D5/16 D01F6/00

D01F6/04 D01F6/06 D01F6/14 D01F6/62 D02J1/22 F02K1/28

F15C1/00 (Advanced/Invention);

D01F6/00 D02J1/22 (Advanced/Non-invention);

B29C47/00 B29C70/10 D01D5/12 D01F6/00 D01F6/02 D01F6/04

D02J1/22 F02K1/00 F15C1/00 (Core/Invention)

International (IPC 1-7): D01D5/00 D01D5/04 D01D5/06 D01D5/08

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CPC: F02K1/28 F15C1/00 Y10T428/2913 B29C70/10 B29K2105/08

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D01D5/12 D01D10/02 B29C48/022 B29C48/05 B29K2105/0073

D01D5/16 D01F6/04

European: B29C47/00B B29C70/10 D01D5/16 D01F6/04 F02K1/28 F15C1/00 L29K105/00G9 L29K105/08 L29K223/06

L29K995/00F29 N07B1/02C N07B205/20C10

US: 264/203 264/204 264/205 264/210.8 264/290.5 428/364 524/585 526/348.1 528/502B

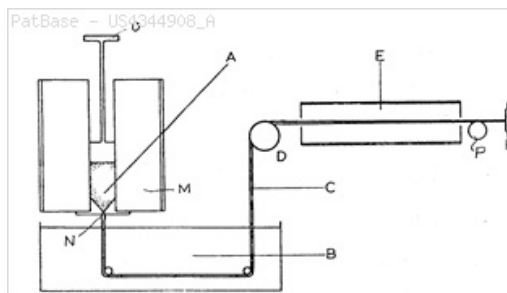
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JP F-Index: D01F6/04/A D01F6/14/Z D02J1/22/Z D01F6/00/Z D02J1/22/J D02J1/22/K



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AT336080 A	19860715	AT19800003360	19800626
AT380033 B	19860325	AT19800000652	19800206
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AT65280 A	19850815	AT19800000652	19800206
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AU527155 B2	19830217	AU19800059654	19800626
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BE884017 A	19801229	BE19800201182	19800626
BR8000775 A	19801021	BR19800000775	19800207
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CA1152272 A1	19830823	CA19800345309	19800208
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CH650535 C2	19980227	CH19800000874	19800204
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CS235001 B2	19850416	CS19800000810	19800206
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DE3023726 C2	19821125	DE19803023726	19800625
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FR2448587 A1	19800905	FR19800002571	19800206
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Priority:

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JP19800014245	19800207	CA19800345309	19800208	DE19803004699	19800208
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US19820428821	19820930				

Probable Assignee: STAMICARBON

Assignee(s): (std): STAMICARBON ; STAMICARBON B V TE GELEEN ; STAMICARBON BV ; STAMICARBON B V ; STAMICARBON B V NL ; STAMIKARBON BV FA

Assignee(s): STAMICARBON PO BOX 10 GELEEN NETHERLANDS BV ; STAMIKARBON B V FIRMA ; STAMIKARBON BV FIRMA ; STAMICARBON B V 6160 GELEEN NL ; STAMICARBON B V GELEEN NL ; STAMICARBON TE GELEEN BV ; STAMIKARBON BV ; STAMICARBON 6160 GELEEN NL BV ; STAMICARBON GELEEN BV ; STAMICARBON GELEEN NL BV ; STAMICARBON NL BV ; DSM NV ; LEMSTRA PIETER J ; PENNING'S ALBERTUS J ; SMITH PAUL

