

Description

The present invention concerns a packaging container according to the opening part of claim 1 as well as a material for manufacture of the same according to the opening part of claim 9.

Packaging containers of this type are described in EP-A-0 083 441.

Consumer packagings for liquid contents such as milk, juice or the like occur in a number of different versions. One of the better known, generally occurring packaging container types is manufactured from a flexible, pliable packaging material which contains layers of paper and thermoplastic and is fed to a packaging machine in linear form. After shaping of the line of packaging material into a tubular form this is cross-sealed at regular intervals, whereby mainly pillow-shaped packaging containers provided with projecting sealing tabs are formed. The pillow-shaped packaging containers are converted to mainly parallelepiped shape by the projecting sealing tabs being folded down and the mainly triangular, double-wall corner flaps occurring in the shaping being folded inwards and sealed to the outside of the packaging container. A packaging container of this type is thereby given an upper end wall which is mainly rectangular and has a fold-out corner flap at each short end. One corner flap is, like the adjacent part of the upper end wall, provided with a weakening and tear indicator line which makes it possible to tear off a part of the corner of the packaging container and thereby to obtain a suitable pouring opening whose form and extent can vary as a result of the adaptation to the type of product which the packaging container is intended for.

When the packaging container is to be opened, the corner flap provided with the opening device is freed from its seal against the side wall of the packaging container and is folded upwards and flattened from the sides, so that the consumer can tear off the part intended for this and provide a pouring opening. In order to ensure at the pouring out of the contents through the pouring opening that a corresponding volume of air can simultaneously flow into the packaging container, the tear indication is usually shaped with a longish rear end, which mainly runs onward to the central part of the upper end wall. If the consumer does not open the packaging container completely, i.e. stops the tearing of the openable part before the material has broken as far as the aforesaid central part of the end wall, a surge problem arises in the pouring out of the contents, since the air is completely or partly prevented from penetrating into the packaging container. The same problem can also arise with certain product types of more viscous consistency.

In order to eliminate the above problem it has been proposed that the packaging container should be provided at the rear end of the upper end wall with a separate air hole, which is opened in connection with the opening of the packaging's pouring opening. It is, however, difficult to provide any form of automatic opening of this air hole, which makes two separate opening manoeuvres necessary before the pouring out of the contents. This has in practice proved difficult to put into effect, and the problem of poor air intake and therewith the ensuing surge problem therefore remains to a certain extent.

There is thus a general desire to provide a packaging container of the above type in which the opening procedure automatically leads to a pouring opening of such a shape that the contents can without any problem flow out at the same time as the lost volume of contents in the packaging is replaced with air flowing in from outside.

An aim of the present invention is to provide a packaging container with a pouring opening which has such a shape and size that air can flow in unhindered into the packaging container as soon as one has begun the pouring out of the contents.

A further aim of the present invention is to provide a packaging container with a shape that ensures on opening that the pouring opening formed enables outflow of the contents without any surge problem, even if the packaging container is fully filled, i.e. completely filled with contents and lacking what is called head space.

A further aim of the present invention is to provide a packaging container of the above type, which has a shape and design which largely accords with already known parallelepipedic types of packaging container and which can hence without difficulty be manufactured in the same type of packaging machine.

The invention with regard to the packaging container is claimed in claim 1 and subclaims 2 to 8 concern specific embodiments of the invention.

A material being capable of manufacturing a packaging container of this type according to the invention is claimed in claim 9. Such material can be shaped without hindrances into packaging containers in conventional packaging machines without the need to be modified or altered in any decisive manner. Moreover, the packaging material according to the invention only needs a simple modification in relation to the known materials for e.g. parallelepipedic packaging containers but with considerably improved pouring properties.

Through providing the material in the upper end wall of the packaging container with two suitably placed fold or weakening lines an automatic folding of the upper end wall is obtained in conjunction with the corner flap being raised and flat-

tened from the side, which happens in the normal opening manoeuvre. The folding along the aforementioned weakening lines results in the area of the end wall that is situated at the rear end of the pouring opening being raised to a higher level than the original level of the end wall and standing out in this position, which, when the packaging container is tipped up to pour out the contents through the pouring opening, results in the rear end of the pouring opening getting into a somewhat higher position than with conventional packaging containers, so that the inflow of air to replace the volume of contents poured out is considerably facilitated.

