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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO DIVISION DE NUEVAS CREACIONES

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
Rad 06-110150- -00001-0000
Fec 2008-11-08 16:27:32 Dep 2020 NUECREACIONES
Tra 2 PATENTES
Eve 1 REGDEPOSITO
Art 228 CTINFORMACION Folio 43

Ref Expediente No 06-110 150
Solicitud de Patente a nombre de
McNeil-PPC, Inc

Yo, JIMENA ESCOBAR URIBE, identificada como aparece al pie de mi firma, domiciliada en la Carrera 11 A No 94-76, of 305, obrando como apoderada de la sociedad **McNeil-PPC, Inc**, domiciliada en Skillman, New Jersey, Estados Unidos de America, solicitante de la patente de la referencia, atentamente me permito presentar copia certificada de la solicitud de patente numero 11/263,494 presentada en Estados Unidos de America el día 31 de octubre de 2005, con la debida traduccion de lo pertinente

Señor Superintendente,


JIMENA ESCOBAR URIBE
C C 39 779 452 de Usaquen
T P 68228
Cod 5376

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**ESTADOS UNIDOS DE AMERICA
A TODOS AQUELLOS A QUIENES EL PRESENTE LLEGUE**

**DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS
Oficina de Patentes y Marcas de los Estados Unidos**

24 de octubre de 2006

La presente es para certificar que el anexo es una copia fiel de los registros de la Oficina de Patentes y Marcas de los Estados Unidos, de los documentos de la solicitud de patente identificada mas adelante, que cumplieron con los requerimientos para concederse una fecha de presentacion de acuerdo con 35 USC 111

Numero de Solicitud 11/263,494

Fecha de Presentacion 31 de octubre de 2005

**EL CÓDIGO DEL PAIS Y EL NUMERO DE SU SOLICITUD DE
PRIORIDAD, PARA SER USADA EN LA PRESENTACIÓN
EXTRANJERA BAJO EL CONVENIO DE PARÍS ES US11/263,494**

**Por la autoridad de
Bajo el Secretario de Comercio para la Propiedad Intelectual y el Director de la
Oficina de Patentes y Marcas de los Estados Unidos de America**

**(fdo) H L. JACKSON
Oficial Certificador
Sello oficial de la Oficina de Patentes y Marcas de los
Estados Unidos de America**

DA 7018964

**THE UNITED STATES OF AMERICA****TO ALL TO WHOM THESE PRESENTS SHALL COME:****UNITED STATES DEPARTMENT OF COMMERCE****United States Patent and Trademark Office****October 24, 2006**

**THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM
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APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A
FILING DATE UNDER 35 USC 111**

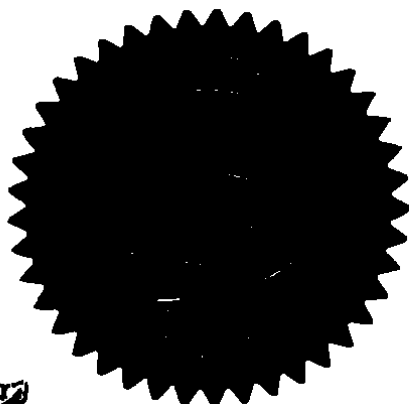
APPLICATION NUMBER 11/263,494

FILING DATE October 31, 2005

**THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY
APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS
CONVENTION, IS US11/263,494**

By Authority of the

**Under Secretary of Commerce for Intellectual Property
and Director of the United States Patent and Trademark Office**




H. L. JACKSON
Certifying Officer

UTILITY PATENT APPLICATION TRANSMITTAL (only for new nonprovisional applications under 37 CFR 1.52(b))		Attorney Docket No.	PPC-5219-USNP
		First Inventor	Joseph M. Lutzel
		Title	SANITARY NAPKIN INCLUDING BODY-FACING ADHESIVE
		Express Mail Label No.	EV 204047383 US
APPLICATION ELEMENTS See MPEP Chapter 600 concerning utility patent application contents.		ADDRESS TO Commissioner for Patents P O Box 1450 Alexandria, VA 22313-1450	
1 ☒ Fee Transmittal Form (e.g., PTO/SB/17) (submit an original and a duplicate for fee processing) 2 ☐ Applicant claims small entity status 3 ☒ Specification [Total Pages 28] (Preferred arrangement set forth below) - Descriptive Title of the Invention - Cross Reference to Related Applications - Statement Regarding Fed sponsored R&D - Reference to sequence listing, a table or a computer program listing appendix - Background of the Invention - Brief Summary of the Invention - Brief Description of the Drawings (if filed) - Detailed Description - Claim(s) - Abstract of the Disclosure 4 ☒ Drawing(s) (35 USC 113) [Total Sheets 4] 5 Oath or Declaration [Total Pages] a. ☐ Newly executed (original or copy) b. ☐ Copy from a prior application (37 CFR 1.63(d)) (for continuation/divisional with Box 18 completed) 1. ☐ DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b) 6 ☐ Application Data Sheet See 37 CFR 1.78		7 ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix) 8 Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary) a. ☐ Computer Readable Form (CRF) b. ☐ Specification Sequence Listing on 1. ☐ CD-ROM or CD-R (2 copies), or 2. ☐ paper c. ☐ Statement verifying identity of above copies ACCOMPANYING APPLICATION PARTS 9 ☐ Assignment Papers (cover sheet & document(s)) 10. ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney (when there is an assignee) 11 ☐ English Translation Document (if applicable) 12. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations 13. ☐ Preliminary Amendment 14 ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized) 15. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed) 16. ☐ Request and Certifications under 35 U.S.C. 122 (b)(2)(B)(i) Applicant must attach form PTO/SB/35 or its equivalent. 17 ☐ Other	
18. ☐ If a CONTINUING APPLICATION check appropriate box and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.78: ☐ Continuation ☐ Divisional ☐ Continuation-in-Part (CIP) of prior application No. , filed Prior application Information Examiner Group Art Unit For CONTINUATION or DIVISIONAL APPS only The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts			
19 CORRESPONDENCE ADDRESS ☒ Customer Number or Bar Code Label 000027777 or ☐ Correspondence Address below Name Philip S. Johnson, Esq Address Johnson & Johnson One Johnson & Johnson Plaza New Brunswick, NJ 08933-7003 USA			
20 TELEPHONE CONTACT Please direct all telephone calls or telefaxes to Paul J Higgins at Telephone (732) 524-1728 Fax. (732) 524-2808			
21 SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED			
NAME	Paul J Higgins Reg No 44,152		
SIGNATURE	/Paul J Higgins/		
DATE	October 31, 2005		

FEE TRANSMITTAL	<i>Complete if Known</i>		
	Application Number	Unassigned	
	Filing Date	October 31, 2005	
	First Named Inventor	Joseph M. Luzzi	
	Group Art Unit	Unassigned	
	Examiner Name	Unassigned	
		Attorney Docket Number	PPC-5219-USNP

FEE CALCULATION**CLAIMS AS FILED**

(1)	(2)	(3)	(4)	(5)
FOR.	NUMBER FILED	NUMBER EXTRA	RATE	BASIC FEE \$300.00
TOTAL CLAIMS	27 - 20 =	7	x 50.00	\$ 350.00
INDEPENDENT CLAIMS	3 - 3 =	0	x 200.00	\$ 0.00
SEARCH FEE	NA	NA	NA	\$ 500.00
EXAMINATION FEE	NA	NA	NA	\$ 200.00
APPLICATION SIZE FEE If the specification and drawings exceed 100 sheets of paper the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 25 U.S.C. 41(a)(1)(G) and 37 CFR 1.18(e).	0 - 100 =	/50	x 250.00 (If the specification and drawings exceed 100 sheets of paper, for each additional 50 sheets or fraction thereof)	\$
MULTIPLE DEPENDENT CLAIMS	☒	N/A	\$380.00	
			TOTAL FEES	\$ 1,350.00

METHOD OF PAYMENT

- ☒ Please charge Deposit Account No 10-0750/PPC-5219-USNP/PJH in the amount of \$1,350.00. Three copies of this sheet are enclosed.
- ☒ The Commissioner is hereby authorized to charge any additional fees which may be required in connection with the filing of this communication, or credit any overpayment, to Account No 10-0750/PPC-5219-USNP/PJH. Three copies of this sheet are enclosed.

