

Search query (2): [SP]: field of invention[0001] the instant invention relates to microcapillary films, and articles made thereof.background of the invention[0002] the use of polymeric materials in various film and packaging applications is generally known however, such various film and packaging applications require further improvements.[0003] despite the research efforts in providing improved use of polymeric materials in the film and packaging applications, there is a still a need for microcapillary films providing light-weighting of a film while maintaining optical and/or mechanical properties.summary of the invention[0004] the instant invention provides microcapillary films. the inventive microcapillary film according to the present invention comprises a first end and a second end, wherein the microcapillary film comprises: (a) a matrix comprising a thermoplastic material, (b) at least one or more channels disposed in parallel in said matrix from the first end to the second end of the film, wherein the one or more channels are at least 1 micro m apart from each other, and wherein each said one or more channels have a diameter in the range of at least 1 micro m and wherein the microcapillary film comprises from 10 to 90 percent by volume of voidage, based on the total volume of the microcapillary film, and wherein said one or more channels have an aspect ratio in the range of from 1:1 to 100:1, measured as the ratio of the longest to shortest dimensions of a channel's cross-section perpendicular to the machine direction of the film and wherein said film has a thickness in the range of from 5 micro m to 500 micro m, measured according to astm d374m-13.[0005] in an alternative embodiment, the instant invention provides microcapillary films, in accordance with any of the preceding embodiments, except that the microcapillary film has a thickness in the range of from 5 micro m to 500 micro m, and wherein said microcapillary comprises a thermoplastic composition having a melt strength in the range of from 3 to 50 cn.[0006] in an alternative embodiment, the instant invention provides microcapillary films, in accordance with any of the preceding embodiments, except that the microcapillary film has bending stiffness in the range of from 10 to 400 percent relative to a film of the same composition and same thickness absent any microcapillary channels, measured according to astm d6125-97 and/or tappi t543 om-11.[0007] in an alternative embodiment, the instant invention provides microcapillary films, in accordance with any of the preceding embodiments, except that the microcapillary film has cd tear strength in the range of from 75 to 125 percent relative to a film of the same composition and same thickness absent any microcapillary channels, measured according to astm d1922.[0008] in an alternative embodiment, the instant invention provides microcapillary films, in accordance with any of the preceding embodiments, except that the microcapillary film has cd tear strength (measured according to astm d1922)/md tear strength (measured according to astm d1922) ratio in the range of from 1 to 40.[0009] in an alternative embodiment, the instant invention provides microcapillary films, in accordance with any of the preceding embodiments except that the microcapillary film has impact strength in the range from 30 to 400 percent relative to a film of the same composition and same thickness absent any microcapillary channels, measured according to astm d3420.[0010] in an alternative embodiment, the instant invention provides microcapillary films, in accordance with any of the preceding embodiments, except that the thermoplastic material is selected from the group consisting of polyolefin polyamide polyvinylidene chloride polyvinylidene fluoride polyurethane polycarbonate polystyrene polyethylene vinylalcohol (pvoh), polyvinyl chloride, polylactic acid (pla) and polyethylene terephthalate.[0011] in an alternative embodiment, the instant invention provides microcapillary films, in accordance with any of the preceding embodiments, except that the polyolefin is polyethylene, polypropylene, propylene/ethylene copolymer, or copolymer of ethylene or propylene with one or more alpha-olefins.[0012] in an alternative embodiment, the instant invention provides microcapillary films, in accordance with any of the preceding embodiments, except that the polyamide is nylon 6.[0013] in an alternative embodiment, the instant invention provides microcapillary films, in accordance with any of the preceding embodiments, except that the one or more channels have a cross-sectional shape selected from the group consisting of circular, rectangular, oval, star, diamond, triangular, square, curvilinear, and combinations thereof.