A preferred embodiment of the packaging container and the material for manufacture of the same according to the invention will now be described with particular reference to the enclosed schematic drawings, which only show those details indispensable for the understanding of the invention.

Figure 1 shows in perspective a packaging container according to the invention in the unopened state.

Fig. 2 is a side view of the upper part of the packaging container as per fig. 1 in the opened state.

Fig. 3 shows the packaging container as per fig. 2 from above.

Fig. 4 shows a material for a packaging container according to the invention in a laid flat state.

The packaging container according to the invention shown in fig. 1 is of the well known type which is manufactured from a flexible packaging laminate containing a central bearer or supporting layer of fibrous material, for example paper, which is lined on both sides with watertight layers of thermoplastic material, for example polythene. The packaging laminate includes a pattern of fold or weakening lines, which facilitates the shaping of the originally linear-formed packaging laminate to the finished, mainly parallelepipedic packaging container.

The shaping of the linear packaging laminate into individual, parallelepipedic packaging containers is done through the linear laminate being successively shaped into a tubular form so that both its longitudinal edges overlap each other and can be given a watertight seal with the aid of heat and the thermoplastic layer present on the outside of the laminate. As soon as a watertight longitudinal joint has been formed the tube is filled with contents of the desired type, e.g. milk, juice or the like, after which the tube is cross-sealed at regular intervals so that a connected strip of mainly pillow-shaped, filled packaging containers results. With the aid of transverse cuts in the sealing surfaces the individual packaging containers are separated and subjected to a final shape processing. In the processing to the desired parallelepiped shape four triangular double-wall corner flaps result, which are

pressed flat and folded to lie against the respective parts of the outside of the packaging container and are maintained in this position through heat sealing. At the same time the sealing tabs occurring in the cross-sealing of the upper and lower ends of the packaging container are folded to lie against the outside of the packaging container and through this a mainly parallelepipedic shape occurs, which is maintained until the packaging container is opened.

As can be seen in particular from figures 1, 2 and 3 the packaging container according to the invention formed in the above manner is given a parallelepiped shape with an upper end wall 1, four side walls 2 and a lower end wall, not shown. In the embodiment shown the upper end wall 1 is mainly rectangular, and a sealing tab 3 which is laid flat and lies against the end wall 1 extends mainly in the center over the end wall 1 between the two short sides of the end wall 1. On the aforementioned short sides two corner flaps 4 are situated linking with the two front corners 17 and rear corners of the upper end wall 1, and the sealing tab 3 runs along over the corner flaps to terminate at the free corners of the respective corner flaps 4 facing away from the end wall 1. At one or the front end of the upper end wall 1 the sealing tab 3 is provided with an opening indication 5 in the form of a line weakening the packaging material, e.g. a perforation, which extends along the underside of the sealing tab 3 between the end of the tab 3 and a rear end 18 near the central part of the upper end wall 1 where the perforation runs up against the free edge 6 of the sealing tab 3. The opening indication thus delimits an openable part 3' of the sealing tab 3, with this part extending both over the corner flap 4 and the adjacent part of the end wall 1. When the packaging container is to be opened to enable the pouring out of the contents the corner flap 4 provided with the opening indication 5 is first freed from the outside of the packaging container, after which it is folded upwards and pressed together from the sides at the same time as you tear off the openable part 3' of the sealing tab 3 along the opening indication 5. By this means a pouring opening 7 is formed, and the pouring out of the contents is facilitated by the fact that the present corner flap 4 in its folded-up state forms a pouring lip.

When the packaging container is tipped forward after opening for the purpose of pouring out a part of the contents through the pouring opening 7 it is desirable that the contents should leave the pouring opening in the form of an even, collected stream of liquid. In order to ensure this it is required that the volume of contents in the packaging container flowing out at the pouring out of the contents should be replaced by inflowing air, which is effected through the fact that air can flow in via

the rear end of the pouring opening, i.e. the part facing the corner flap 4 of the upper end wall 1 which is not folded upwards. In order to ensure this it is important that the consumer on opening the packaging container really uses the whole length of the opening indication 5, i.e. tears off the tear-off part so that the pouring opening 7 is given its maximum length. If this is not the case or if the contents present in the packaging have a high viscosity it can happen that a sufficient quantity of air does not flow into the packaging container during the first part of the opening process, particularly if the packaging container is completely filled.