Inventor(s): (std): A J PENNING'S ; ALBERTUS JOHANNES PENNING'S ; ALBERTUS JOHANNES PENNING'S TE NORG ; ALBERTUS JOKHANES PENNING'S NL ; ARUBAATASU YOHANESU PENINGUSU ; DELAWARE ; HOORU SUMISU ; LEMSTRA P ; LEMSTRA P J ; LEMSTRA PIETER J ; LEMSTRA PIETER JAN ; LEMSTRA PIETER JAN NL ; LEMSTRA PITER YAN ; P J LEMSTRA ; P SMITH ; PAUL SMIT NL ; PAUL SMITH ; PAUL SMITH TE WILMINGTON ; PENNING'S A ; PENNING'S A J ; PENNING'S ALBERTUS J ; PENNING'S ALBERTUS JOHANNES ; PENNING'S ALBERTUS JOHANNES NL ; PENNING'S ALBERTUS JOKHANES ; PIETER JAN LEMSTRA ; PIETER JAN LEMSTRA TE BRUNSSUM ; PIITA YAAN REMUSUTORA ; PIITA YAAN REMUSUTORA ; PIITA YAAN REMUSUTORA ; PITER YAN LEMSTRA NL ; PJ LEMSTRA ; POORU SUMISU ; SMIT PAUL ; SMITH P ; SMITH PAUL ; SMITH PAUL NL ; ST V AM VER ; JOHANNES PENNING'S ALBERTUS ; JAN LEMSTRA PIETER

Inventor(s): VER ST V AM ; LEMSTRAPIETER J ; PENNING'S ALBERTUS JOHANNES ; SMITH PAUL SITTARD ; SMITH PAUL SITTARD NL ; PENNING'S ALBERTUS JOHANNES NORG ; PENNING'S ALBERTUS JOHANNES NORG NL ; PAUL SMITH ET PIETER JAN LEMSTRA ; LEMSTRA PIETER JAN BRUNSSUM ; LEMSTRA PIETER JAN BRUNSSUM NL ; JOHANNES PENNING'S ALBERTUS

Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; FETHERSTONHAUGH AND CO

Title: HIGH STRENGTH MULTI-COMPONENT SURGICAL CORD

Abstract: In the present invention, a gel-spun UHMWPE is subjected to secondary processing to reduce the concentration of the spin solvent(s) to acceptable levels before or after the fiber is woven with other fibers to form a suture. In the case of the spin solvent Decalin, it is well known that concentrations, in the fiber, of greater than 100 parts per million (ppm) render UHMWPE materials non-compatible with human tissues. Thus, UHMWPE materials that are to remain within the human body must have a Decalin concentration below 100 ppm to render them biocompatible. If desired, the suture may be braided about a core. The number of filaments in a single suture can vary between 4 and 24. Additionally, where a core structure is employed, up to 6 separate core filaments may be employed. Other materials such as PTFE, FEP, PFA, PVDF, PP, polyester, nylon, or aramid may be employed for the core and/or cover so long as spin solvent level has been reduced to below 100 ppm before or after twisting or braiding.

Classifications:

International (IPC 8-9): A61B17/06 A61L17/10 A61L17/14

D01F6/04 (Advanced/Invention);

A61B17/00 (Advanced/Non-invention);

A61B17/06 A61L17/00 D01F6/04 (Core/Invention);

A61B17/00 (Core/Non-invention)

International (IPC 1-7): A61B17/04 A61L17/00

CPC: A61B17/06166 A61B2017/00526 A61L17/10 A61L17/145

D01F6/04 D07B1/025 D07B2201/1096 D07B2205/2014

European: A61B17/06S A61L17/10 A61L17/14 A61L17/14C

D01F6/04 D07B1/02C K61B17/00M N07B201/10H N07B205/20C10

US: 606/228 606/228P

PatBase - US2004267313_AA

Patent Application Publication Dec. 30, 2004

US 2004/0267313 A1

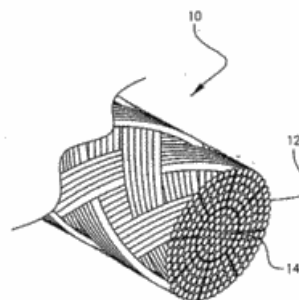


FIG. 1

Family:

Publication number	Publication date	Application number	Application date
US2004267313 AA	20041230	US20040874301	20040624

Priority:

US20030483084P 20030627

US20040874301 20040624

Probable Assignee:

LINVATEC CORP

Assignee(s): (std):

LINVATEC CORP

Inventor(s): (std):

AMERY DREW ; POWELL AMBER

Title: OPTIMIZED SUTURE BRAID

Abstract: A high strength abrasion resistant surgical suture material with industry standard knot tying characteristics and color marking characteristics includes a core formed of a plurality of twisted fibers of a first material, surrounded by a braided cover made from fibers of a second material different than the first material. The first material is preferably ultrahigh molecular weight polyethylene and the second material is preferably a polymeric material having good knot-tying characteristics.

