A film having a polyethylene blend that exhibits superior softness, better stretch recovery, and improved adhesion of adhesive is formed with perforations located in recesses. A bandage is formed from the film by applying an adhesive to a surface of the film and securing a pad to the same surface of the film. The polyethylene blend is formulated to prevent loss of overlap adherence after the bandage undergoes the sterilization process.
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PERFORATED CONTOURED FILM FOR USE IN A BANDAGE

BACKGROUND

The present invention relates to perforated contoured films, and more particularly, to perforated contoured films adapted for use in items such as bandages.

A bandage typically will include a substrate, an adhesive layer applied to the substrate and a pad to be positioned adjacent to the area that the bandage covers. The skin upon which the bandage is applied is an elastic substance which flexes with the movement of the patient. Bandages that do not flex with the movement of the patient apply stress to the skin, and can apply stress to the wound. Therefore, there is a need for films having elastic properties that can be used as the substrate of a bandage and allow the bandage to flex with the movement of the user.

The adhesive of the bandage secures the bandage to the user. The adhesive should have adequate adhesion to the substrate, be uniformly distributed on the substrate, have adequate adhesion to the skin, possess air permeability, and elasticity. Therefore, there is a need for substrate compositions with improved adhesive adhesion properties and processes and equipment for applying adhesive to a bandage which facilitate these requirements for the adhesive.

When the bandage is applied to a circular member such as a finger, it is desired to have the adhesive layer of one end of the bandage attached to the non-adhesive side of the substrate on the other end of the bandage. Therefore, there is a need for films and bandages that facilitate the adherence of the adhesive layer to the substrate when attached to the user.

SUMMARY

In one embodiment, the present invention comprises a film comprising a polymer blend including from about 15%
to about 85% parts by weight of a poly-alpha-olefin and from about 15% to about 85% by weight of an ethylene copolymer. In a further embodiment, the poly-alpha-olefin includes at least one of the resins from the group of a poly-alpha-olefin elastomer, an ultra low density polyethylene, and a metallocene polyethylene. In another further embodiment, the ethylene copolymer includes at least one of the resins from the group of an ethylene vinyl acetate copolymer, an ethylene methyl acrylate copolymer, and an ethylene butyl acrylate copolymer. In another further embodiment, the poly-alpha-olefin includes a poly-alpha-olefin elastomer and an ultra low density polyethylene, and the ethylene copolymer includes an ethylene vinyl acetate copolymer, with the poly-alpha-olefin elastomer, the ultra low density polyethylene, the said ethylene vinyl acetate copolymer being present in the polymer blend in substantially equal portions.

In another embodiment, the invention comprises an improved bandage of the type having a substrate film with a first side and a second side, an adhesive coating disposed on at least a portion of the first side of said substrate film, and a pad secured to the first side of said substrate film, the improvement comprising said substrate film being a polymer blend including from about 15% to about 85% parts by weight of a poly-alpha-olefin, and from about 15% to about 85% by weight of an ethylene copolymer.

In yet another embodiment, the present invention comprises an improved bandage of the type having a substrate film with a first side and a second side, an adhesive coating disposed on at least a portion of the first side of the substrate film, and a pad secured to the first side of the substrate film, the improvement comprising the substrate film being a polymer blend substantially free of metal stearates.

In yet another embodiment, the present invention comprises a method of disposing and adhesive coating onto a substrate film having an adhesive side, comprising the steps of forming a plurality of recesses in the adhesive
side of the film, forming a plurality of perforations in the substrate film, and melt blowing an adhesive onto at least a portion of the adhesive side of the substrate film.

5

BRIEF DESCRIPTION OF THE DRAWINGS

These and other features, aspects, and advantages of the present invention will be better understood with regard to the following description, appended claims, and accompanying drawings where:

FIG. 1 is a fragmentary enlarged perspective view of one embodiment of the perforated contoured film of the present invention;

FIG. 2 is a perspective view of a bandage incorporating an embodiment of the present invention;

FIG. 3 is a schematic diagram illustrating one embodiment of a method for making the perforated contoured film in FIG. 1;

FIG. 4 is an enlarged, sectional view showing a segment of the forming surface as employed in the process illustrated in FIG. 3;

FIG. 5 is a schematic diagram illustrating one method of applying the adhesive to the film of FIG. 1, to be utilized in the bandage according to FIG. 3;

FIG. 6 is a schematic diagram illustrating another method of applying the adhesive to the film of FIG. 1, to be utilized in the bandage according to FIG. 3.

