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SANITARY NAPKIN INDIVIDUALLY PACKAGED IN CASE

This invention relates generally to sanitary napkins or menstruation pads individually packaged in a case or envelope and, more particularly, to sanitary napkins so configured to be easily taken out from their cases.

Japanese Laid-Open Utility Model Application No. Hei7-33314 discloses a sanitary napkin including a pair of side flaps formed along transversely opposite side edges of a liquid-absorbent core each having first and second wings laterally extending from each of the side flaps. The first pair of wings lie adjacent a front end of the sanitary napkin and the second pair of wings lie adjacent a rear end of the sanitary napkin. On a rear surface of the sanitary napkin, a transversely middle region and said first pair of wings are applied with adhesive so that the sanitary napkin may be fixed to an inner surface of a crotch zone of the shorts worn by the wearer by means of the adhesive on the middle region. The first pair of wings are folded along respective side edges of the crotch zone onto an outer surface of the shorts and fixed thereto by means of adhesive. The first pair of wings cover the side edges of the shorts to prevent them from being smeared with menstrual discharge and at the same time

to prevent the sanitary napkin from being deformation such as distortion. The second pair of wings cover substantially the entire hip zone of the shorts so as to prevent the shorts from being smeared with menstrual discharge possibly flowing toward the hip zone of the wearer. When such known sanitary napkin is individually packaged in a case, the first and second pairs of wings are folded inwardly of the sanitary napkin. The adhesive zones on the first pair of wings are protectively covered with a first release sheet common to the two adhesive zones and the adhesive zones on the middle region of the sanitary napkin are protectively covered with a second release sheet. The sanitary napkin is folded in three layers with its topsheet inside so that the uppermost layer is defined by a front end of the sanitary napkin and the lowermost layer is defined by a rear end of the sanitary napkin.

The above-mentioned known sanitary napkin can reliably catch menstrual discharge since the sanitary napkin is fixed at the transversely middle region to the inner surface of the shorts and no shift of the sanitary napkin occurs relative to the crotch zone of the shorts not only longitudinally but also transversely of the shorts. However, the second pair of wings extending transversely of the sanitary napkin are not

fixed to the shorts and may be distorted or folded due to the movement of the wearer's hip.

As a result, the intended function of these wings can not be obtained and/or the expected good feeling to wear the sanitary napkin is deteriorated due to the distorsion or folding of these wings. Additionally, when this sanitary napkin is put on, operation of taking the sanitary napkin out from the case and operation of peeling the release sheets off from the sanitary napkin must be separately carried out by the wearer. As additional inconvenience, at least three separate wastes, i.e., the empty case, the first and second release sheets are left for disposal.

In view of the problem as has been mentioned above, it is a principal object of the invention to improve the sanitary napkin having the first and second pairs of wings and individually packaged in the case like the above-mentioned known sanitary napkin so that the respective pairs of wings may reliably achieve their functions and at the same time the sanitary napkin may be easily taken out from the case.

The object set forth above is achieved, according to the invention, by a sanitary napkin individually packaged in

a case comprising said case and said sanitary napkin individually packaged in said case, said sanitary napkin comprising a liquid-permeable topsheet, a liquid-impermeable backsheet and a liquid-absorbent core disposed therebetween, said absorbent core being formed along its transversely opposite side edges with side flaps each having a first wing laterally extending at a location adjacent a longitudinally front end edge of said absorbent core and a second wing laterally extending at a location adjacent a longitudinally rear end edge of said absorbent core, and said sanitary napkin being folded in three layers after said first and second wings having been folded back onto an upper surface of said topsheet with said topsheet inside so that the uppermost layer of said three layers is defined by a longitudinally front section of said sanitary napkin and the lowermost layer of said three layers is defined by a longitudinally rear section of said sanitary napkin, characterized by that: said case comprises sheet material placed in direct or indirect contact with said sanitary napkin and folded together with said sanitary napkin wherein said sheet material is dimensioned so as to extend outward beyond a peripheral edge of the folded napkin; said first and second pairs of wings are formed on their rear surfaces with independent adhesive

zones, respectively, wherein said first pair of adhesive zones are covered with a first release sheet and said second pair of adhesive zones are covered with a second release sheet; and said first and second release sheets are fixed to each other along their mutually overlapping regions and said first release sheet has a portion extending rearward beyond the longitudinally rear end edge of said sanitary napkin and fixed to an inner surface of said sheet material.