According to the invention, however, this disadvantage can be eliminated if one sees to it that the rear end of the pouring opening 7 is given a raised position in relation to other parts of the upper end wall 1 of the packaging container, which gives a greater margin and ensures that the necessary amount of air flows into the packaging even in difficult pouring conditions. In order to achieve the desired raising of the rear end of the pouring opening 7 the upper end wall 1 of the packaging container according to the invention is provided with two folding lines 9, which extend from the rear end 18 of the openable part 3' and diverge in relation to each other. The lines 9 diverge more specifically in a direction towards the rear part 19 of the upper end wall 1, which is preferably provided with two other folding lines 8, which together with the two first folding lines 9 enclose a central, mainly rhomboid area of the end wall. Through providing the end wall 1 with both the front and rear weakening lines 8, 9 the end wall 1 acquires a tendency to fold at these lines in conjunction with the folding up and pressing together of the front corner tab 4 when the packaging container is to be opened. The rhomboid area situated between the fold lines 8, 9 by this means forms a sloping plane, which connects at its rear end with the original level of the upper end wall 1 and at its front end is 3 to 6 mm above the said level, which makes it possible for the rear end of the pouring opening 7 to be raised a corresponding distance in relation to the surface of the liquid at the pouring out of the contents from the packaging. This gain in level ensures that air can flow into the packaging container even when the consumer has not opened it completely or the current product, owing to its viscosity, has an increased tendency to surge.

With the aid of especially the two front folding lines 9 the upper end wall 1 of the packaging container is given a concentrated weakening, which sees to it that the said part of the end wall stands out in the upper position it naturally assumes in conjunction with the folding upwards of the corner flap 4 and the opening process. This tendency is reinforced and made permanent when the lines 9

extend symmetrically on both sides of the sealing tab 3, and it has proved to be optimum if the first folding lines 9 extend mainly in the direction of the middle of the upper end wall 1 with side edges parallel to the sealing tab 3. According to a preferred embodiment the angle α between the first folding lines 9 is c. 120° , but the folding lines 9 have proved to give a certain effect even with a different line, and an improvement has been observed when the folding lines 9 have a mutual angle α of between 60° and 160° .

The two rear folding lines 8 are likewise arranged mainly symmetrically in relation to the sealing tab 3, and the angle β between them is preferably in the main 60° . In order to achieve the desired effect it has proved suitable if the angle β between the rear folding lines 8 is at the maximum 90° .

The folding lines 8, 9 can be made as conventional fold lines, where the packaging material is pressed together in linear form in order to obtain the desired weakening, but it is also possible to form the lines in another manner, e.g. through linear perforation of the bearing layer. If the folding lines 9 can in this way be made sufficiently strong, the two rear folding lines 8 can if desired be omitted since the front folding lines 9 weaken the material to a sufficient degree to ensure a maintained raised position of the end wall 1 at the rear end of the pouring opening 7.

A material for manufacture of a packaging container according to the invention is shown in fig. 4. The material consists of a laminated material containing e.g. a bearing or supporting layer of paper, which is lined on both sides with homogeneous layers of thermoplastic material, e.g. polythene. The material shown can form part of a packaging material line and contains a pattern of fold and weakening lines 10, which divide the material into rows of a number of wall panels, e.g. side wall panels 11, bottom panels 12 and upper end wall panels 13. The pattern of fold lines also comprises fold and weakening lines 20 for the information of the corner flaps 4 but is mainly conventional and should therefore not need to be described in greater detail in this connection. By means of a dotted line the opening indication 5 is also indicated, which has the form of a perforation which extends in the narrow area at one side of the packaging container material which is to form the upper sealing tab 3 of the packaging container. With thick, solid lines the two front folding lines 9 are also indicated as well as the two rear folding lines 8 according to the invention, which are placed on the end wall panels 13 delimited by means of the fold lines 10 which will together form the upper end wall 1 in the finished packaging container. The folding lines 9 extend mainly at an angle between on the

one hand a fold line 14, which delimits the field which forms the sealing tab 3 in the finished packaging, and a fold line 15 parallel to fold line 14, which in the finished packaging delimits the upper end wall 1 from the adjacent side walls 2. The angle of the folding lines 8, 9 to the two fold lines 14, 15 varies depending on the size and shape of the current packaging container, but remains within those limits which are determined by the previously mentioned angle values.