FIG. 7 is a schematic diagram illustrating another method of applying the adhesive to the film of FIG. 1, to be utilized in the bandage according to FIG. 3.

DETAILED DESCRIPTION

Referring now to the drawings, and more particularly to FIG. 1, there is shown a fragmentary enlarged perspective view of the perforated contoured film 100 incorporating one embodiment of the present invention. The film 100 generally includes planar regions 110, funnel protrusions 120, and perforations 130 within the funnel
protrusions 120. The film 100 has a female side 101 and a male side 102. The funnel protrusions 120 have an open wide-mouth base 122 located on the female side 101 of the film 100, and an apex 124 located on the male side 102 of the film 100. The perforations 130 are preferably located in the apex 124 of the funnel protrusions 120.

Referring now to FIG. 2, there is shown a perspective view of a bandage 10 incorporating an embodiment of the present invention. The bandage 10 includes the substrate or film 100, an adhesive 200 disposed on the film 100, and a pad 300 secured to the film 100. The adhesive 200 and pad 300 of the bandage 10 are preferably disposed on the female side 101 of the film 100.

Referring now to FIG. 3, there is shown a schematic diagram illustrating one embodiment of a method for making the perforated contoured film 100. A hot flat sheet 100a of thermoplastic film is extruded from an extruder 410 and passes to a roller 420.

Referring now to FIGS. 3 and 4, the roller 420 generally includes a drum 421 supported at each end by a centrally disposed axle 422, which is supported by means of stationary axle supports 423. For the purposes of rotating the drum 421, a gear drive may be employed which is adapted to mesh with gearing provided on the drum element itself, or a pulley drive may be connected to the drum by means of caps provided on the ends thereof. The drum 421 of the contouring and perforating roller 420 has a cylindrical outer surface 424, a cylindrical inner surface 425, and is highly perforated with holes 426 between the outer surface 424 and the inner surface 425. A molding element or screen 430 is mounted to the drum 421 for contact with the film 100a, and is adapted to be rotated with the drum 10. A vacuum chamber 440 is located inside the drum 421 for applying a vacuum to the inside surface 425 of the drum 421 passing over a stationary location.

Referring still to FIGS. 3 and 4, the molding element 430 is mounted around the cylindrical surface 424 of the drum 421. The molding element 430 has forming recesses
431 in the exterior surface thereof. The molding element 430 also has perforations 432 located in the forming recesses 431 that are in fluid communication with the perforations 426 in the drum 421. The molding element 430 may be a welded or a non-welded screen and is preferably formed as an integral unit adapted to be slipped onto the drum 421 from an end thereof, or to be wrapped around the drum 421 and then secured thereto in any suitable manner.

Still referring to FIGS. 3 and 4, the vacuum chamber 440 is positioned within the drum 421 and opens at a fixed stationary position adjacent to the inner surface 425 of the drum 421. The vacuum chamber 440 is formed of two plates 441 and 442, that are fixed in stationary position. In order to provide an effective seal of the leading and trailing edges of the chamber 440, seals 445 are provided on each of the plates 441 and 442 to form a seal over a limited portion of the inner periphery of the drum 421. Thus the vacuum chamber or slot 440 is sealed to the drum 421 and may be evacuated or reduced in pressure by pumping equipment connected to the chamber 440 in any suitable manner. Vacuum from the vacuum chamber 440 is applied to the inner surface 425 and the holes 426 of the drum 421.

Referring still to FIGS. 3 and 4, the hot flat sheet 100a of thermoplastic film from the extruder 410 contacts the roller 420 at a position 420'. As the roller 420 progresses the hot flat sheet 100a of thermoplastic film from a position 420'' of the roller 420 through a position 420''', vacuum from the vacuum chamber 440 works on the sheet 100a through the holes 425 in the drum 421 and the perforations 432 in the molding element 430. Vacuum from the vacuum chamber 440 draws the hot flat sheet 100a of thermoplastic film into the forming recesses 431 of the molding element 430 to contour the hot flat sheet 100a, and perforates the hot flat sheet 100a of thermoplastic film by extracting a portion of the thermoplastic film in the area of the perforations 432 of the molding element 430. The action of the vacuum from the vacuum chamber 440
forms the thermoplastic film into a perforated contoured sheet 100b.