According to a preferred embodiment of the invention, three layers of said sheet material constituting the case which are formed by folding said sanitary napkin in three layers together with said sheet material are separably bonded one to another along portions extending outward beyond transversely opposite side edges of said sanitary napkin folded in three layers and placed one upon another; and wherein said first release sheet has a rigidity higher than that of said sheet material and has a portion extending rearward beyond the longitudinally rear end edge of said sanitary napkin folded in three layers, said portion being partially fixed to an inner surface of said sheet material and extending rearward also beyond a longitudinally rear end edge of said sheet material.

According to another preferred embodiment of the

invention, said first and second release sheets are replaced by a single continuous release sheet.

According to still another preferred embodiment of the invention, said sanitary napkin has, in addition to said adhesive zones formed on said first and second pairs of wings, adhesive zones on a lower surface of the backsheet along a transversely middle region of said sanitary napkin and these additional adhesive zones are covered with a third release paper sheet fixed to an inner surface of said sheet material independently of said first and second release sheets.

Fig. 1 is a perspective view showing a sanitary napkin individually packaged in a case showing an embodiment of the invention;

Fig. 2 is a plan view showing the sanitary napkin as partially broken away;

Fig. 3 is a rear view showing the sanitary napkin;

Fig. 4 is a sectional view taken along a line IV-IV in Fig. 1;

Fig. 5 is a view similar to Fig. 4 illustrating a procedure for unsealing of the case;

Fig. 6 is a plan view showing the sanitary napkin

individually packaged in the case as having been unsealed and unfolded back and forth;

Fig. 7 is a view similar to Fig. 6 showing an embodiment of the invention; and

Fig. 8 is a view similar to Fig. 6 showing still another embodiment of the invention.

Details of the inventive sanitary napkin individually packaged in a case will be more fully understood from the description given hereunder in reference with the accompanying drawings. It should be understood that, in the following description, the terms "fixed" and "bonded" without modification by the term "separably" suggest the case in which various members in contact with one another are not intended to be separated from one another after they have been "fixed" or "bonded" to one another.

Fig. 1 is a perspective view showing a sanitary napkin individually packaged in a case (or envelope) comprising a combination of the sanitary napkin (or menstruation pad) 2 itself and the case 3 indicated by imaginary lines. The sanitary napkin 2 is folded and contained in the case 3 which is then sealed with an adhesive tape 4. The case 3 is made of a thermoplastic film and has longitudinally opposite end

edges 6, 7, transversely opposite side edges 8, 9 and an openable end edge 11 which transversely extends between the side edges 8, 9 in parallel to the longitudinally opposite ends 6, 7. The film has been folded together with the sanitary napkin 2 and layers of the film sheet formed by such folding are separably bonded to each other along the side edges 8, 9 placed one upon another.