Claims

1. Packaging container of the type which is manufactured from a pliable material provided with folding lines (8, 9, 10) and which has an upper end wall (1) with two front corners (17) between which a fold-out corner flap (4) is situated, and an opening indication (5) extending over both the corner flap (4) and an adjacent part of the end wall (1), wherein at least one pair of diverging folding lines extends over the upper end wall (1) from the area of the rear end (18) of the opening indication (5),
characterized in that
at least one pair of said diverging folding lines (first folding lines (9)) diverges in the direction of the rear part (19) of the upper end wall (1).
2. Packaging container according to claim 1,
characterized in that
the upper end wall (1), in addition to the aforementioned first folding lines (9) also contains two other folding lines (8) situated at the rear part of the end wall (1) with the first folding lines (9) together enclosing a central, mainly rhomboid area of the end wall.
3. Packaging container according to claim 1 or 2,
characterized in that
said folding lines (8, 9) extend symmetrically on both sides of a sealing tab (3) situated centrally on the upper end wall (1) with the front end of this containing the opening indication (5).
4. Packaging container according to claim 3,
characterized in that
the first folding lines (9) extend mainly towards the middle of the side walls of the upper end wall (1) parallel to the sealing tab (3).
5. Packaging container according to claim 4,
characterized in that
the first folding lines (9) have a mutual angle (α) between them of 60° and 160°.

6. Packaging container according to claim 5,
characterized in that
said angle (α) between the first folding lines (9) amounts to 120°.
7. Packaging container according to one or more of claims 2-6,
characterized in that
the angle (β) between said other folding lines (8) is less than 90°.
8. Packaging container according to claim 7,
characterized in that
said angle (β) between said other folding lines (8) amounts to 60°.
9. Material for manufacture of a packaging container according to one or more of the preceding claims comprising at least a supporting layer and a watertight thermoplastic layer connected with said supporting layer and a pattern of folding lines (8, 9, 10) for shaping of the material to a packaging container with an upper end wall (1) and a fold-out corner flap (4), comprising an opening indication (5) extending over both the corner flap (4) and an adjacent part of said end wall (1), wherein the area of the material corresponding to the upper end wall (1) includes at least one pair of folding lines (9) arranged at angles (α , β) between each other, in such a way that, in the finished container, said folding lines (9) diverge from the area of the rear end (18) of the opening indication (5)
characterized in that
in the finished container at least one pair of said diverging folding lines (first folding lines (9)) diverges in the direction of the rear part (19) of said upper end wall (1).
10. Material according to claim 9,
characterized in that
it contains, in addition to the aforementioned first folding lines (9) also two other folding lines (8) situated at the rear part of the end wall (1) of the finished container, with the first folding lines (9) together enclosing a central, mainly rhomboid area of the end wall.

Patentansprüche

1. Verpackungsbehälter des Typs, der aus einem biegsamen Material hergestellt ist, das mit Faltlinien (8, 9, 10) versehen ist, und der eine obere Endwand (1) mit zwei vorderen Ecken (17) hat, zwischen denen eine aufklappbare Ecklasche (4) liegt und eine Öffnungsmarkierung (5) hat, die sowohl über die Ecklasche (4)



one hand a fold line 14, which delimits the field which forms the sealing tab 3 in the finished packaging, and a fold line 15 parallel to fold line 14, which in the finished packaging delimits the upper end wall 1 from the adjacent side walls 2. The angle of the folding lines 8, 9 to the two fold-lines 14, 15 varies depending on the size and shape of the current packaging container, but remains within those limits which are determined by the previously mentioned angle values.

Claims

1. Packaging container of the type which is manufactured from a pliable material provided with folding lines (8, 9, 10) and which has an upper end wall (1) with two front corners (17) between which a fold-out corner flap (4) is situated, and an opening indication (5) extending over both the corner flap (4) and an adjacent part of the end wall (1), wherein at least one pair of diverging folding lines extends over the upper end wall (1) from the area of the rear end (18) of the opening indication (5),
characterized in that
at least one pair of said diverging folding lines (first folding lines (9)) diverges in the direction of the rear part (19) of the upper end wall (1).
2. Packaging container according to claim 1,
characterized in that
the upper end wall (1), in addition to the aforementioned first folding lines (9) also contains two other folding lines (8) situated at the rear part of the end wall (1) with the first folding lines (9) together enclosing a central, mainly rhomboid area of the end wall.
3. Packaging container according to claim 1 or 2,
characterized in that
said folding lines (8, 9) extend symmetrically on both sides of a sealing tab (3) situated centrally on the upper end wall (1) with the front end of this containing the opening indication (5).
4. Packaging container according to claim 3,
characterized in that
the first folding lines (9) extend mainly towards the middle of the side walls of the upper end wall (1) parallel to the sealing tab (3).
5. Packaging container according to claim 4,
characterized in that
the first folding lines (9) have a mutual angle (α) between them of 60° and 180°.