Referring back now to FIG. 3, the perforated contoured sheet 100b from the roller 420 passes through drive rolls 451 and 452 to a corona treatment roller 461. Tension rollers 462 and 463 contact the thermoplastic film on opposing sides of the corona treatment roller 461 to insure positive engagement of the thermoplastic film with the corona treatment roller 461 during the corona treatment process. The corona treatment roller 461 is usually covered with a suitable dielectric material such as epoxy, fluorinated polyethylene (TEFLON), chlorinated polyethylene (HYPALON), or polyester (MYLAR). An electrode or corona bar 464 is suspended parallel to the corona treatment roller 461 at about 1/16th of an inch above the corona treatment roller 461. The corona bar 464 is energized by a transformer and corona treating power source 465. The energized corona bar 464 and corona treatment roller 461 will corona treat the thermoplastic film on the corona treatment roller 461 to form the corona treated, perforated contoured film 100c.

Still referring to FIG. 3, the corona treated, perforated contoured film 100c from the corona treatment roller 461 passes over a tension roller 470 to a take-up reel 480. The film on the take-up reel 480 can be utilized as one embodiment of the perforated contoured film 100 of the present invention.

The perforated contoured film 100 of the present invention is preferably a polyethylene based film that exhibits superior stretch and recovery properties. In one embodiment, film is made from a multi-component blend of two major component resins that include a poly-alpha-olefin and an ethylene copolymer. For the purpose of the present invention, the major component of poly-alpha-olefin is defined as being one or more resins from the group of poly-alpha-olefins which includes resins such as an poly-alpha-olefin elastomer, an ultra low density polyethylene, a metallocene polyethylene (mPE), or a combination thereof. For the purpose of the present
invention, the major component of ethylene copolymer is
defined as being one or more resins from the group of
ethylene copolymers which includes resins such as an
ethylene vinyl acetate (EVA) copolymer, an ethylene methyl
acrylate (EMA) copolymer, an ethylene butyl acrylate (EBA)
copolymer, or a combination thereof. The amount of each
of the two major components can be varied from about 15%
to about 85% while still achieving elastic performance
that is superior to other polyethylene films. In one
preferred embodiment, the mixture is approximately equal
amounts each of the poly-alpha-olefin elastomer, the ultra
low density polyethylene, and one of the ethylene
copolymers. However, the amount of each of the two major
components can be varied to accommodate the desired final
properties, such as the film flexibility, texture,
manufactureablity, and other attributes. Other minor
components such as colorants or other additives can also
be added to the composition of the perforated contoured
film 100.

The polyethylene based film of the present invention
demonstrates unexpected improvements in the stretch and
recovery properties over the traditional polyethylene
based films. Traditional polyethylene based films exhibit
a 10% to 15% permanent set when extended in length by 50%
to 75%. In contrast, a polyethylene based film of the
present invention having the blend of equal amounts each
of poly-alpha-olefin elastomer, ultra low density
polyethylene, and one of the ethylene copolymers was shown
to exhibit only a 6% to 8% permanent set when extended in
length by 50% to 75%. The unexpected results are believed
to result from the synergism of the major components of
the polyethylene film of the present invention. Part of
the present invention is the discovery that some adhesives
do not adhere well to poly-alpha-olefin films.
Furthermore, the incorporation of alpha-olefin copolymers
into the blend according to the present invention produces
the unexpected result of improved adhesion of adhesives,
such as acrylic-based hot melt, and pressure sensitive
adhesives, to the substrate.
Typically, a bandage must be sterilized after the manufacturing processes. Common methods of sterilizing a bandage include such methods as using an autoclave, gamma radiation, or ethylene oxide. Under certain sterilization conditions, both the substrate film and the adhesive of a bandage undergo structural changes at the molecular level. In particular, the ability of the adhesive to adhere to the side of the substrate film not having an adhesive coating (i.e. overlap adhesion) can be adversely affected by sterilization processes such as those using ethylene oxide. Overlap adhesion depends on the materials in the substrate film, the adhesives, and the sterilization process utilized.