Figs. 2 and 3 are a front view as partially broken away and a rear view respectively showing the sanitary napkin 2 unfolded (for actual use thereof) from the state shown by Fig. 1. The sanitary napkin 2 comprises a liquid-permeable topsheet 12, a liquid-impermeable backsheet 13 and a liquid-absorbent core 14 disposed between these two sheets 12, 13. The sanitary napkin 2 has a front section 16 intended to be positioned in the front of the crotch zone of shorts (or sanitary panty) worn by the wearer, a rear section 17 intended to be positioned behind the crotch zone and an intermediate section 18 extending between the front and rear sections 16, 17. Fig. 2 shows the sanitary napkin 2 with a left half of the topsheet 12 broken away along a center line C-C. The topsheet 12 and the backsheet 13 are fixed to each other in their portions extending outward beyond a peripheral edge of the absorbent core 14 so as to form a pair of

transversely opposite side flaps 19, 19 as well as a pair of longitudinally opposite end flaps 21, 22. The pair of side flaps 19, 19 have a first pair of wings 23, 23 laterally extending at locations adjacent a front end of the sanitary napkin 2 and a second pair of wings 24, 24 laterally extending at locations adjacent a rear end of the sanitary napkin 2.

On a rear surface of the sanitary napkin 2 intended to be in contact with the shorts, as will be seen in Fig. 3, there are formed a first pair of adhesive zones 26, 26 on the first pair of wings 23, 23, a second pair of adhesive zones 27, 27 on the second pair of wings 24, 24 and a third pair of adhesive zones 28, 28 in the proximity of the center line C-C so as to extend longitudinally of the sanitary napkin 2. It should be understood here that these adhesive zones are independent of one another.

The sanitary napkin 2 configured as has been mentioned above is fixed to the shorts worn by the wearer in a manner as follows: The sanitary napkin 2 is fixed by the third pair of adhesive zones 28, 28 to an inner surface of a crotch zone of the shorts in the proximity of a middle region thereof. Then the first pair of wings 23, 23 are folded along the transversely opposite side edges of the crotch zone of the

shorts and fixed by the first pair of adhesive zones 26, 26 to an outer surface of the respectively. The second pair of wings 24, 24 extending over the entire inner surface of a hip zone of the shorts are fixed by the second pair of adhesive zones 27, 27 to the inner surface of the shorts over the hip zone thereof. The sanitary napkin 2 fixed to the shorts worn by the wearer in this manner is free from any that the sanitary napkin 2 might be shifted or distorted relative to the shorts.

Figs. 4 and 5 are a sectional view taken along a line IV-IV in Fig. 1 and a sectional view illustrating a procedure for unsealing of the case 3. It should be understood that, in Figs. 4 and 5, the sanitary napkin 2 is shown not in a sectional view but in a side view.

Fig. 6 is a plan view showing the sanitary napkin 2 individually packaged in the case 3 which have been unsealed by the procedure illustrated by Fig. 5 and then unfolded.

With the sanitary napkin 2 individually packed in the case 3 unfolded as shown by Fig. 6, the first pair of wings 23, 23 as well as the second pair of wings 24, 24 are in their positions folded back onto the topsheet 12. The sanitary napkin 2 has its rear section 17 folded back along an imaginary line A-A in the direction as indicated by an

arrow X onto the intermediate section 18 and its front section 16 folded back along an imaginary line B-B in the direction as indicated by an arrow Y onto the rear side section 17 which has previously been folded back, both with the topsheet 12 inside. The sanitary napkin 2 thus takes its position shown by Fig. 4.

Now detailed construction of the sanitary napkin 2 individually packaged in the case 3 will be described in reference with Fig. 4. The plastic film forming the case 3 and the sanitary napkin 2 are placed one upon another and then integrally folded in three layers. So far as the sanitary napkin 2 itself is concerned, the first pair of adhesive zones 26, 26 are protectively covered with a first release sheet 31, the second pair of adhesive zones 27, 27 are protectively covered with a second release sheet 32 and the third pair of adhesive zones 28, 28 are protectively covered with a third release sheet 33. The first release sheet 31 is fixed by means of first hot melt adhesive 36 to the inner surface of the case 3 at its rear end 40B, the second release sheet 32 is fixed by means of second hot melt adhesive 37 to the first release sheet 31 over its area overlapping the second release sheet 32. The third release sheet 33 is fixed by means of third hot melt adhesive 38 to