6. Packaging container according to claim 5,
characterized in that
said angle (α) between the first folding lines (9) amounts to 120°.
7. Packaging container according to one or more of claims 2-6,
characterized in that
the angle (β) between said other folding lines (8) is less than 90°.
8. Packaging container according to claim 7,
characterized in that
said angle (β) between said other folding lines (8) amounts to 60°.
9. Material for manufacture of a packaging container according to one or more of the preceding claims comprising at least a supporting layer and a watertight thermoplastic layer connected with said supporting layer and a pattern of folding lines (8, 9, 10) for shaping of the material to a packaging container with an upper end wall (1) and a fold-out corner flap (4), comprising an opening indication (5) extending over both the corner flap (4) and an adjacent part of said end wall (1), wherein the area of the material corresponding to the upper end wall (1) includes at least one pair of folding lines (9) arranged at angles (α , β) between each other, in such a way that, in the finished container, said folding lines (9) diverge from the area of the rear end (18) of the opening indication (5)
characterized in that
in the finished container at least one pair of said diverging folding lines (first folding lines (9)) diverges in the direction of the rear part (19) of said upper end wall (1).
10. Material according to claim 9,
characterized in that
it contains, in addition to the aforementioned first folding lines (9) also two other folding lines (8) situated at the rear part of the end wall (1) of the finished container, with the first folding lines (9) together enclosing a central, mainly rhomboid area of the end wall.

Patentansprüche

1. Verpackungsbehälter des Typs, der aus einem biegsamen Material hergestellt ist, das mit Faltlinien (8, 9, 10) versehen ist, und der eine obere Endwand (1) mit zwei vorderen Ecken (17) hat, zwischen denen eine aufklappbare Ecklasche (4) liegt und eine Öffnungsmarkierung (5) hat, die sowohl über die Ecklasche (4)



als auch einen benachbarten Teil der Endwand (1) verläuft, wobei wenigstens ein Paar von divergierenden Faltlinien von dem Bereich des hinteren Endes (18) der Öffnungsmarkierung (5) über die obere Endwand (1) verläuft, **dadurch gekennzeichnet**, daß wenigstens ein Paar der divergierenden Faltlinien (erste Faltlinien (9)) in der Richtung des hinteren Teils (19) der oberen Endwand (1) divergiert.

2. Verpackungsbehälter nach Anspruch 1, **dadurch gekennzeichnet**, daß die obere Endwand (1) zusätzlich zu den vorgenannten ersten Faltlinien (9) auch zwei weitere Faltlinien (8) enthält, die an dem hinteren Teil der Endwand (1) liegen und gemeinsam mit den ersten Faltlinien (9) einen zentralen, im wesentlichen rautenförmigen Bereich der Endwand einschließen.
3. Verpackungsbehälter nach einem der Ansprüche 1 oder 2, **dadurch gekennzeichnet**, daß die Faltlinien (8, 9) symmetrisch auf beiden Seiten einer Schweißrippe (3) verlaufen, die zentral auf der oberen Endwand (1) liegt, wobei das Vorderende davon die Öffnungsmarkierung (5) enthält.
4. Verpackungsbehälter nach Anspruch 3, **dadurch gekennzeichnet**, daß die ersten Faltlinien (9) im wesentlichen zu der Mitte der Seitenwände der oberen Endwand (1) hin parallel zu der Schweißrippe (3) verlaufen.
5. Verpackungsbehälter nach Anspruch 4, **dadurch gekennzeichnet**, daß die ersten Faltlinien (9) zwischen sich einen Winkel (α) von 60° und 160° haben.
6. Verpackungsbehälter nach Anspruch 5, **dadurch gekennzeichnet**, daß der Winkel (α) zwischen den ersten Faltlinien (9) 120° beträgt.
7. Verpackungsbehälter nach einem oder mehreren der Ansprüche 2 bis 6, **dadurch gekennzeichnet**, daß der Winkel (β) zwischen den weiteren Faltlinien (8) kleiner als 90° ist.
8. Verpackungsbehälter nach Anspruch 7, **dadurch gekennzeichnet**, daß der Winkel (β) zwischen den weiteren Faltlinien (8) 60° beträgt.