SUBMITTED BY			<i>Complete (if applicable)</i>
Typed or Printed Name	Paul J. Higgins		Reg. No. 44,152
Signature	/Paul J. Higgins/	Date: October 31, 2005	Deposit Account No. 10-0750

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DOCKET NO PPC-5219-USNP

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

Applicant Luizzi et al

For SANITARY NAPKIN INCLUDING BODY-FACING ADHESIVE

Express Mail Certificate

"Express Mail" mailing number EV 204047383 US

Date of Deposit October 31, 2005

I hereby certify that this complete application, including specification pages, claims, and drawings, is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner for Patents, P O Box 1450, Alexandria, VA 22313-1450

A Combined Declaration and Power of Attorney will be submitted to the United States Patent and Trademark Office upon receipt of the U S Serial Number for this patent application

KRISTINE KINGSBURY

(Typed or printed name of person mailing paper or fee)

/Kristine Kingsbury/

(Signature of person mailing paper or fee)

50 #
53**SANITARY NAPKIN INCLUDING BODY-FACING ADHESIVE**

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FIELD OF THE INVENTION

The present invention relates to a body attachable sanitary protection article, such as a sanitary napkin, and in particular a sanitary napkin including an adhesive on a body-facing surface of the napkin for comfortably and securely attaching the napkin to the body

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BACKGROUND OF THE INVENTION

Various absorbent articles configured to be arranged adjacent the body to absorb body fluids such as menses, urine and the like are well known. With respect to feminine hygiene, napkins and liners have been developed for external use about the pudendal region of a female.

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Securement of a sanitary napkin or liner during use is normally accomplished by attaching the sanitary garment by pressure sensitive adhesive to the wearer's undergarment. Napkins having wings or flaps that fold over the edges of the garment and are attached to the underside of the garment using an adhesive are also known

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The prior art also teaches sanitary protection articles that are intended to be secured directly to the body by an adhesive arranged on a body-facing surface of the article. For example, GB2284767A purports to disclose an absorbent article including an absorbent and an adhesive arranged adjacent the absorbent, the adhesive being designed to contact the wearer's body during use



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A problem with body attachable sanitary articles of the type discussed above is that they must adhere securely to the body during use yet at the same time be selectively detachable from the skin without causing pain to the user. Attempts have been in the prior art to solve this problem. For example, U S Patent Nos 6,620,143 and 6,213,993 purport to disclose body-attachable sanitary napkins including adhesives that permit the napkin to be comfortably worn and removed with little or no pain to the wearer. Similarly, U S Patent No 6,191,189 purports to disclose a substrate and adhesive combination that provides secure attachment and is pleasing to the skin upon application, yet causes no discomfort upon removal.

10 Despite the above described efforts, there is still a need for body attachable absorbent articles that remain securely attached to the body during use yet at the same time permit the user to selectively attach and remove the article with little or no pain.

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SUMMARY OF THE INVENTION

According to one aspect of the invention, the present invention provides a body-attachable absorbent article including a body-facing surface, a garment-facing surface, an adhesive applied to said body-facing surface for selectively securing the article to a body of a user, wherein said adhesive has the following properties

$$G'_{[100 \text{ rad/sec @ } 37^\circ \text{ C}]} / G'_{[0.1 \text{ rad/sec @ } 37^\circ \text{ C}]} \geq 4.5, \text{ and}$$

$$-20^\circ \text{ C} \leq T_g (^\circ \text{C}) \leq 15^\circ \text{ C}$$

According to another aspect of the invention, the present invention provides a body-attachable sanitary napkin including a cover layer, a barrier layer, an absorbent layer arranged between the cover layer and the barrier layer, an adhesive applied to a body-facing surface of the napkin for selectively securing the article to a body of a user, wherein said adhesive has the following properties

$$G'_{[100 \text{ rad/sec @ } 37^\circ \text{ C}]} / G'_{[0.1 \text{ rad/sec @ } 37^\circ \text{ C}]} \geq 4.5, \text{ and}$$

$$-20^\circ \text{ C} \leq T_g (^\circ \text{C}) \leq 15^\circ \text{ C}$$

According to yet another aspect of the invention, the present invention provides a body-attachable absorbent article including a cover layer, a barrier layer, an absorbent layer arranged between the cover layer and the barrier layer, an adhesive applied to a body-facing surface of the napkin for selectively securing the article to a body of a user, wherein the adhesive has the following properties

$$G'_{[100 \text{ rad/sec @ } 37^\circ \text{ C}]} / G'_{[0.1 \text{ rad/sec @ } 37^\circ \text{ C}]} \text{ between } 4.8 \text{ and } 6, \text{ and}$$

$$\text{a } T_g \text{ value between } -20^\circ \text{ C and } -10^\circ \text{ C,}$$

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the article having an average removal force of between 30 g/per mm width of
adhesive and 40 g/mm width of adhesive

BRIEF DESCRIPTION OF THE DRAWINGS

Examples of embodiments of the present invention will now be described with
5 reference to the drawings, in which

Fig 1 is a perspective view of a body attachable sanitary napkin according to the
present invention, the release member thereof being partially broken away to show the
cover layer;

Fig 2 is an exploded perspective view of the sanitary napkin shown in Fig 1.

10 Fig. 3 is a perspective view of a body attachable sanitary napkin according to
another embodiment of the present invention, the release member thereof being partially
broken away to show the cover layer;

Fig 4 is a partially exploded perspective view of the sanitary napkin shown in
Fig 3, and

15 Fig. 4a is a detailed perspective view of a portion of the sanitary napkin shown in
Figs 3 and 4,

Fig. 5 is a graph of the glass transition temperature T_g (in °C) verses the
rheological properties $G'_{[100 \text{ rad/sec @ } 37^\circ \text{C}]} / G'_{[0.1 \text{ rad/sec @ } 37^\circ \text{C}]}$ of adhesives employed in the
present invention

DETAILED DESCRIPTION OF THE INVENTION

The present invention relates to a disposable absorbent article including an
5 adhesive on a body-facing surface thereof for securing the article to the body of a wearer
For simplicity of description only, the invention will be described as applied to a sanitary
napkin, but the invention is not limited thereto. The present invention may also be
applied to interlabial devices which reside partially within and partially outside the
female wearer's vestibule as well as to other absorbent articles such as pantliners,
10 incontinence articles and the like

Referring to FIGS. 1 and 2, there is shown an embodiment of the present
invention, a feminine sanitary napkin 20. The sanitary napkin 20 has a main body 22
with a first transverse side 26 defining a front portion thereof and a second transverse
side 28 defining a rear portion thereof. The main body also has two longitudinal sides,
15 namely a longitudinal side 30 and a longitudinal side 32.

As depicted in FIG. 2, the main body 22 is of a laminate construction and
preferably comprises a fluid-permeable cover layer 42, an absorbent system 44 and a
fluid-impervious barrier layer 50. The absorbent system 44 may comprise a single layer
of material or may comprise multiple layers. For example, the absorbent system 44 may
20 comprise a single layer core or it may include a transfer layer and a core.

In the embodiment of the invention shown in Figures 2 and 3, an adhesive 33 for
securing the napkin 20 to the body of a user is applied to the body facing surface 45 of
the cover 42. The adhesive 33 can be applied to the body facing surface 45 by any
known technique in the art such as screen printing, extruding, spraying, or slot coating

The adhesive 33 may be applied uniformly over the body facing surface 45 in an amount of between about 35 gsm (g/m^2) to about 120 gsm, and more preferably between about 45 gsm to about 100 gsm. Alternatively, in one preferred embodiment of the present invention, the adhesive is applied in a plurality of distinct spaced lines or bands. For example, the adhesive may be applied in two or more spaced bands having a width of between about 3 mm and about 40 mm, and more preferably between about 10 mm and 25 mm. Each of the plurality of spaced adhesive bands may be spaced from each other by a distance between about 3 mm and about 60 mm apart, and more preferably between about 10 mm and about 25 mm apart. This distance between the adhesive bands is as measured from the longitudinal side edge (i.e. the side edge running in the length direction of the product) of one adhesive band to the adjacent side edge of the adjacent adhesive band. The adhesive is applied in an amount of between about 35 gsm (g/m^2) to about 120 gsm, and more preferably between about 45 gsm to about 100 gsm to form each of the adhesive bands or lines.