The extent of degradation in overlap adhesion involves the synergism of the materials in the substrate film and the sterilization process, and the type of adhesive used. Conventional low density polyethylene (LDPE) contains a certain amount of metal stearates. Also, the process of sterilization using ethylene oxide heats the bandage up to about 180°F. The present invention includes the discovery that the use of sterilization processes utilizing ethylene oxide on bandages with substrate films having conventional low density polyethylene, causes the metal stearates in the substrate film to migrate to the surface of the film, which, in turn, decreases overlap adhesion of the bandage. To improve overlap adhesion, the present invention incorporates the use of low density polyethylene materials that have little or no metal stearates, such as metallocene polyethylene (MPE), in place of conventional low density polyethylene. Consequently, the polyethylene based film of the present invention has better overlap adhesion after sterilization processes utilizing ethylene oxide compared to the prior art polyethylene based films.

It has be found that the method illustrated in FIGS. 3 and 4 can be utilized to produce the film 100 in FIG. 1 with the following examples of polyethylene based film mixtures:
EXAMPLE 1

32% Dow EG8200,
32% Dow 4402
31% DuPont 3130SB (EVA copolymer)
5% Color

A film produced using the mixture according to Example 1 obtained the desired stretch and recovery properties of the present invention. However, the slip and antiblocking additives in DuPont 3130SB can degrade the adhesion properties of the film. Therefore, the film produced using the mixture according to Example 1 is not as desirable in applications where adhesion properties are a factor.

EXAMPLE 2

32% Dow EG8200
32% Dow 4402
31% DuPont 3130 (EVA copolymer)
5% Color

The mixture according Example 2 is similar to the mixture in Example 1, except that DuPont 3130 is used in place of DuPont 3130SB. DuPont 3130 is comparable to DuPont 3130SB, except that the former does not contain slip or antiblocking agents. The result is that a film produced using the mixture according to Example 2 has better adhesion properties than a film produced using the mixture according to Example 1.

EXAMPLE 3

32% Dow EG8200
32% Dow 4402
32% DuPont 3124
4% Color

The component of DuPont 3124 in Example 3 is comparable to the component DuPont 3130 in Example 2; however, the former has a lower molecular weight than the latter. It was discovered that the lower molecular weight of Dupont 3124 improves the manufactureability of the film
without sacrificing desirable properties such as softness and elasticity.

EXAMPLE 4
5
- 32% Dow EG8200
- 32% Dow 4402
- 32% Chevron 2207 (ethylene methyl acrylate copolymer)
- 4% Color

EXAMPLE 5
10
- 32% Dow EG8200
- 32% Dow 4402
- 16% DuPont 3134 (ethylene vinyl acetate copolymer)
- 16% Chevron 2207 (ethylene methyl acrylate copolymer)
- 4% Color

EXAMPLE 6
20
- 75% Dow PL 1280
- 21% Chevron 2207
- 4% Color

EXAMPLE 7
25
- 65% Dow PL 1280
- 31% Chevron DS 3054 (ethylene butyl acrylate copolymer)
- 4% Color

Referring back now to FIG. 2, the bandage of the present invention can be produced by first applying the adhesive 200 to the substrate film 100, and then securing the pad 300 to the combination of the substrate film 100 and adhesive 200 at a later time. Often, the combination of the substrate film 100 and the adhesive 200 are transported and stored before the pad 300 is secured to thereon, thereby subjecting the adhesive 200 to detrimental conditions before the securement of the pad 300. Therefore, in one method of forming the bandage 10, a combination is first formed of the adhesive 200 applied onto the substrate film 100 and a release liner applied
to the adhesive coating 200, and later the release liner is removed prior to securing the pad 300 to the combination of the substrate film 100 and the adhesive 200.

Referring now to FIG. 5, there is shown a schematic diagram illustrating one method of forming a film/adhesive/release liner combination 12 of the substrate film 100, the adhesive 200, and a release liner 250 protecting the adhesive 200. The film 100 from a substrate film supply (not shown), such as a roll of the substrate film 100, progresses to a perforated supporting plate 510 located below a melt blowing apparatus 520. The melt blowing apparatus 520 includes a gear pump (not shown) that forces the adhesive 200 through a die 530. The melt blowing apparatus 520 also has air channels 541 and 542 which have orifices 543 and 544 that are located on the same plane A-A as the die 530.