the inner surface of the case 3 at a plurality of spots. The adhesive tape 4 for the sealing purpose has its proximal end 4A fixed by means of fourth adhesive 39 to the outer surface of the case 3 at its front end 40A and its free end 4B separably bonded to the outer surface of the case 3 at its rear end 40B. The area over which the free end 4B is bonded to the inner surface of the case 3 corresponds to the area over which the third release sheet 33 is fixed by means of third hot melt adhesive 38 to the inner surface of the case 3. The adhesive tape 4 has its free end 4B of which a distal end is folded inward so as to form a non-adhesive tab 4C. As will be apparent from Figs. 4 and 6, the first release sheet 31 has its rear end 31A extending rearward beyond the rear end 40B of the case 3.

To unseal the case 3, the adhesive tape 4 is held by the wearer's fingers and pulled from its position shown by Fig. 4 in the direction as indicated by an arrow P to the position shown by Fig. 5. Then, only the case 3 is moved relative to the front section 16 of the sanitary napkin 2 being held and then peeling off of the third release sheet 33 fixed to the case 3 from the third adhesive zone 38 is started. Further peeling off of the third release sheet 33 toward its rear end allows the first release sheet 31 fixed

to the case 3 as well as the second release sheet 32 fixed to the first release sheet 31 to be peeled off. However, it should be understood that the procedure for unsealing off of the case 3 is not limited to that as has been described above. It is optional for the wearer to follow an alternative procedure from the state of Fig. 5. Specifically, before peeling off of the third release sheet 33 from the front section 16 of the sanitary napkin 2 is started, the rear section 17 of the sanitary napkin 2 is moved together with the rear end 40B of the case 3 in the direction as indicated by an arrow R until the sanitary napkin 2 and the case 3 are completely unfolded as shown by Fig. 6, whereupon the third release sheet 33 is peeled off from the front section 16 of the sanitary napkin 2. In this case, the sanitary napkin 2 and the case 3 can be quickly moved in the direction as indicated by the arrow R with the rear end 31A of the first release sheet 31 extending rearward from the rear end 40B.

Conventionally, the sanitary napkin case has been sometimes made of relatively thin (e.g., 5 ~ 50 μ m) oriented plastic films. However, it is often difficult to pick up such films between the wearer's fingers to unseal the case particularly when these films are in electrically charged

state. As a result, unsealing of the sanitary napkin case often takes undesirable long time. To solve this problem, the inventive sanitary napkin individually packed in the case employs the sheet material having a rigidity higher than that of the films forming the case 3 and, more preferably, such material being not readily charged with electricity. It is very easy to pick up the rear end 40B of the first release sheet 31 made of such sheet material and the case 3 can be quickly unsealed.

Figs. 7 and 8 are views similar to Fig. 6 showing alternative embodiments of the invention, respectively. According to the embodiment of the sanitary napkin individually packed in the case shown by Fig. 7, the first and second release sheets 31, 32 in the embodiment shown by Fig. 6 are replaced by a single release sheet 51 (fourth release sheet). The fourth release sheet 51 has its one surface serving to cover the first pair of adhesive zones 26, 26 and the other surface serving to cover the second pair of adhesive zones 27, 27. In other words, both surfaces of this release sheet 51 should be separable from the respective adhesive zones. In addition, one of these separably covering surfaces is partially fixed to the inner surface of the case 3. The first and second release sheets 31, 32 in the

embodiment shown by Figs. 5 and 6 are different from the fourth release sheet 51 in that, with one surface, the first and second release sheets 31, 32 cover the first and second pairs of adhesive zones, respectively, and, with the other surfaces, the first and second release sheets 31, 32 are fixed to each other and the first release sheet 31 is fixed also to the case 3.