Prior to use of the article the adhesive 33 may be covered by a removable release member 47. The release member 47 preferably includes a release coating on the surface of the release member 47 that is in contact with the adhesive 33 to thereby facilitate the easy removal of the release member 47 prior to attachment of the napkin 20 to the body.

The release coating 49 may be a material based on polydimethylsiloxane chemistries, generically referred to as "silicones". The release coating 49 may also be a material based on other non-silicone chemistries, such as fluropolymers, alkyds, carbamates, urethanes, chromium complexes, acrylics, poly vinyl alcohols, or olefins.

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Another embodiment of the present invention, a sanitary napkin 20b, is shown in Figs 5 and 6. In the sanitary napkin 20b the barrier layer 55 is dimensioned so a portion 61 thereof extends outward relative to an terminal edge 63 of the cover 42. The adhesive 33 for attaching the article to the body is applied to a body facing surface 65 of the barrier portion 61. In one embodiment of the invention the adhesive 33 is applied in a uniform manner to the body facing surface 65 of the barrier portion 61 in an amount of between about 35 gsm (g/m^2) to about 120 gsm, and more preferably between about 45 gsm to about 100 gsm. Alternatively, in one preferred embodiment of the present invention, the adhesive is applied in a plurality of distinct spaced lines or bands to the body facing surface 65 of the barrier portion 61.

The napkin 20b is provided with a removable release member 47 to cover the adhesive 33 prior to use. As shown in Figs. 5 and 6, the release member 47 may be shaped such that it extends over the entire top surface of the cover 42 and barrier portion 61. Alternatively, the removable release member 47 may have a substantially oval shape (not shown) such that the release member 47 corresponds in shape to the barrier portion 61 and has a central open area (i.e. a central oval shaped through hole) that corresponds to the shape of the cover 42. In all other respects the embodiment of the invention shown in Figs 5 and 6 is the same as the embodiment described above with reference to Figs 2- 4b.

Main Body—Cover Layer

The cover layer 42 may be a relatively low density, bulky, high-loft non-woven

web material The cover layer 42 may be composed of only one type of fiber, such as polyester or polypropylene or it may include a mixture of more than one fiber The cover may be composed of bi-component or conjugate fibers having a low melting point component and a high melting point component. The fibers may be selected from a variety of natural and synthetic materials such as nylon, polyester, rayon (in combination with other fibers), cotton, acrylic fiber and the like and combinations thereof Preferably, the cover layer 42 has a basis weight in the range of about 10 gsm to about 75 gsm.

Bi-component fibers may be made up of a polyester layer and a an polyethylene sheath The use of appropriate bi-component materials results in a fusible non-woven fabric Examples of such fusible fabrics are described in U S Pat. No. 4,555,430 issued Nov 26, 1985 to Chicopee. Using a fusible fabric increases the ease with which the cover layer may be mounted to the absorbent layer and/or to the barrier layer

The cover layer 42 preferably has a relatively high degree of wettability, although the individual fibers comprising the cover may not be particularly hydrophilic The cover material should also contain a great number of relatively large pores This is because the cover layer 42 is intended to take-up body fluid rapidly and transport it away from the body and the point of deposition Therefore, the cover layer contributes little to the time taken for the napkin to absorb a given quantity of liquid (penetration time)

Advantageously, the fibers which make up the cover layer 42 should not lose their physical properties when they are wetted, in other words they should not collapse or lose their resiliency when subjected to water or body fluid. The cover layer 42 may be treated to allow fluid to pass through it readily The cover layer 42 also functions to transfer the fluid quickly to the other layers of the absorbent system 44 Thus, the cover layer 42 is

advantageously wettable, hydrophilic and porous. When composed of synthetic hydrophobic fibers such as polyester or bi-component fibers, the cover layer 42 may be treated with a surfactant to impart the desired degree of wettability.

In one preferred embodiment of the present invention the cover is made from a spunlace nonwoven material having from about 0 to about 100% polyester and from about 0 to about 100% rayon. The spunlace material may also be made from about 10% to about 65% rayon and from about 35% to about 90% polyester. In lieu of, and/or in combination with the polyester, polyethylene, polypropylene or cellulosic fiber may be used with the rayon. Optionally, the material used for the cover layer may include binders such as thermoplastic binders and latex binders.

Alternatively, the cover layer 42 can also be made of polymer film having large pores. Because of such high porosity, the film accomplishes the function of quickly transferring body fluid to the inner layers of the absorbent system. Apertured co-extruded films such as described available on sanitary napkins sold by Johnson & Johnson Inc. of Montreal, Canada could be useful as cover layers in the present invention.

The cover layer 42 may be embossed to the remainder of the absorbent system 44 in order to aid in promoting hydrophilicity by fusing the cover to the next layer. Such fusion may be effected locally, at a plurality of sites or over the entire contact surface of cover layer 42 and absorbent system 44. Alternatively, the cover layer 42 may be attached to the absorbent system 44 by other means such as by adhesion.

Main Body – Absorbent System

The absorbent system 44 may comprise a single layer of material or may

comprise multiple layers. In one embodiment, the absorbent system 44 is a blend or mixture of cellulosic fibers and superabsorbent disposed in and amongst fibers of that pulp.

Cellulosic fibers that can be used in the absorbent system 44 are well known in the art and include wood pulp, cotton, flax and peat moss. Wood pulp is preferred. Pulp can be obtained from mechanical or chemi-mechanical, sulfite, kraft, pulping reject materials, organic solvent pulps, etc. Both softwood and hardwood species are useful. Softwood pulps are preferred. It is not necessary to treat cellulosic fibers with chemical debonding agents, cross-linking agents and the like for use in the present material. Some portion of the pulp may be chemically treated as discussed in U.S. Pat. No. 5,916,670 to improved flexibility of the product. Flexibility of the material may also be improved by mechanically working the material or tenderizing the material.

The absorbent system 44 can contain any superabsorbent polymer (SAP), which SAPs are well known in the art. For the purposes of the present invention, the term "superabsorbent polymer" (or "SAP") refers to materials which are capable of absorbing and retaining at least about 10 times their weight in body fluids under a 0.5 psi pressure. The superabsorbent polymer particles of the invention may be inorganic or organic crosslinked hydrophilic polymers, such as polyvinyl alcohols, polyethylene oxides, crosslinked starches, guar gum, xanthan gum, and the like. The particles may be in the form of a powder, grains, granules, or fibers. Preferred superabsorbent polymer particles for use in the present invention are crosslinked polyacrylates, such as the product offered by Sumitomo Seika Chemicals Co., Ltd. of Osaka, Japan, under the designation of SA70N and products offered by Stockhausen Inc.

In one preferred embodiment of the invention, the absorbent system consists of fluff pulp and superabsorbent, wherein absorbent system includes between about 30 g to about 150 g of pulp and more preferably between about 40 g to about 50 g of pulp, and between about 1 g to about 3 g of superabsorbent, and more preferably between about 5 g and 1 g of superabsorbent. Preferably the absorbent system in this embodiment has a density of between about 0.04 g/cm³ to about 2 g/cm³, and more preferably between about 0.8 g/cm³ and 1.5 g/cm³.

In another preferred embodiment of the invention, the absorbent system consists essentially of fluff pulp and superabsorbent, wherein absorbent system includes between about 30 g to about 150 g of pulp and more preferably between about 40 g to about 50 g of pulp, and between about 1 g to about 3 g of superabsorbent, and more preferably between about 5 g and 1 g of superabsorbent. Preferably the absorbent system in this embodiment has a density of between about 0.04 g/cm³ to about 2 g/cm³, and more preferably between about 0.8 g/cm³ and 1.5 g/cm³.

In yet another preferred embodiment of the invention, the absorbent system consists of fluff pulp and superabsorbent, wherein absorbent system includes between about 80% to about 98% by weight of pulp and about 2% to about 20% by weight of superabsorbent, and more preferably between about 8% and about 15% superabsorbent. Preferably the absorbent system has a density of between about 0.04 g/cm³ to about 2 g/cm³, and more preferably between about 0.8 g/cm³ and 1.5 g/cm³.