Still referring to FIG. 5, air 210 is forced through the air channels 541 and 542 exits the orifices 543 and 544 and engages melted adhesive 200a exiting the die 530. The air 210 engaging the melted adhesive 200a causes the melted adhesive 200a to become a fiberized melted adhesive 200b. The fiberized melted adhesive 200b deposits onto the film 100 supported by the support plate 510 and forms the adhesive coating 200 on the film 100, thereby creating a film/adhesive combination 11. The perforations in the film 100 allow a substantial portion of the air 210 from the melt blowing apparatus 520 to pass through or obtusely deflect from the film 100, which reduces the amount of fiberized melt blown adhesive 200b that is deflected away from the film 100 or back at the die 530 and orifices 543 and 544. A reduction in the amount of fiberized melt blown adhesive 200b that is deflected away from the film 100 or back at the die 530 and orifices 543 and 544 reduces the possibility of adhesive 200 blocking the die 530 and orifices 543 and 544, provides for a greater amount of the adhesive 200 that is deposited onto the film 100, and reduces spreading of the pattern of adhesive 200 deposited on the film 100.
Referring still to FIG. 5, the release liner 250 is a material that will adhere to, and protect, the adhesive 200 from the time that the adhesive 200 is applied to the film 100 until the time that the pad 300 is applied to the combination of the adhesive/film 11. In one embodiment, the release liner 250 is a silicone coated paper or film. The release liner 250 progresses from a release liner supply (not shown), such as a roll of the release liner 250, to rollers 550 and 560. The film/adhesive 11 progresses from the support plate 510 to the rollers 550 and 560. The rollers 550 and 560 apply the release liner 250 onto the adhesive 200 of the film/adhesive combination 11 to form the film/adhesive/liner combination 12. The film/adhesive/liner combination 12 progresses to a take-up (not shown), such as a reel, for use later to form the bandage 10.

Referring now to FIG. 6, there is shown a schematic diagram illustrating another method of forming the film/adhesive/release liner combination 12 of the film 100, the adhesive 200, and the release liner 250 protecting the adhesive 200. The film 100 from a substrate film supply (not shown), such as a roll of the substrate film 100, progresses over a support roller 610 to a slot die coating apparatus 620. The film 100 is conveyed under a slot die 630 in the slot die coating apparatus 620. As the film 100 progresses past the slot die 630 of the coating apparatus 620, the film 100 wipes off the molten adhesive 200 from the slot die 630 to coat the film 100 with the adhesive 200 and form the film/adhesive combination 11. The release liner 250 progresses from a release liner supply (not shown), such as a roll of the release liner 250, to rollers 650 and 660, and the film/adhesive 11 progresses from the slot die coating apparatus 620 to the rollers 650 and 660. The rollers 650 and 660 apply the release liner 250 onto the adhesive 200 of the film/adhesive combination 11 to form the film/adhesive/liner combination 12. The film/adhesive/liner combination 12 progresses to a take-up
(not shown), such as a reel, for use later to form the
bandage 10.

Referring now to FIG. 7, there is shown a schematic
diagram illustrating another method of forming the
film/adhesive/release liner combination 12 of the film
100, the adhesive 200, and the release liner 250
protecting the adhesive 200. The release liner 250 from
a release liner supply (not shown), such as a roll of the
release liner 250, progresses over a support roller 740
to a transfer roller 760. A slot die coating apparatus
720 is positioned with a slot die 730 adjacent to the
release liner 250 on the transfer roller 760. As the
release liner 250 moves with the transfer roller 760 past
the slot die coating apparatus 720, the release liner 250
wipes off the molten adhesive 200 from the slot die 730
to coat the release liner 250 with the adhesive 200 and
form the liner/adhesive combination 14. The film 100 from
a substrate film supply (not shown), such as a roll of the
substrate film 100, progresses over a support roller 710
to a substrate roller 750.

Still referring to FIG. 7, the transfer roller 760
is preferably formed of a rubber layer 761 disposed on an
inner steel roller 762, and the substrate roller 750 is
preferably formed of steel. The rollers 750 and 760 apply
the film 100 onto the adhesive 200 of the liner/adhesive
combination 14 to form the film/adhesive/liner combination
12. The film/adhesive/liner combination 12 progresses to
a take-up (not shown), such as a reel, for use later to
form the bandage 10.