[0014] in an alternative embodiment, the instant invention provides a multilayer structure comprising any one of the microcapillary films, in accordance with any of the preceding embodiments.[0015] in an alternative embodiment, the instant invention provides an article any one of the microcapillary films, in accordance with any of the preceding embodiments.brief description of the drawings[0016] for the purpose of illustrating the invention, there is shown in the drawings a form that is exemplary it being understood, however, that this invention is not limited to the precise arrangements and instrumentalities shown.[0017] fig. 1 is a top view of an inventive microcapillary film[0018] fig. 2 is a longitudinal-sectional view of an inventive microcapillary film[0019] fig. 3 is a cross-sectional view of an inventive microcapillary film[0020] fig. 4 is an elevated view of an inventive microcapillary film[0021] fig. 5 is a segment of a longitudinal sectional view of the inventive microcapillary film, as shown in fig. 2[0022] fig. 6 is an exploded view of an inventive microcapillary film and[0023] figs. 7a-b are schematic illustration of a microcapillary die.detailed description of the invention[0024] referring to the drawings wherein like numerals indicate like elements, there is shown, in figs. 1-7, a first embodiment of a microcapillary film (10) containing void volumes (12).[0025] the inventive microcapillary film (10) containing void volumes (12) according to the present invention has a first end (14) and a second end (16), and comprises: (a) a matrix (18) comprising a thermoplastic material (b) at least one or more channels (20) disposed in parallel in said matrix (18) from the first end (14) to the second end (16) of said microcapillary film (10), wherein said one or more channels (20) are at least 1 micro m apart from each other, and wherein each said one or more channels (20) have a diameter in the range of at least 1 micro m and wherein said microcapillary film (10) comprise from 10 to 90 percent by volume of voidage (12), based on the total volume of the microcapillary film (10), and wherein said one or more channels (20) has/have an aspect ratio in the range of from 1:1 to 100:1 and wherein microcapillary film (10) has a thickness in the range of from 5 micro m to 500 micro m.[0026] the term "parallel" as used herein means extending in the same direction and never intersecting. the term diameter as used herein means longest axis of the channel (20) cross sectional.[0027] the microcapillary film (10) containing void volumes (12) may have a thickness in the range of from 5 micro m to 500 micro m for example, microcapillary film (10) containing void volumes (12) may have a thickness in the range of from 10 micro m to 500 micro m or in the alternative, from 10 to 400 micro m or in the alternative, from 10 to 300 micro m or in the alternative, from 10 to 200 micro m.[0028] the one or more channels (20) can have an aspect ratio in the range of from 1:1 to 100:1 for example, in the range of from 10:1 to 100:1 or in the alternative, in the range of from 1:1 to 50:1 or in the alternative, in the range of from 10:1 to 50:1, measured as the ratio of longest to shortest dimensions of a channel's cross-section perpendicular to the machine direction (md) of the film.[0029] the one or more channels (20) can be at least partially filled with a gas, for example, air or an inert gas.[0030] the microcapillary film (10) may comprise at least 10 percent by volume of the matrix (18), based on the total volume of the microcapillary film (10) for example, the microcapillary film (10) may comprise from 90 to 10 percent by volume of the matrix (18), based on the total volume of the microcapillary film (10) or in the alternative, from 80 to 20 percent by volume of the matrix (18), based on the total volume of the microcapillary film (10) or in the alternative, from 80 to 30 percent by volume of the matrix (18), based on the total volume of the microcapillary film (10) or in the alternative, from 80 to 50 percent by volume of the matrix (18), based on the total volume of the microcapillary film (10).[0031] the microcapillary film (10) may comprise from 10 to 90 percent by volume of voidage, based on the total volume of the microcapillary film (10) for example, the microcapillary film (10) may comprise from 20 to 80 percent by volume of voidage, based on the total volume of the microcapillary film (10) or in the alternative, from 20 to 70 percent by volume of voidage, based on the total volume of the microcapillary