In still another preferred embodiment of the invention, the absorbent system consists essentially of fluff pulp and superabsorbent, wherein absorbent system includes between about 80% to about 98% by weight of pulp and about 2% to about 20% by

weight of superabsorbent, and more preferably between about 8% and about 15% of superabsorbent. Preferably the absorbent system in this embodiment has a density of between about 0.04 g/cm³ to about 2 g/cm³, and more preferably between about 0.08 g/cm³ and 1.5 g/cm³.

5 In still another preferred embodiment of the invention, the absorbent system consists essentially of fluff pulp and superabsorbent, wherein absorbent system includes between about 80% to about 98% by weight of pulp and about 2% to about 20% by weight of superabsorbent, and more preferably between about 8% and about 15% of superabsorbent, and the absorbent system does not contain a carrier, bonding fibers, latex
10 adhesives, or other material for bonding the fibers of the absorbent system to one another. Preferably the absorbent system in this embodiment has a density of between about 0.04 g/cm³ to about 2 g/cm³, and more preferably between about 0.08 g/cm³ and 1.5 g/cm³.

15 Main Body-Barrier Layer

Underlying the absorbent layer 44 is a barrier layer 50 comprising liquid-impervious film material so as to prevent liquid that is entrapped in the absorbent system 44 from egressing the sanitary napkin and staining the wearer's undergarment. The barrier layer 50 is preferably made of polymeric film, although it may be made of liquid
20 impervious, air-permeable material such as repellent-treated non-woven or micropore films or foams.

The barrier layer may be breathable, i.e., permits vapor to transpire. Known materials for this purpose include nonwoven materials and microporous films in which

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microporosity is created by, inter alia, stretching an oriented film. Single or multiple layers of permeable films, fabrics, melt-blown materials, and combinations thereof that provide a tortuous path, and/or whose surface characteristics provide a liquid surface repellent to the penetration of liquids may also be used to provide a breathable backsheet.

5 The cover layer 42 and the barrier layer 50 are joined along their marginal portions so as to form an enclosure or flange seal that maintains the absorbent layer 44 captive.

Any or all of the cover, absorbent layer, transfer layer, backsheet layer, and adhesive layers may be colored. Such coloring includes, but is not limited to, white, black, red, yellow, blue, orange, green, violet, and mixtures thereof. Color may be
10 imparted according to the present invention through dying, pigmentation, and printing. Colorants used according to the present invention include dyes and inorganic and organic pigments. The dyes include, but are not limited to, anthraquinone dyes (Solvent Red 111, Disperse Violet 1, Solvent Blue 56, and Solvent Green 3), Xanthene dyes (Solvent Green 4, Acid Red 52, Basic Red 1, and Solvent Orange 63), azine dyes (Jet black), and the like.
15 Inorganic pigments include, but are not limited to, titanium dioxide (white), carbon black (black), iron oxides (red, yellow, and brown), chromium oxide (green), ferric ammonium ferrocyanide (blue), and the like.

Organic pigments include, but are not limited to, diarylide yellow AAOA (Pigment Yellow 12), diarylide yellow AAOT (Pigment Yellow 14), phthalocyanine blue
20 (Pigment Blue 15), lithol red (Pigment Red 49 1), Red Lake C (Pigment Red), and the like.

The absorbent article may include other known materials, layers, and additives, such as, foam, net-like material, perfumes, medicaments or pharmaceutical agents,

moisturizers, odor control agents, and the like. The absorbent article can optionally be embossed with decorative designs.

The absorbent article may be packaged as unwrapped absorbent articles within a carton, box or bag. The consumer withdraws the ready-to-use article as needed. The absorbent article may also be individually packaged (each absorbent article encased within an overwrap).

Also contemplated by the present invention are asymmetrical and symmetrical absorbent articles having parallel longitudinal edges, dog bone- or peanut-shaped, as well as articles having a tapered construction for use with thong-style undergarments.

Adhesive

The adhesive 33 employed in the present invention may be any pressure sensitive adhesive, and preferably a hot melt adhesive, that possesses the specific rheological properties set forth in further detail below. The rheological analysis of an adhesive is a method of determining the viscoelastic properties polymers. Rheometer devices for determining rheological properties of adhesives are well known to those skilled in the art. For example, a Rheometrics Solids Analyzer II manufactured by Rheometrics Inc., of Piscataway N.J. was used to analyze the adhesives according to the present invention to determine the rheological properties thereof.

It is critical to the present invention that the adhesive 33 have the following properties: (i) a ratio of the Dynamic Shear Storage Modulus (G') measured at 37° C and 100 radians/s to Dynamic Shear Storage Modulus (G') at 37° C and 0.1 radians/second.

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that is greater than or equal to 4.5, and (ii) a glass transition temperature T_g between -20°C and 15°C

The above described properties can be represented by the following formulas

$$G'_{[100 \text{ rad/sec @ } 37^\circ\text{C}]} / G'_{[0.1 \text{ rad/sec @ } 37^\circ\text{C}]} \geq 4.5, \text{ and}$$

5 $-20^\circ\text{C} \leq T_g (^\circ\text{C}) \leq 15^\circ\text{C}.$

The adhesives employed in the present invention preferably have a T_g value of between -20°C and 15°C , more preferably between -20°C and 0° , and most preferably between -20°C and -10°C .

The adhesives employed in the present invention preferably have a $G'_{[100 \text{ rad/sec @ } 37^\circ\text{C}]} / G'_{[0.1 \text{ rad/sec @ } 37^\circ\text{C}]}$ value of greater than or equal to 4.5, more preferably between 4.5 and 7, and most preferably between 4.8 and 6

The adhesive 33 employed in the article according to the present invention preferably has more than about 50% by weight of a liquid plasticizer, preferably more than about 65% by weight of a liquid plasticizer, and most preferably more than about 80% by weight of a liquid plasticizer. Suitable liquid plasticizers may include white oils, mineral oils, paraffinic process oils, polyethylene glycol, glycerin, polypropylene glycol, naphthenic oils, and liquid polyterpenes. The liquid plasticizer preferably has a molecular weight of less than 1000 g/mole, more preferably less than 750 g/mole and most preferably less than 500 g/mole.

20 The adhesive 33 used in the article according to the present invention is preferably an adhesive based upon block copolymers, preferably, those which may include linear or radial co-polymer structures having the formula $(A-B)_x$ wherein block A is a polyvinylarene block, block B is a poly(monoalkenyl) block, x denotes the number of

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polymeric arms, and wherein x is an integer greater than or equal to one. Suitable block A polyvinylarenes include, but are not limited to Polystyrene, Polyalpha-methylstyrene, Polyvinyltoluene, and combinations thereof. Suitable Block B poly(monoalkenyl) blocks include, but are not limited to conjugated diene elastomers such as for example

5 polybutadiene or polyisoprene or most preferably hydrogenated elastomers such as ethylene-butylene or ethylene-propylene or polyisobutylene, or combinations thereof, specifically, adhesives consisting of styrene-ethylene-butylene-styrene (SEBS) block copolymer and mineral oils, paraffinic or naphthenic process oils, and optionally a suitable tackifying resins include natural and modified resins, glycerol and pentaerythritol
10 esters of natural and modified resins, polyterpene resins, copolymers and terpolymers of natural terpenes, phenolic modified terpene resins and the hydrogenated derivatives thereof, aliphatic petroleum resins and the hydrogenated derivatives thereof, aromatic petroleum resin and the hydrogenated derivatives thereof; and aliphatic/aromatic petroleum resins and the hydrogenated derivatives thereof, and combinations thereof

15 Adhesives of the type described above are commercially available from National Starch and Chemical, Bridgewater, NJ. Specific examples of adhesives particularly useful for the present invention include adhesives identified by product codes 95-2(34-548B) and 85-2 (34-547B) commercially available from National Starch and Chemical, Bridgewater, NJ.

20 Adhesive 85-2 (34-547B) was measured to have a $T_g(^{\circ}\text{C})$ of -18°C and a $G'_{[100 \text{ rad/sec} @ 37^{\circ}\text{C}]} / G'_{[0.1 \text{ rad/sec} @ 37^{\circ}\text{C}]}$ value of 4.9. Adhesive 95-2 (34-548B) was measured to have a $T_g(^{\circ}\text{C})$ of -18°C and a $G'_{[100 \text{ rad/sec} @ 37^{\circ}\text{C}]} / G'_{[0.1 \text{ rad/sec} @ 37^{\circ}\text{C}]}$ value of 5.5. These properties are shown in the graph of Fig. 5.