It has been found that the methods illustrated in
FIGS. 5, 6, and 7 can be used to produce the
film/adhesive/release liner 12 according to the following
examples using 40 hex VisPore from Tredgar Film Products
having approximately 1,760 hole per square inch with holes
having a diameter of approximately 0.3 micrometers:

EXAMPLE 8

A hot melt, pressure sensitive adhesive HL2306-X,
from H.B. Fuller of St Paul, Minnesota, was applied to the
VisPore material using the melt blown method illustrated in FIG. 5. The release liner was Akrosil SBL 60 SC Silox F1U/F4B from Akrosil of Menasha, Wisconsin.

EXAMPLE 9

The hot melt, pressure sensitive adhesive and the release liner from Example 6 were applied to the VisPore material using the slot die coating method illustrated in FIG. 6.

EXAMPLE 10

A hot melt, pressure sensitive adhesive Alto Findley 2498 was applied to the VisPore material using the slot die coating method illustrated in FIG. 6. The release liner was Eastern Paper, grade 30RFSE from Eastern Paper of Brewer, Maine.

EXAMPLE 11

The hot melt, pressure sensitive adhesive and the release liner from Example 8 were applied to the VisPore material using the transfer coating method illustrated in FIG. 7.

EXAMPLE 12

A hot melt, pressure sensitive adhesive Duro-Tak 34-4227, from National Starch and Chemical Co. of Bridgewater, New Jersey, was applied to the VisPore material using the transfer coating method illustrated in FIG. 7. The release liner was Akrosil Silox BL25-MGA from Akrosil of Menasha, Wisconsin.

EXAMPLE 13

A hot melt, pressure sensitive adhesive HL1407-X, from H.B. Fuller of St Paul, Minnesota, was applied to the VisPore material using the transfer coating method illustrated in FIG. 7. The release paper was Akrosil SBL 60 SC Silox F1U/F4B from Akrosil of Menasha, Wisconsin.
EXAMPLE 14
A hot melt, pressure sensitive adhesive HM-1902, from H.B. Fuller of St Paul, Minnesota, was applied to the VisPore material using the transfer coating method illustrated in FIG. 7. The release paper was Akrosil SBL 60 SC Silox F1U/F4B from Akrosil of Menasha, Wisconsin.

EXAMPLE 15
A hot melt, pressure sensitive adhesive Dura-Tak 34-4227, from National Starch and Chemical Co. of Bridgewater, New Jersey, was applied to the VisPore material using the transfer coating method illustrated in FIG. 7. The release paper was Akrosil SBL 60 SC Silox F1U/F4B from Akrosil of Menasha, Wisconsin.

EXAMPLE 16
A hot melt, pressure sensitive adhesive 128-3, from National Starch and Chemical Co. of Bridgewater, New Jersey, was applied to the VisPore material using the transfer coating method illustrated in FIG. 7. The release paper was Akrosil SBL 60 SC Silox F1U/F4B from Akrosil of Menasha, Wisconsin.

It is thus believed that the operation and construction of the present invention will be apparent from the foregoing description of a preferred embodiment. While the device and method shown are described as being preferred, it will be obvious to a person of ordinary skill in the art that various changes and modifications may be made therein without departing from the spirit and scope of the invention as defined in the following claims. Therefore, the spirit and scope of the appended claims should not be limited to the description of the preferred embodiments contained herein.
WHAT IS CLAIMED IS:

1. A film comprising a polymer blend including from about 15% to about 85% parts by weight of a poly-alpha-olefin, and from about 15% to about 85% by weight of an ethylene copolymer.

2. The film according to the claim 1, wherein said poly-alpha-olefin includes at least one of the resins from the group of a poly-alpha-olefin elastomer, an ultra low density polyethylene, and a metalloocene polyethylene.

3. The film according to claim 1, wherein said ethylene copolymer includes at least one of the resins from the group of an ethylene vinyl acetate copolymer, an ethylene methyl acrylate copolymer, and an ethylene butyl acrylate.

4. The film according to claim 1, wherein said poly-alpha-olefin includes a poly-alpha-olefin elastomer and an ultra low density polyethylene, and wherein said ethylene copolymer includes an ethylene vinyl acetate copolymer.

5. The film according to claim 4, wherein said poly-alpha-olefin elastomer, said ultra low density polyethylene, and said ethylene vinyl acetate copolymer are present in said polymer blend in substantially equal portions.