Results: 6

Search history

1:

Search 2: [SP]: field of invention[0001] the instant invention relates to microcapillary films, and articles made therefrom.background of the invention[0002] the use of polymeric materials in various film and packaging applications is generally known however, such various film and packaging applications require further improvements.[0003] despite the research efforts in providing improved use of polymeric materials in the film and packaging applications, there is a still a need for microcapillary films providing light-weighting of a film while maintaining optical and/or mechanical properties.summary of the invention[0004] the instant invention provides microcapillary films. the inventive microcapillary film according to the present invention comprises a first end and a second end, wherein the microcapillary film comprises: (a) a matrix comprising a thermoplastic material, (b) at least one or more channels disposed in parallel in said matrix from the first end to the second end of the film, wherein the one or more channels are at least 1 micro m apart from each other, and wherein each said one or more channels have a diameter in the range of at least 1 micro m and wherein the microcapillary film comprises from 10 to 90 percent by volume of voidage, based on the total volume of the microcapillary film, and wherein said one or more channels have an aspect ratio in the range of from 1:1 to 100:1, measured as the ratio of the longest to shortest dimensions of a channel's cross-section perpendicular to the machine direction of the film and wherein said film has a thickness in the range of from 5 micro m to 500 micro m, measured according to astm d374m-13.[0005] in an alternative embodiment, the instant invention provides microcapillary films, in accordance with any of the preceding embodiments, except that the microcapillary film has a thickness in the range of from 5 micro m to 500 micro m, and wherein said microcapillary comprises a thermoplastic composition having a melt strength in the range of from 3 to 50 cn.[0006] in an alternative embodiment, the instant invention provides microcapillary films, in accordance with any of the preceding embodiments, except that the microcapillary film has bending stiffness in the range of from 10 to 400 percent relative to a film of the same composition and same thickness absent any microcapillary channels, measured according to astm d6125-97 and/or tappi t543 om-11.[0007] in an alternative embodiment, the instant invention provides microcapillary films, in accordance with any of the preceding embodiments, except that the microcapillary film has cd tear strength in the range of from 75 to 125 percent relative to a film of the same composition and same thickness absent any microcapillary channels, measured according to astm d1922.[0008] in an alternative embodiment, the instant invention provides microcapillary films, in accordance with any of the preceding embodiments, except that the microcapillary film has cd tear strength (measured according to astm d1922)/md tear strength (measured according to astm d1922) ratio in the range of from 1 to 40.[0009] in an alternative embodiment, the instant invention provides microcapillary films, in accordance with any of the preceding embodiments except that the microcapillary film has impact strength in the range from 30 to 400 percent relative to a film of the same composition and same thickness absent any microcapillary channels, measured according to astm d3420.[0010] in an alternative embodiment, the instant invention provides microcapillary films, in accordance with any of the preceding embodiments, except that the

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Title: MICROCAPILLARY FILMS AND FOAMS CONTAINING FUNCTIONAL FILLER MATERIALS

Abstract: Source: US2013288016A The instant invention provides microcapillary films and/or foams containing one or more functional filler materials. The inventive microcapillary film or foam containing one or more functional filler materials according to the present invention has a first end and a second end, and comprises: (a) a matrix comprising a thermoplastic material, (b) at least one or more channels disposed in parallel in said matrix from the first end to the second end of said microcapillary film, wherein said one or more channels are at least 1 μm apart from each other, and wherein each said one or more channels have a diameter in the range of at least 1 μm ; and (c) at least one or more functional filler materials disposed in said one or more channels; wherein said microcapillary film has a thickness in the range of from 2 μm to 2000 μm .

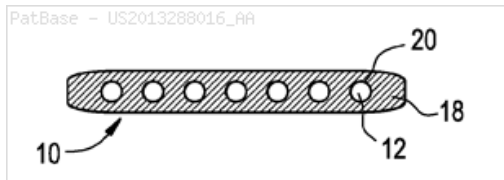
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International (IPC 8-9): B29C44/18 B29C47/04 B29D7/01 B32B1/06 B32B27/32 B32B27/34 B32B3/20 B81B1/00 C08J5/00 C08J5/18 C08J9/00 C08J9/35 (Advanced/Invention)

CPC: B29C44/186 B29D7/01 B32B1/06 B32B3/20 C08J5/18

B81B1/002 C08J9/35 Y10T428/24744

US: 428/188

**Family:**

Publication number	Publication date	Application number	Application date
BR112013017149 A2	20160920	BR20131117149	20120103
CN103314042 A	20130918	CN201280004586	20120103
CN103314042 B	20170808	CN201280004586	20120103
DE602012010619 D1	20151029	DE201260010619T	20120103
EP2661458 A1	20131113	EP20120702626	20120103
EP2661458 B1	20150916	EP20120702626	20120103
ES2552358 T3	20151127	ES20120702626T	20120103
JP2014502660 T2	20140203	JP20130547723T	20120103
JP2016193607 A2	20161117	JP20160081724	20160415
US2013288016 AA	20131031	US20120991441	20120103
WO12094315 A1	20120712	WO2012US20076	20120103

Priority:

EP20120702626	20120103	JP20130547723T	20120103	US20110429347P	20110103
WO2012US20076	20120103	US20120991441	20120103	JP20160081724	20160415