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EXAMPLE

A specific example of a body-attachable sanitary napkin according to the present invention is described below.

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Example #1 - A body-attachable sanitary napkin according to the present invention was constructed including a 30 gsm cover nonwoven material commercially available from Polymer Group, Inc , North Charleston, S C as product code 65130 The napkin further included an absorbent core arranged below the cover, the absorbent core including (i) 420
10 gsm calendered fluff pulp, the pulp commercially available from Rayonier, Inc , Atlanta, Georgia as product code Rayfloc JLDE, and (ii) 93 gsm of Aquakeep SA70 superabsorbent, commercially available from Sumitomo Seika Chemicals Co , Ltd. of Osaka, Japan The fluff pulp portion of the core had an oval shape and measured 180 mm (length) x 60 mm (wide) The superabsorbent was applied down the center of the
15 pulp core in a central strip measuring 180 mm x 30 mm. The core had a final thickness of 5.3 mm. The napkin contained 3.6 g of pulp and 5 g of superabsorbent and the core had a density of 0.13 g/cm³ The napkin further included a 0.9 mil polyethylene film barrier commercially available from Pliant Corporation, Schaumburg, Illinois, as product code XP3492B The cover and barrier were constructed to extend beyond the core such
20 that the product had an oval shape with product dimensions of 240 mm (length) x 95 mm (wide) The various layers of the article were adhered to one another using commercially available hot melt adhesives such as those available from H B Fuller Adhesive for adhering the article to the body was applied to a body-facing surface of the cover in two

20 mm wide lines spaced 32 mm apart, the adhesive was applied by slot coating directly to the cover in an amount of 55 gsm. The adhesive applied to the body-facing surface of the cover is commercially available as product code 85-2 (34-547B) from National Starch and Chemical, Bridgewater, NJ

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Test Method for Determining Average Removal Force

In order for the absorbent article according to the present invention to securely attach to the body, and remain securely adhered to the body during use, the article must have a sufficient removal force. Absorbent articles according to the present invention will have a removal force in the range of 2.5 g/per mm width of adhesive to 4.5 g/per mm width of adhesive and more preferably between 3.0 g/per mm width of adhesive to 4.0 g/per mm width of adhesive according to the test method set forth in detail below.

The test method for determining average removal force was carried out using a Cheminstruments Adhesion/Release Tester AR1000, available from Cheminstruments,

15 Fairfield Ohio. The test method is set forth in detail below.

(1) A low density polyethylene (LDPE) test plate measuring 3" wide, 6" long and 1/8" thick, was constructed from LDPE commercially available from McMaster-Carr, New Brunswick. The LDPE comes in 48" x 48" sheets and was cut to form the LDPE test plate.

20 (2) The LDPE test plate was secured to the test bed of the apparatus using conventional masking tape.

(3) The product was cut lengthwise using a JDC Precision Sample Cutter, available from Thwing-Albert Instrument Company, Philadelphia, PA, from a portion of

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the product containing the body facing adhesive, to obtain a 1" wide product sample,
The 1" sample was taken from a product constructed as described in Example #1, the 1" sample was taken at a location so as to include one of the 20 mm wide adhesive lines

(4) The cut product sample was placed body-facing adhesive side down on the

5 LDPE test plate

(5) A small masking tape tab of about 1" was applied to one end of the product sample.

(6) A 4.5 pound hand held roller was passed over the product sample to secure it to the test plate, a single forward and back pass was made over the product at a speed of about 12 inches per minute to ensure contact between the sample and the plate Care should be taken to simply pass the roller over the sample without applying additional manual force The hand roller is commercially available from Chemsultants International, 9349 Hamilton Drive, Mentor Ohio 44061-1118 The manner of using such hand rollers is well know to those skilled in the art

15 (7) The masking tape tab is inserted into the grip of the instrument and clamped.

(8) The instrument is started and the removal force in grams force is recorded.

(9) The above described steps are repeated for nine additional products so that a total of ten products are tested The average force is calculated and recorded

(10) Using the calculated average force the average removal force on a per mm width of adhesive basis is determined The product sample for Example #1 was cut from the product to include a single 20 mm wide adhesive line Thus, for Example #1, the recorded average force was divided by 20 mm The calculated average removal force on

a per unit of adhesive basis for Example #1 was determined to be 3.42 g/mm width of adhesive

Removal Pain Test

- 5 A removal pain test was utilized to evaluate pain during removal of a sanitary article according to the present invention from the body. Product samples having a construction as described in Example #1 were provided to 30 women. Two (2) product samples were given to each woman. Each of the women were instructed to adhere the product to the body with the center of the product arranged over the vaginal opening.
- 10 Each of the women were provided the following instructions:
- (1) Maximum wear time is four (4) hours,
 - (2) Product cannot be worn overnight,
 - (3) Product is for one-time use only, cannot be reworn,
 - (4) Upon removal of each product, record the "pain upon removal" based
- 15 upon a 0-10 scale, where 0-1 is no pain, 1-2.5 is no pain but can be felt, 2.5-5 is slight pain, 5-8 is painful, and 8-10 is very painful,
- (5) A total was determined by adding all the ratings and the average rating
- was determined by dividing the total by the number of ratings.
- The average pain rating for the absorbent article described in Example #1 was 4.0.
- 20 In view above, absorbent articles according to the present invention will remain securely in place during use yet will present moderate to low pain to the user upon removal of the article.

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From the foregoing description, one skilled in the art can ascertain the essential characteristics of this invention, and without departing from the spirit and scope thereof, can make various changes and modifications. Embodiments set forth by way of illustration are not intended as limitations on the variations possible in practicing the

5 present invention

NOVEDAD DE LA INVENCION**REIVINDICACIONES**

- 5 1 - Un artículo absorbente que se une al cuerpo, que comprende una superficie orientada hacia el cuerpo, una superficie orientada hacia la prenda, un adhesivo aplicado a dicha superficie orientada hacia el cuerpo para asegurar selectivamente dicho artículo al cuerpo de una usuaria, en donde dicho adhesivo tiene las siguientes propiedades $G'_{[100 \text{ rad/seg @ } 37^{\circ}\text{C}]} / G'_{[0.1 \text{ rad/seg @ } 37^{\circ}\text{C}]} \geq 4.5$, y $-20^{\circ}\text{C} \leq T_g (^{\circ}\text{C}) \leq 15^{\circ}\text{C}$
- 10 2 - El artículo absorbente de conformidad con la reivindicación 1, caracterizado además porque el adhesivo tiene un valor $G'_{[100 \text{ rad/seg @ } 37^{\circ}\text{C}]} / G'_{[0.1 \text{ rad/seg @ } 37^{\circ}\text{C}]}$ de entre 4.5 y 7
- 15 3 - El artículo absorbente de conformidad con la reivindicación 2, caracterizado además porque el adhesivo tiene un valor $G'_{[100 \text{ rad/seg @ } 37^{\circ}\text{C}]} / G'_{[0.1 \text{ rad/seg @ } 37^{\circ}\text{C}]}$ de entre 4.8 y 6
- 20 4 - El artículo absorbente de conformidad con la reivindicación 1, caracterizado además porque dicho adhesivo tiene un valor T_g de entre -20°C y 15°C
- 5 - El artículo absorbente de conformidad con la reivindicación 4, caracterizado además porque dicho adhesivo tiene un valor T_g de entre -20°C y 0°C

6 - El artículo absorbente de conformidad con la reivindicación 5, caracterizado además porque dicho adhesivo tiene un valor Tg de entre -20°C y 10°C

5 7 - El artículo absorbente de conformidad con la reivindicación 1, caracterizado además porque dicho adhesivo se aplica a dicha superficie orientada hacia el cuerpo en una pluralidad de líneas separadas

8 - El artículo absorbente de conformidad con la reivindicación 7, caracterizado además porque cada una de dichas líneas tiene un ancho en la escala de aproximadamente 3 mm a aproximadamente 40 mm

10 9 - El artículo absorbente de conformidad con la reivindicación 8, caracterizado además porque cada una de dichas líneas tiene un ancho en la escala de aproximadamente 10 mm a aproximadamente 25 mm