6. The film according to claim 1, wherein said film further includes a plurality of perforations.

7. The film according to claim 1 wherein said film further includes a plurality of recesses.

8. The film according to claim 6, wherein said film further includes a plurality of perforation.
9. The film according to claim 6, wherein said film further includes at least one perforation located within each of the recesses.

10. The film according to claim 1, wherein said polymer blend of said film is substantially free of metal stearates.

11. An improved bandage of the type having a substrate film with a first side and a second side, an adhesive coating disposed on at least a portion of the first side of said substrate film, and a pad secured to the first side of said substrate film, the improvement comprising said substrate film being a polymer blend including from about 15% to about 85% parts by weight of a poly-alpha-olefin, and from about 15% to about 85% by weight of an ethylene copolymer.

12. The improved bandage according to claim 11, wherein said improvement further comprises said poly-alpha-olefin includes at least one of the resins from the group of a poly-alpha-olefin elastomer, an ultra low density polyethylene, and a metalloocene polyethylene.

13. The improved bandage according to claim 11, wherein said improvement further comprises said ethylene copolymer includes at least one of the resins from the group of an ethylene vinyl acetate copolymer, an ethylene methyl acrylate copolymer, and an ethylene butyl acrylate copolymer.

14. The improved bandage according to claim 11, wherein said improvement further comprises said poly-alpha-olefin includes a poly-alpha-olefin elastomer and an ultra low density polyethylene, and wherein said ethylene copolymer includes an ethylene vinyl acetate copolymer.

15. The improved bandage according to claim 14, wherein said improvement further comprises said poly-alpha-
olefin elastomer, said ultra low density polyethylene, and said ethylene vinyl acetate copolymer are present in said polymer blend in substantially equal portions.

16. The improved bandage according to claim 11, wherein said improvement further comprises said substrate film having a plurality of perforations.

17. The improved bandage according to claim 11, wherein said improvement further comprises said substrate film having a plurality of recesses.

18. The improved bandage according to claim 17, wherein said improvement further comprises said substrate film having a plurality of perforations.

19. The improved bandage according to claim 17, wherein said improvement further comprises said substrate film having at least one perforation located within each of the recesses.

20. The improved bandage according to claim 11, wherein said improvement further comprises said polymer blend of said substrate film being substantially free of metal stearates.

21. An improved bandage of the type having a substrate film with a first side and a second side, an adhesive coating disposed on at least a portion of the first side of said substrate film, and a pad secured to the first side of said substrate film, the improvement comprising said substrate film being a polymer blend substantially free of metal stearates.

22. The improved bandage according to claim 21, wherein said improvement further comprises said substrate film having a plurality of perforations.
23. The improved bandage according to claim 21, wherein said improvement further comprises said substrate film having a plurality of recesses.

24. The improved bandage according to claim 23, wherein said improvement further comprises said substrate film having a plurality of perforations.

25. The improved bandage according to claim 23, wherein said improvement further comprises said substrate film having at least one perforation located within each of the recesses.

26. A method of disposing an adhesive coating onto a substrate film having an adhesive side, comprising the steps of:
   forming a plurality of recesses in the adhesive side of said film;
   forming a plurality of perforations in said substrate film; and
   melt blowing an adhesive onto at least a portion of the adhesive side of the substrate film.

27. The method according to claim 26, wherein said step of forming a plurality of perforations includes locating said perforations within said plurality of recesses formed in the adhesive side of said substrate film.

28. The method according to claim 26, further including the step of disposing a release liner onto the adhesive on the adhesive side of said substrate film.

29. The method according to claim 26, wherein said step of melt blowing further includes:
   forcing an adhesive through an adhesive orifice; and
   forcing air through at least one air orifice located on substantially the same plane as said
adhesive orifice such that the air exiting said air orifice contacts the adhesive exiting said adhesive orifice and forces the adhesive towards the adhesive side of said substrate film.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 C08J5/18 A61P13/02 //C08L23:02,C08L23:08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
IPC 6 C08J A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<td>WO 97 26850 A (MCNEIL PPC INC) 31 July 1997</td>
<td>1, 2, 6-12, 16-25</td>
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Date of the actual completion of the international search: 16 December 1998

Date of mailing of the international search report: 30/12/1998

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Authorized officer

Tarrida Torreil, J

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