Probable Assignee: DOW CHEMICAL CO

Assignee(s): (std): DOW GLOBAL TECH LLC ; KOOPMANS RUDOLF J ; DOW GLOBAL TECHNOLOGIES LLC ; ZALAMEA BUSTILLO LUIS G ; DOW GLOBAL TECHNOLOGIES INC ; BONGARTZ HERBERT

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Agent(s): MURGITROYD AND CO; BOULT WADE TENNANT; DE ELZABURU ALBERTO; KOBAYASHI HIROSHI; OHMORI NORIO; ASHBURG RAY

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 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 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 PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: REINFORCED MICROCAPILLARY FILMS AND FOAMS

Abstract: Source: US2014072776A The instant invention provides reinforced microcapillary films and/or foams. The inventive reinforced film and/or foam have a first end and a second end, wherein the film and/or foam comprises: (a) a matrix comprising a first thermoplastic material, (b) at least one or more channels disposed in parallel in said matrix from the first end to the second end of the film or foam, wherein said one or more channels are at least 1 μm apart from each other, and wherein each said one or more channels have a diameter in the range of at least 1 μm ; and (c) a second thermoplastic material disposed in said one or more channels, wherein said second thermoplastic material is different than the first thermoplastic material; wherein said film has a thickness in the range of from 2 μm to 2000 μm .

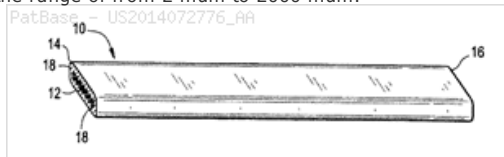
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CPC: B81B1/004 C08J5/18 C08J9/0085 C08J9/35 C08L23/0815 C08L23/12 Y10T428/24744

European: C08L23/08A1 C08L23/12

US: 428/188



Family:

Publication number	Publication date	Application number	Application date
BR112013017151 A2	20160920	BR20131117151	20120103
CN103384698 A	20131106	CN201280009771	20120103
CN103384698 B	20170118	CN201280009771	20120103
EP2661464 A1	20131113	EP20120706720	20120103
EP2661464 B1	20170621	EP20120706720	20120103
JP2014503015 T2	20140206	JP20130547724T	20120103
JP6043727 B2	20161214	JP20130547724T	20120103
US2014072776 AA	20140313	US20120991442	20120103
US9493337 BB	20161115	US20120991442	20120103
WO12094317 A1	20120712	WO2012US20078	20120103

Priority:

US20110429407P 20110103 US20120991442 20120103 WO2012US20078 20120103

Probable Assignee: DOW GLOBAL TECHNOLOGIES LLC

Assignee(s): (std): DOW GLOBAL TECH LLC ; DOW GLOBAL TECHNOLOGIES INC ; KOOPMANS RUDOLF J ; DOW GLOBAL TECHNOLOGIES LLC ; ZALAMEA BUSTILLO LUIS G ; ZALAMEA LUIS G ; BONGARTZ HERBERT

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Inventor(s): LUIS G ZALAMEA BUSTILLO ; RUDOLF J KOOPMANS ; HERBERT BONGARTZ

Agent(s): BOULT WADE TENNANT; KOBAYASHI HIROSHI; OHMORI NORIO; ASHBURG RAY

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 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 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 PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: MICROCAPILLARY FILMS AND FOAMS SUITABLE FOR CAPILLARY ACTION FLUID TRANSPORT

Abstract: Source: US2015315345A The instant invention provides microcapillary films and/or foams suitable for capillary action fluid transport. The inventive microcapillary film and/or foam containing suitable for capillary action fluid transport according to the present invention has a first end and a second end, and comprises: (a) a matrix comprising a thermoplastic material, and (b) at least one or more channels disposed in parallel in said matrix from the first end to the second end of said microcapillary film and/or foam, wherein said one or more channels are at least 1 micro m apart from each other, wherein each said one or more channels have a diameter in the range of at least 1 micro m; wherein said microcapillary film and/or foam has a thickness in the range of from 2 micro m to 2000 micro m.