10 - El artículo absorbente de conformidad con la reivindicación 7, caracterizado además porque cada una de dicha pluralidad de líneas adhesivas separadas, están separadas entre sí por una distancia de entre aproximadamente 3 mm y aproximadamente 60 mm

11 - El artículo absorbente de conformidad con la reivindicación 10, caracterizado además porque cada una de dicha pluralidad de líneas adhesivas separadas están separadas entre sí por una distancia de entre aproximadamente 10 mm y aproximadamente 25 mm

12 - El artículo absorbente de conformidad con la reivindicación 1, caracterizado además porque dicho adhesivo se aplica sustancialmente sobre

toda la superficie que está orientada hacia el cuerpo en una cantidad de entre aproximadamente 35 gsm y 120 gsm

13 - El artículo absorbente de conformidad con la reivindicación 1, caracterizado además porque dicho adhesivo se aplica sustancialmente sobre
5 toda la superficie orientada hacia el cuerpo en una cantidad de entre aproximadamente 45 gsm y 100 gsm

14 - El artículo absorbente de conformidad con la reivindicación 7, caracterizado además porque dichas líneas adhesivas se aplican a la superficie que está orientada hacia el cuerpo en una cantidad de entre
10 aproximadamente 45 gms y 100 gms

15 - El artículo absorbente de conformidad con la reivindicación 1, caracterizado además porque dicho artículo tiene una fuerza de remoción promedio de entre aproximadamente 2 5 g/por mm de ancho de adhesivo a aproximadamente 4 5 g/por mm de ancho de adhesivo

16 - El artículo absorbente de conformidad con la reivindicación 15, caracterizado además porque dicho artículo tiene una fuerza de remoción promedio de entre aproximadamente 3 0 g/por mm de ancho de adhesivo a aproximadamente 4 0 g/por mm de ancho de adhesivo

17 - Una toalla sanitaria que se une al cuerpo, que comprende
20 una capa de cubierta, una capa de barrera, una capa absorbente dispuesta entre dicha capa de cubierta y dicha capa de barrera, un adhesivo aplicado a la superficie de la toalla que está orientada hacia el cuerpo, para asegurar selectivamente dicho artículo al cuerpo de una usuaria, en donde dicho

adhesivo tiene las siguientes propiedades $G'_{[100 \text{ rad/seg @ } 37^\circ\text{C}]}/G'_{[0.1 \text{ rad/seg @ } 37^\circ\text{C}]}$
 ≥ 4.5 , y $-20^\circ\text{C} \leq T_g (^\circ\text{C}) \leq 15^\circ\text{C}$

18 - La toalla sanitana que se une al cuerpo de conformidad con la reivindicación 17, caracterizada además porque dicha capa absorbente
 5 consiste esencialmente en pulpa esponjosa y superabsorbente

19 - La toalla sanitana que se une al cuerpo de conformidad con la reivindicación 18, caracterizada además porque dicha capa absorbente incluye entre aproximadamente 30 g a aproximadamente 150 g de pulpa y aproximadamente 1 g a aproximadamente 3 g de superabsorbente

10 20 - La toalla sanitana que se une al cuerpo de conformidad con la reivindicación 19, caracterizada además porque dicha capa absorbente incluye entre aproximadamente 40 g a aproximadamente 50 g de pulpa y aproximadamente 5 g a aproximadamente 1 g de superabsorbente

21 - La toalla sanitana que se une al cuerpo de conformidad con la reivindicación 17, caracterizada además porque dicha capa absorbente incluye entre aproximadamente 80% a aproximadamente 98% en peso de pulpa y entre aproximadamente 2% a aproximadamente 20% en peso de superabsorbente
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22 - La toalla sanitana que se une al cuerpo de conformidad con la reivindicación 21, caracterizada además porque dicha capa absorbente incluye entre aproximadamente 8% y aproximadamente 15% en peso de superabsorbente
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23 - Un artículo absorbente que se une al cuerpo, que comprende una capa de cubierta, una capa de barrera, una capa absorbente dispuesta entre dicha capa de cubierta y dicha capa de barrera, un adhesivo aplicado a una superficie orientada hacia el cuerpo de la toalla para asegurar selectivamente dicho artículo al cuerpo de una usuaria, en donde dicho adhesivo tiene las siguientes propiedades $G'_{[100 \text{ rad/seg @ } 37^{\circ}\text{C}]} / G'_{[0.1 \text{ rad/seg @ } 37^{\circ}\text{C}]}$ entre 4.8 y 6, y un valor Tg de entre -20°C y -10°C , dicho artículo tiene una fuerza de remoción promedio de entre 3.0 g/ por mm de ancho de adhesivo y 0.4 g/mm de ancho de adhesivo

10 24 - El artículo absorbente de conformidad con la reivindicación 23, caracterizado además porque dicha capa absorbente consiste en pulpa esponjosa y superabsorbente

25 - El artículo absorbente de conformidad con la reivindicación 24, caracterizado además porque dicha capa absorbente no contiene un vehículo, fibras aglutinantes, adhesivos de caucho, u otro material para unir entre sí las fibras de dicha capa absorbente

26 - El artículo absorbente de conformidad con la reivindicación 24, caracterizado además porque la capa absorbente tiene una densidad de entre aproximadamente 0.04 g/cm^3 a aproximadamente 2 g/cm^3 , y más preferiblemente de entre aproximadamente 0.8 g/cm^3 y 15 g/cm^3

27 - El artículo absorbente de conformidad con la reivindicación 23, caracterizado además porque el artículo absorbente es uno de una toalla sanitaria, un protector, o un artículo para la incontinencia en adultos

CLAIMS

We claim

1 A body-attachable absorbent article comprising

5 a body-facing surface,

a garment-facing surface,

an adhesive applied to said body-facing surface for selectively securing said article to a body of a user, wherein said adhesive has the following properties

10 $G'_{[100 \text{ rad/sec} @ 37^\circ \text{C}]} / G'_{[0.1 \text{ rad/sec} @ 37^\circ \text{C}]} \geq 4.5$, and
 $-20^\circ \text{C} \leq T_g (^\circ \text{C}) \leq 15^\circ \text{C}$

2 The absorbent article according to claim 1, wherein said adhesive has a $G'_{[100 \text{ rad/sec} @ 37^\circ \text{C}]} / G'_{[0.1 \text{ rad/sec} @ 37^\circ \text{C}]}$ value of between 4.5 and 7

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3 The absorbent article according to claim 2, wherein said adhesive has a $G'_{[100 \text{ rad/sec} @ 37^\circ \text{C}]} / G'_{[0.1 \text{ rad/sec} @ 37^\circ \text{C}]}$ value of between 4.8 and 6

4 The absorbent article according to claim 1, wherein said adhesive has a T_g value of
 20 between -20°C and 15°C

5 The absorbent article according to claim 4, wherein said adhesive has a T_g value of between -20°C and 0°C

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6 The absorbent article according to claim 5, wherein said adhesive has a Tg value of between -20° C and -10° C.

7 The absorbent article according to claim 1, wherein said adhesive is applied to said
5 body facing surface in a plurality of spaced lines

8 The absorbent article according to claim 7, wherein each of said lines has a width in the range of about 3 mm to about 40 mm.

9 The absorbent article according to claim 8, wherein each of said lines has a width in
10 the range of about 10 mm to about 25 mm

10 The absorbent article according to claim 7, wherein each of the plurality of spaced
adhesive lines are spaced from each other by a distance of between about 3 mm and about
15 60 mm.

11 The absorbent article according to claim 10, wherein each of the plurality of the
plurality of spaced adhesive lines are spaced from each other by a distance of between
about 10 mm and about 25 mm.

20

12 The absorbent article according to claim 1, wherein said adhesive is applied
substantially over said entire body facing surface in an amount between about 35 gm and
120 gm.

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13 The absorbent article according to claim 1, wherein said adhesive is applied substantially over said entire body facing surface in an amount between about 45 gsm and 100 gsm

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14 The absorbent article according to claim 7, wherein said adhesive lines are applied to the body facing surface in an amount between about 45 gsm and 100 gsm

15 The absorbent article according to claim 1, wherein said article has an average
10 removal force of between about 2.5 g/per mm width of adhesive to about 4.5 g/per mm width of adhesive

16 The absorbent article according to claim 15, wherein said article has an average
removal force of between about 3.0 g/per mm width of adhesive to about 4.0 g/per mm
15 width of adhesive.