Classifications:

International (IPC 8-9): A61B17/04 A61B17/06 A61L17/00

A61L17/10 A61L17/14 (Advanced/Invention);

A61L (Subclass/Invention)

International (IPC 1-7): A61B17/04 A61L

CPC: A61B17/06166 A61B2017/0619 A61L17/10 A61L17/145

C08L23/06 C08L67/00 C08L2203/12 D04C1/12 D07B1/025

D07B1/162 D07B2201/2012 D07B2201/2044 D07B2201/2088

D07B2201/209 D07B2205/2014

European: A61B17/06S A61L17/10 A61L17/14C D04C1/12

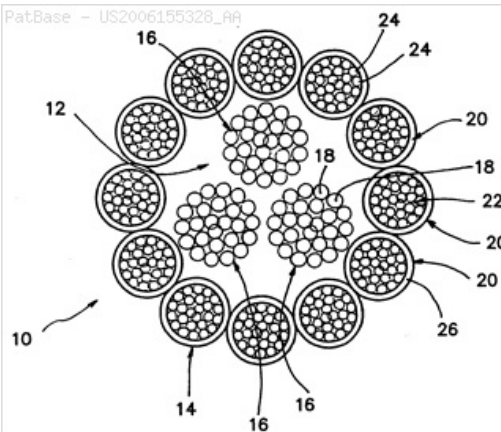
D07B1/02C D07B1/16B K61B17/06S9 M08L203/12 M08L23/06

M08L67/00 N07B201/20A40B N07B201/20B44B N07B201/20F20A

N07B201/20F35 N07B205/20C10

US: 606/228 606/228P

PatBase - US2006155328_AA



Family:

Publication number	Publication date	Application number	Application date
US2006155328 AA	20060713	US20040803455	20040318
WO04082724 A2	20040930	WO2004US08074	20040318
WO04082724 A3	20050203	WO2004US08074	20040318

Priority:

US20030455843P 20030318 US20040803455 20040318

Probable Assignee: ARTHROCARE CORP

Assignee(s): (std): FOERSTER SETH A ; OPUS MEDICAL INC

Assignee(s): ARTHROCARE CORP ; BANK OF AMERICA NA

Inventor(s): (std): FOERSTER SETH A

Inventor(s): FOERSTER SETH

Agent(s): DONALD E STOUT STOUT UXA BUYAN AND MULLINS LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

17) Family number: 12457989 (US5376445A)

© PatBase

Title: MICROPOROUS FILM OF POLYETHYLENE AND PROCESS FOR THE PRODUCTION THEREOF

Abstract: Microporous film of polyethylene with a high degree of moisture vapor transmission rate and permeability to air and a process for the production of such a film from a polyolefine by extruding a solution of the polyolefine in a first solvent, followed by cooling, the removal of the solvent and stretching of the film, in which both sides of the film are brought into close contact with a second solvent for the polyolefine before the film is contacted with the cooling agent.

Classifications:

International (IPC 8-9): B01D67/00 B01D71/26 B29C55/00

B29C55/02 C08J5/18 C08J9/28 (Advanced/Invention);

B29K105/04 B29K23/00 B29L7/00 (Advanced/Non-invention);

B01D67/00 B01D71/00 B29C55/00 B29C55/02 C08J5/18 C08J9/00 (Core/Invention)

International (IPC 1-7): B01D69/02 B01D71/26 B29C35/16 B29C55/00 B29C55/02 B29C69/00 B29K105/04 B29K23/00 B29L7/00 B32B27/32 C08J5/18 C08J9/28 C08L23/06 D01D5/12