Classifications:

International (IPC 8-9): B29C44/50 B29D24/00 B29D7/01 B32B27/06 B32B3/20 B32B5/18 C08J5/18 C08J9/12 C08J9/35 (Advanced/Invention); B29C47/00 B29C47/14 B29K105/04 B29K23/00 B29K25/00 B29K67/00 B29K75/00 B29K77/00 B29L23/00 (Advanced/Non-invention)

CPC: C08J5/18 B32B27/06 C08J9/35 B32B2597/00 C08J2323/06 B32B3/20 B32B5/18 B29C44/50 B29C47/0021 B29C47/0028 B29C47/14 B29D7/01 B29K2023/06 B29K2023/12 B29K2025/06 B29K2067/003 B29K2075/00 B29K2077/00 B29K2105/04 B29K2995/004 B29K2995/0068 B29L2023/22 C08J2323/02 C08J2377/02 Y10T428/1376 Y10T428/1397 Y10T428/24744

US: 428/188 428/36.5 428/36.92



Family:

Publication number	Publication date	Application number	Application date
CN104245290 A	20141224	CN201280063391	20121221
EP2794245 A1	20141029	EP20120818967	20121221
IN04557CN2014 A	20160129	IN2014CN04557	20140618
JP2015503467 T2	20150202	JP20140548930T	20121221
US2015315345 AA	20151105	US20120367550	20121221
US9701798 BB	20170711	US20120367550	20121221
WO13096714 A1	20130627	WO2012US71116	20121221

Priority:

US20110578932P 20111222 US20120367550 20121221 WO2012US71116 20121221

Probable Assignee: DOW GLOBAL TECHNOLOGIES LLC

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Assignee(s): DOW CHEMICAL CO ; DOW EUROPE GMBH

Inventor(s): (std): KOOPMANS RUDOLF J ; PRIETO GOUBERT MIGUEL A ; WOCKE COLMAR ; ZALAMEA BUSTILLO LUIS G

Agent(s): BECK GREENER; KOBAYASHI HIROSHI; OHMORI NORIO; DINSMORE AND SHOHL LLP; ASHBURG RAY

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 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 SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: ETHYLENE-ALPHA-OLEFIN COPOLYMER

Abstract: Source: US2014094582A The present invention relates to an ethylene-a-olefin copolymer satisfying the following requirements (A) to (E): (A) the MFR is 0.1 to 50 g/10 min., (B) the density is 860 to 970 kg/m³, (C) the Mz/Mw is from 3.0 to 6.0, (D) the fraction having a molecular weight of 106.5 g/mol of the ethylene-a-olefin copolymer has a branching index g' of 0.26 or more, and (E) the Ea is 60 to 90 kJ/mol.

Classifications:

International (IPC 8-9): C08F210/16 C08L23/08 (Advanced/Invention)

CPC: C08F210/16 C08F210/14 C08F2500/01 C08F2500/09

C08F2500/11 C08F2500/12 C08F2500/19 C08F2500/20 C08F2500/26

US: 526/119 526/348 526/348.2 526/348.4 526/348.5 526/348.6

PatBase - US2014094582_AA

Fig. 1

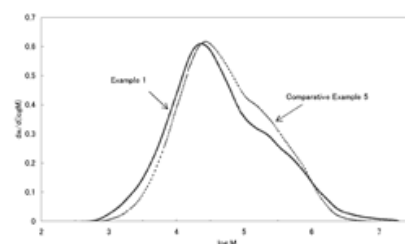
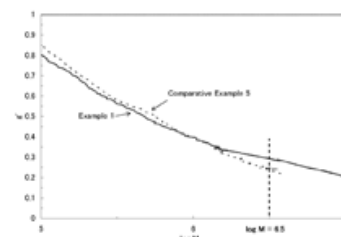


Fig. 2



Family:

Publication number	Publication date	Application number	Application date
CN103709297 A	20140409	CN201310454961	20130929
JP2014088551 A2	20140515	JP20130206141	20131001
US2014094582 AA	20140403	US20130041310	20130930
US8927671 BB	20150106	US20130041310	20130930

Priority:

JP20120220090 20121002 JP20130206141 20131001

Probable Assignee: SUMITOMO CHEMICAL CO

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

Assignee(s): SUMITOMO CHEMICAL CO LTD

Inventor(s): (std): NOMURA JUMMA ; NOMURA JUNMA ; NOZUE YOSHINOBU ; TAKANO MASATO ; YOSHINOBU NOZUE ; MASATO TAKANO ; JUMMA NOMURA