17 A body-attachable sanitary napkin comprising

a cover layer;

a barrier layer;

20 an absorbent layer arranged between said cover layer and said barrier layer;

an adhesive applied to a body-facing surface of the napkin for selectively securing said article to a body of a user, wherein said adhesive has the following properties

$$G' [100 \text{ rad/sec @ } 37^\circ \text{ C}] / G' [0.1 \text{ rad/sec @ } 37^\circ \text{ C}] \geq 4.5, \text{ and}$$

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$-20^{\circ}\text{C} \leq T_g (^{\circ}\text{C}) \leq 15^{\circ}\text{C}$.

18 The body-attachable sanitary napkin according to claim 17, wherein said absorbent layer consists essentially of fluff pulp and superabsorbent

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19 The body-attachable sanitary napkin according to claim 18, wherein said absorbent layer includes between about 30 g to about 150 g of pulp and about 1 g to about 3 g of superabsorbent

10 20 The body-attachable sanitary napkin according to claim 19, wherein said absorbent layer includes between about 40 g to about 50 g of pulp and about 5 g to about 1 g of superabsorbent.

15 21 The body-attachable sanitary napkin according to claim 17, wherein said absorbent layer includes between about 80% to about 98% by weight of pulp and between about 2% to about 20% by weight of superabsorbent

22 The body attachable sanitary napkin according to claim 21, wherein said absorbent layer includes between about 8% and about 15% by weight of superabsorbent.

20

23 A body-attachable absorbent article comprising

a cover layer;

a barrier layer;

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an absorbent layer arranged between said cover layer and said barrier layer;
an adhesive applied to a body-facing surface of the napkin for selectively securing
said article to a body of a user, wherein said adhesive has the following properties

- 5 $G'_{[100 \text{ rad/sec @ } 37^\circ \text{ C}]} / G'_{[0.1 \text{ rad/sec @ } 37^\circ \text{ C}]}$ between 4.8 and 6, and
a Tg value between -20° C and -10° C ,
said article having an average removal force of between 3.0 g/per mm width of
adhesive and 4.0 g/mm width of adhesive

- 10 24 The absorbent article according to claim 23, wherein said absorbent layer consists of
fluff pulp and superabsorbent.

- 25 The absorbent article according to claim 24, wherein said absorbent layer does not
contain a carrier, binding fibers, latex adhesives, or other material for binding fibers of
15 said absorbent layer to one another

26. The absorbent article according to claim 24, wherein the absorbent layer has a
density of between about 0.04 g/cm^3 to about 0.2 g/cm^3 , and more preferably between
about 0.08 g/cm^3 and 0.15 g/cm^3

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- 27 The absorbent article according to claim 23, wherein the absorbent article is one of a
sanitary napkin, liner, or adult incontinence article

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ABSTRACT

An absorbent article including an adhesive on a body-facing surface of the article for securing the article to the body, the adhesive having the following properties G'_{100}

5 $\text{rad/sec @ } 37^\circ \text{C} / G'_{0.1 \text{ rad/sec @ } 37^\circ \text{C}} \geq 4.5$, and $-20^\circ \text{C} \leq T_g (^\circ\text{C}) \leq 15^\circ \text{C}$

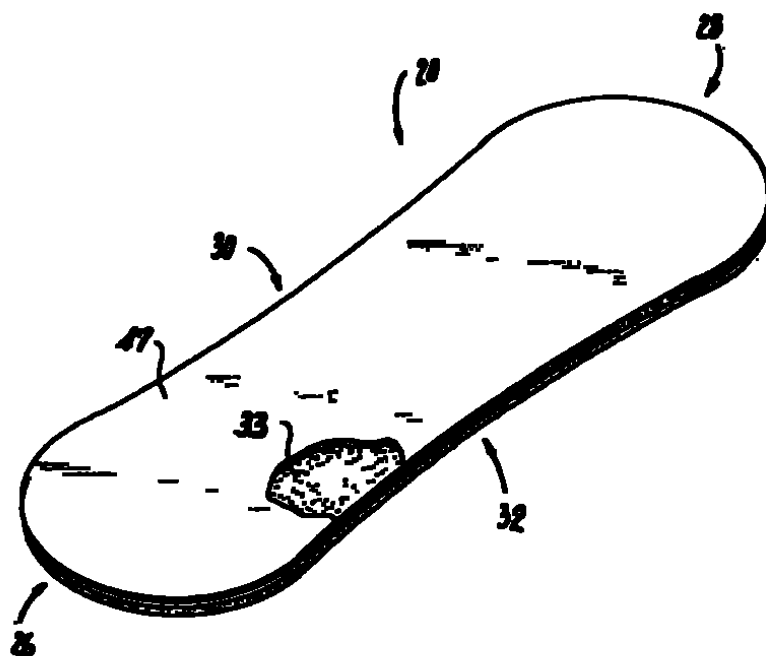
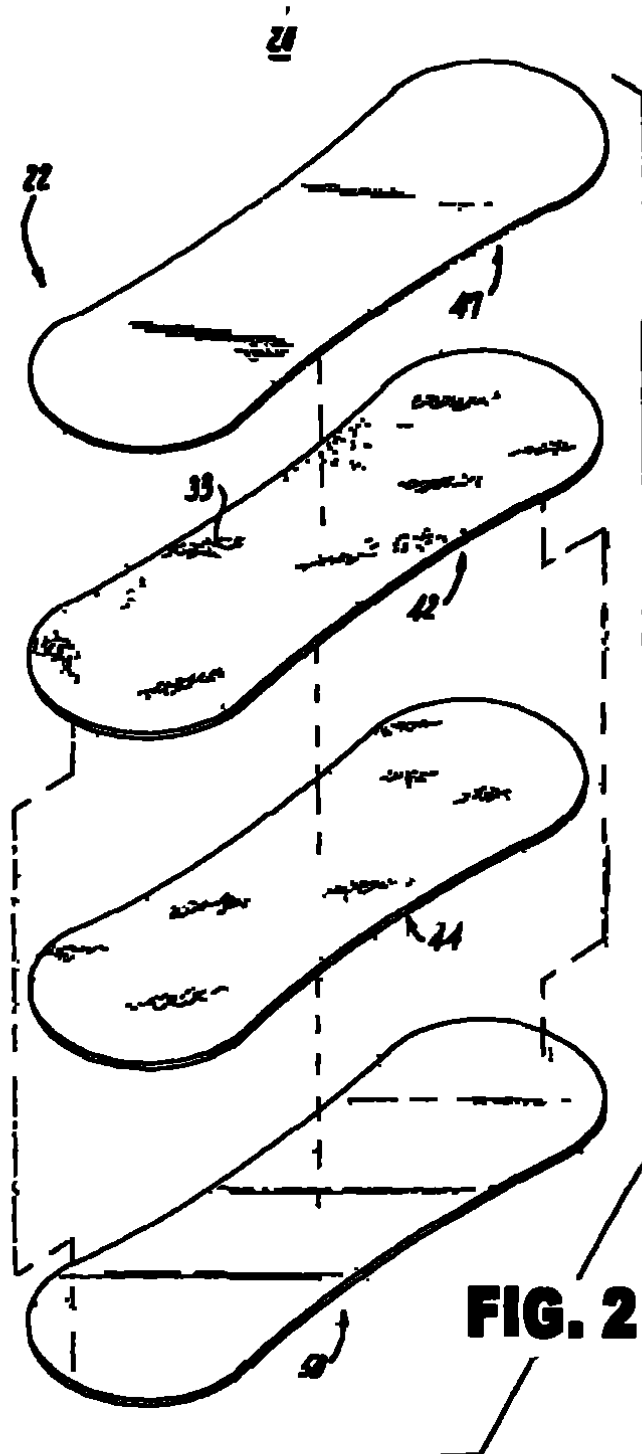