CPC: Y10T428/269 C08J5/18 B01D67/0009 B01D67/0027 B01D71/26 B01D2323/12 B01D2325/04 B01D2325/20

B01D2325/34 B29C55/005 B29K2023/0683 B29K2105/04 C08J2323/04 Y10T428/31931

European: B01D67/00K14 B01D67/00K18B10 B01D71/26 B29C55/00B C08J5/18 L01D323/12 L01D325/04 L01D325/20 L01D325/34 L29K105/04 L29K23/06D5 M08J323/04

US: 264/210.3 264/211.13 264/216 264/288.4 264/290.2 428/339 428/521 526/348.1 526/352

JP F-Term: 4F071 4F071/AA14 4F071/AA15 4F071/AA15/X 4F071/AA20 4F071/AA20/X 4F071/AA21/X 4F071/AA81 4F071/AB17/A 4F071/AC02/A 4F071/AE19/A 4F071/AE22/A 4F071/AF02 4F071/AF08/Y 4F071/AF14 4F071/AF15 4F071/AF20 4F071/AF21 4F071/AF22 4F071/AG12 4F071/AG29 4F071/AH02 4F071/AH19 4F071/BA02 4F071/BB02 4F071/BB06 4F071/BB07 4F071/BB08 4F071/BC01 4F071/BC10 4F071/BC12 4F074 4F074/AA16 4F074/AA17 4F074/AA18 4F074/AB01 4F074/AB05 4F074/AE02 4F074/AH03 4F074/CA01 4F074/CA03 4F074/CA06 4F074/CB34 4F074/CC05/W 4F074/CC32/W 4F074/CC46 4F074/CC63 4F074/CE25 4F074/DA03 4F074/DA10 4F074/DA43 4F074/EA23 4F210 4F210/AA04/A 4F210/AA04/E 4F210/AA05/A 4F210/AA06/A 4F210/AG01 4F210/AG20 4F210/AH03 4F210/QA02 4F210/QC07 4F210/QD05 4F210/QD06 4F210/QD07 4F210/QG01 4F210/QG13 4F210/QG18 4J002

JP F-Index: B29C55/02 B29L7/00 C08J5/18 C08J9/28

JP Facet: CES

Family:

Publication number	Publication date	Application number	Application date
AT116596 E	19950115	AT19920200406T	19920213
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DE69201075 T2	19950824	DE19926001075T	19920213
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US5503791 A	19960402	US19940299062	19940831

Priority:

NL19910000279 19910218 US19920836371 19920218 US19930089612 19930712

US19940299062 19940831

Probable Assignee: ROYAL DSM NV

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Assignee(s): DSM N V HEERLEN NL ; STAMICARBON TE GELEEN BV ; DSM N V ; STAMICARBON B V TE GELEEN ; DSM NEAMLOZE VENNOOTSAP ; D S M NV ; DSM HET OVERLOON NV ; DSM IP ASSETS B V ; DSM IP ASSETS B V HEERLEN

Inventor(s): (std): SIMMELINK JOSEPH ARNOLD PAUL M ; SIMMELINK JOSEPH A P M ; HENRIKUSU MATEUSU FUORUTOUIN ; FORTUIN HENRICUS MATHEUS ; FORTUIN HENRICUS M ; YOOZEFU AANORUDO POORU MARIA S

Inventor(s): SIMMELINK JOSEPH ARNOLD PAUL MARIA ; FORTUIN HENRICUS MATHEUS NL 6211 CZ MAASTRICHT NL ; SIMMELINK JOSEPH ARNOLD PAUL MARIA NL 6245 EE... ; YOOZEFU AANORUDO POORU MARIA SHINMERINKU ; SIMMELINK JOSEPH ARNOLD PAUL MARIA NL 6245 EE EIJSDEN NL ; SIMMELINK JOSEPH ARNOLD PAUL MARIA NL 6245 EE EIJS

Designated states: AT BE CH DE DK ES FR GB IT LI NL SE

PatBase JP3262359_E

$$\text{多孔隙度} = \frac{\rho_0 - \rho}{\rho_0} \times 100\%$$