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Title: MICROCAPILLARY FILMS

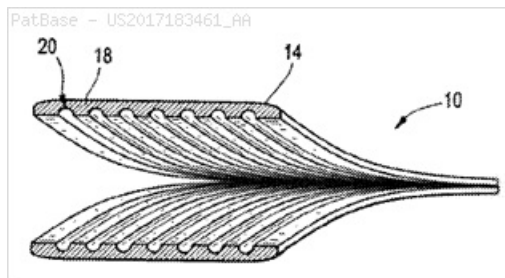
Abstract: Source: US2017183461A The instant invention provides microcapillary films. The inventive microcapillary film according to the present invention comprises a first end and a second end, wherein the microcapillary film comprises: (a) a matrix comprising a thermoplastic material, (b) at least one or more channels disposed in parallel in said matrix from the first end to the second end of said film, wherein said one or more channels are at least 1 micro m apart from each other, and wherein each said one or more channels have a diameter in the range of at least 1 micro m; and wherein said microcapillary film comprise from 10 to 90 percent by volume of voidage, based on the total volume of the microcapillary film, and wherein said one or more channels has a aspect ratio in the range of from 1:1 to 100:1; and wherein said film has a thickness in the range of from 5 micro m to 500 micro m.

Classifications:

International (IPC 8-9): B29D7/01 B32B27/32 B32B3/20

C08J5/18 (Advanced/Invention)

CPC: C08J2323/06 C08J2423/20 C08J5/18 B32B3/20 B32B27/32

**Family:**

Publication number	Publication date	Application number	Application date
AR099407 AA	20160720	AR2015P100420	20150212
CA2939118 AA	20160805	CA20152939118	20150130
CL2016001994 A1	20161223	CL20160001994	20160808
CN105980460 A	20160928	CN201580007634	20150130
CO20160001269 A2	20161121	CO20160001269	20160826
EP3105283 A1	20161221	EP20150703424	20150130
IN201617030131 A	20161230	IN201617030131	20160902
JP2017508039 T2	20170323	JP20160550843T	20150130
KR20160123318 A	20161025	KR20167023869	20150130
MX2016010391 A1	20161130	MX20160010391	20150130
US2017183461 AA	20170629	US20150118177	20150130
WO15123031 A1	20150820	WO2015US13656	20150130

Priority:

US20140939313P 20140213 US20150118177 20150130 WO2015US13656 20150130

Probable Assignee: DOW GLOBAL TECHNOLOGIES LLC

Assignee(s): (std): DOW GLOBAL TECH LLC ; DOW GLOBAL TECHNOLOGIES INC ; DOW GLOBAL TECHNOLOGIES LLC

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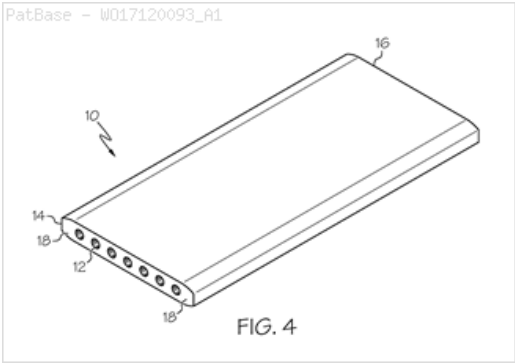
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Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK 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 SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: THERMOFORMED MICROCAPILLARY SHEETING

Abstract: Embodiments of a thermoformed microcapillary sheeting and articles prepared by a process comprising the steps of (a) providing a thermoplastic sheeting comprising thermoplastic material, wherein the thermoplastic sheeting comprises at least one or more microcapillary channel disposed therein and having an initial volume of voidage, based on a total volume of the microcapillary sheeting; and (b) heating the thermoplastic sheeting to a temperature at which the thermoplastic material is deformable to form a thermoformed microcapillary sheeting with the at least one or more microcapillary channels disposed therein and having a final volume of voidage, based on a total volume of the microcapillary sheeting. The final volume of voidage of the at least one or more microcapillary channels of the thermoformed microcapillary sheeting is at least about 10 percent of the initial volume of voidage of the at least one or more microcapillary channels of the thermoplastic sheeting.

Classifications:
International (IPC 8-9): B29C51/00 (Advanced/Invention); B29K23/00 B29K25/00 B29K69/00 (Advanced/Non-invention)
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Family:

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