According to the embodiment of the sanitary napkin individually packaged in the case shown by Fig. 8, the first and second release sheets 31, 32 are replaced by a relatively long single release sheet 52 (fifth release sheet). The fifth release sheet 52 has its one surface serving to cover the first and second pairs of adhesive zones 26, 26; 27, 27 and to be fixed to the inner surface of the case 3. When the first and second pairs of wings 23, 23; 24, 24 are longitudinally spaced from each other by a distance as shown, an amount of the release sheet to be used will be sometimes increased with respect to the case of the embodiments shown by Figs. 5 and 7.

The sanitary napkin individually packaged in the case according to the invention allows the second pair of wings destined to cover the hip zone of the shorts worn by the wearer to be prevented from shift and/or distortion, since

the second pair of wings are formed with the second pair of adhesive zones, respectively. The first and second pairs of adhesive zones separately formed on the first and second pairs of wings are protectively covered with the first and second release sheets, respectively. These first and second release sheets are fixed to each other, on one hand, and the first release sheet is fixed to the case, on the other hand. In this way, unsealing of the case and peeling off of the first and second release sheets can be continuously carried out. The first release paper sheet comprises a sheet material having a rigidity higher than that of the plastic films forming the case and the rear end of said release sheet extends rearward beyond the rear end of the case so as to form a tab. Such arrangement allows the case to be quickly unsealed. The case and the release sheets can be removed from the sanitary napkin as a waste integrally fixed one to another which is convenient for disposal.



WHAT IS CLAIMED IS:

1. A sanitary napkin individually packaged in a case comprising said case and said sanitary napkin individually packaged in said case, said sanitary napkin comprising a liquid-permeable topsheet, a liquid-impermeable backsheet and a liquid-absorbent core disposed therebetween, said absorbent core being formed along its transversely opposite side edges with side flaps each having a first wing laterally extending at a location adjacent a longitudinally front end edge of said absorbent core and a second wing laterally extending at a location adjacent a longitudinally rear end edge of said absorbent core, and said sanitary napkin being folded in three layers after said first and second wings having been folded back onto an upper surface of said topsheet with said topsheet inside so that the uppermost layer of said three layers is defined by a longitudinally front section of said sanitary napkin and the lowermost layer of said three layers is defined by a longitudinally rear section of the sanitary napkin, characterized in that:

said case comprises sheet material placed in direct or indirect contact with said backsheet of the sanitary napkin and folded together with said sanitary napkin wherein said



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sheet material is dimensioned so as to extend outward beyond a peripheral edge of the folded sanitary napkin;

said first and second pairs of wings are formed on their rear surfaces with independent adhesive zones, respectively, wherein said first pair of adhesive zones are covered with a first release sheet and said second pair of adhesive zones are covered with a second release sheet; and

said first and second release sheets are fixed to each other along their mutually overlapping regions and said first release sheet has a portion extending rearward beyond said longitudinally rear end edge of said sanitary napkin and fixed to an inner surface of said sheet material.

2. The sanitary napkin individually packaged in a case according to Claim 1, wherein three layers of said sheet material constituting the case formed by folding said sanitary napkin together with said sheet material are separably bonded together along portions extending outward beyond transversely opposite side edges of said sanitary napkin folded in three layers and placed one upon another; and wherein said first release sheet has a rigidity higher than that of said sheet material and a portion extending rearward beyond the longitudinally rear end edge of the said



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sanitary napkin folded in three layers, said portion being partially fixed to an inner surface of said sheet material and extending further rearward also beyond a longitudinally rear end edge of said sheet material.

3. The sanitary napkin individually packaged in a case according to Claim 1, wherein said first and second release sheets are replaced by a single continuous release sheet.

4. The sanitary napkin individually packaged in a case according to Claim 1, wherein said sanitary napkin has, in addition to said adhesive zones formed on said first and second pairs of wings, adhesive zones on lower surface of the backsheet along a transversely middle region of said sanitary napkin and these additional adhesive zones are covered with a third release sheet fixed to an inner surface of said sheet material independently of said first and second release sheets.