FIG. 1

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FIG. 3

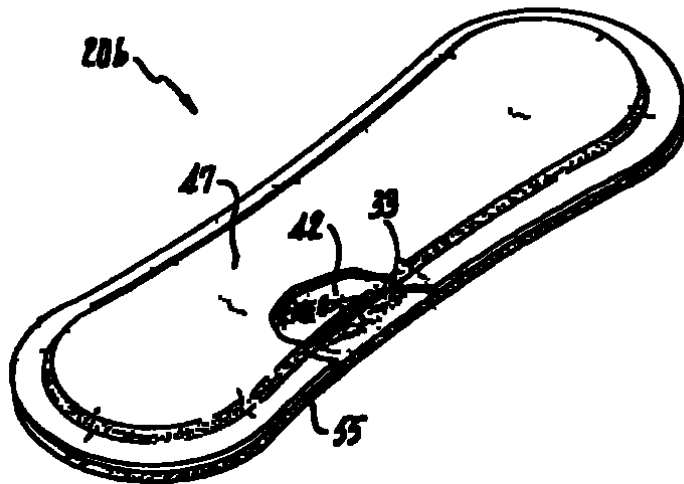
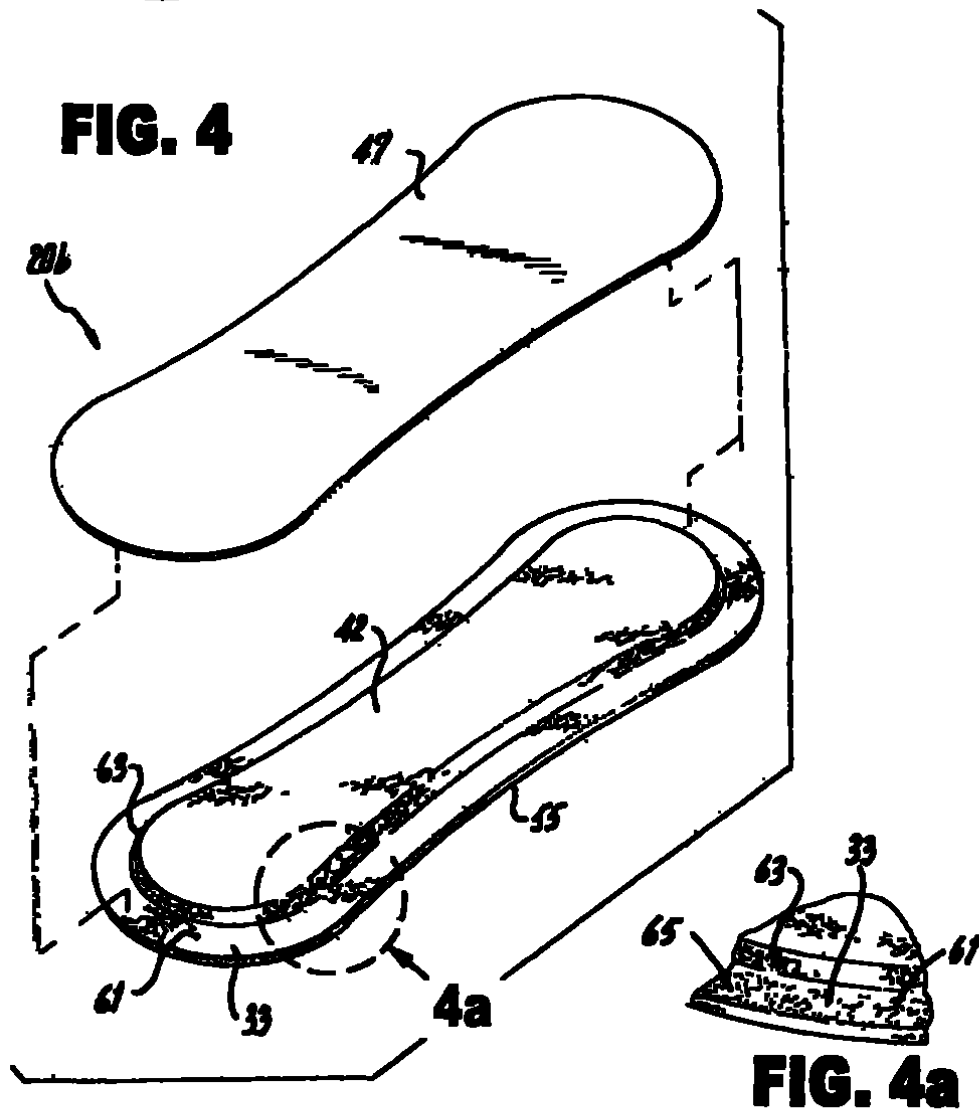


FIG. 4



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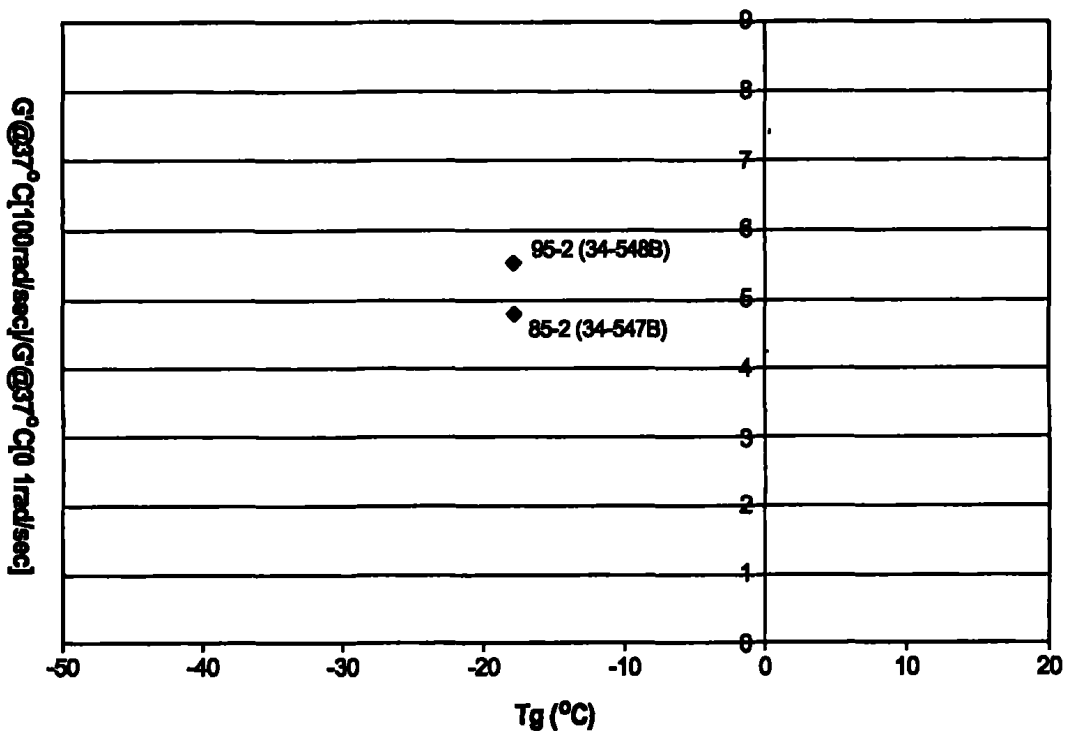


FIG. 5

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REPUBLICA DE COLOMBIA
SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

Bogotá,
2020

Doctor(a)
ESCOBAR URIBE JIMENA
Apoderado(a) y/o Representante de
MCNEIL-PPC, INC

REFERENCIA	Radicación No 6 110150
	Trámite 2
	Evento 1
	Actuación 430
	Oficio No 14598

Como resultado del examen de forma, realizado con fundamento en el artículo 38 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica que

1 Debe allegar copia del documento en que consta la cesión del derecho a la patente otorgado por el(los) inventor(s) al(los) solicitante(s) o a su(s) causante(s) (art 26-k, Dec 486/2000)

2 De la figura característica enviar por duplicado arte final en tamaño 12 x 12 cm

En cumplimiento del artículo 39 de la Decisión 486, se le requiere para que dentro del término de dos (2) meses siguientes a la fecha de notificación del presente oficio, complete los requisitos anteriormente enunciados. En caso de no dar cumplimiento al presente requerimiento, la solicitud se considerará abandonada y perderá su prelación.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Unica No 10 de 2001.

ALIX CARMENZA CESPEDES DE VERGEL
Jefe de la división de Nuevas Creaciones

El anterior requerimiento fue notificado por fijación en lista de fecha 21 DIC 2006
adpal