9. Material zum Herstellen eines Verpackungsbehälters nach einem oder mehreren der vorhergehenden Ansprüche, der wenigstens eine Trägerschicht und eine mit der Trägerschicht verbundene wasserdichte thermoplastische Schicht sowie eine Struktur von Faltlinien (8, 9, 10) zum Formen des Materials zu einem Verpackungsbehälter mit einer oberen Endwand (1) und einer aufklappbaren Ecklasche (4) aufweist, die eine Öffnungsmarkierung (5) aufweist, die sowohl über die Ecklasche (4) als auch einen benachbarten Teil der Endwand (1) verläuft, wobei der Bereich des Materials, der der oberen Endwand (1) entspricht, wenigstens ein Paar Faltlinien (9) aufweist, die unter Winkeln (α , β) untereinander auf solche Weise angeordnet sind, daß bei dem fertigen Behälter die Faltlinien (9) von dem Bereich des Hinterendes (18) der Öffnungsmarkierung divergieren, **dadurch gekennzeichnet**, daß bei dem fertigen Behälter wenigstens ein Paar der divergierenden Faltlinien (erste Faltlinien (9)) in der Richtung des hinteren Teils (19) der oberen Endwand (1) divergiert.
10. Material nach Anspruch 9, **dadurch gekennzeichnet**, daß es zusätzlich zu den vorgenannten ersten Faltlinien (9) außerdem zwei weitere Faltlinien (8) enthält, die an dem hinteren Teil der Endwand (1) des fertigen Behälters liegen und gemeinsam mit den ersten Faltlinien (9) einen zentralen, im wesentlichen rautenförmigen Bereich der Endwand einschließen.

Revendications

1. Récipient d'emballage du type fabriqué à partir d'un matériau pliable pourvu de lignes de pliage (8, 9, 10) et comportant une paroi d'extrémité supérieure (1) présentant deux coins avant (17) entre lesquels est situé un volet d'angle replié vers l'extérieur (4), et une indication d'ouverture (5) s'étendant à la fois au-dessus du volet d'angle (4) et d'une partie adjacente de la paroi d'extrémité (1), dans lequel au moins un couple de lignes de pliage divergentes s'étend au-dessus de la paroi d'extrémité supérieure (1) à partir de la zone de l'extrémité arrière (18) de l'indication d'ouverture (5), caractérisé en ce qu'au moins un couple de dites lignes de pliage divergentes (premières lignes de pliage (9)) diverge dans la direction de la partie arrière (19) de la paroi d'extrémité supérieure (1).



2. Récipient d'emballage selon la revendication 1, caractérisé en ce que la paroi d'extrémité supérieure (1), en plus des lignes de pliage (9) mentionnées plus haut, contient aussi deux autres lignes de pliage (8) situées à la partie arrière de la paroi d'extrémité (1), qui avec les premières lignes de pliage (9) entourent une zone centrale, principalement en forme de losange, de la paroi d'extrémité

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3. Récipient d'emballage selon la revendication 1 ou 2, caractérisé en ce que les dites lignes de pliage (8, 9) s'étendent symétriquement des deux côtés d'une languette de scellement (3) disposée centralement sur la paroi d'extrémité supérieure (1) et dont l'extrémité avant contient l'indication d'ouverture.

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4. Récipient d'emballage selon la revendication 3, caractérisé en ce que les premières lignes de pliage (9) s'étendent principalement vers le milieu des parois latérales de la paroi d'extrémité supérieure parallèlement à la languette de scellement (3).

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5. Récipient d'emballage selon la revendication 4, caractérisé en ce que les premières lignes de pliage (9) font entre elles un angle (α) de 60° à 160°.

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6. Récipient d'emballage selon la revendication 5, caractérisé en ce que le dit angle (α) que font entre elles les premières lignes de pliage (9) est de 90°.

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7. Récipient d'emballage selon l'une ou plusieurs des revendications 2-6, caractérisé en ce que l'angle (β) que font entre elles les dites autres lignes de pliage (8) est inférieur à 90°.

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8. Récipient d'emballage selon la revendication 7, caractérisé en ce que le dit angle (β) que font entre elles les dites autres lignes de pliage (8) est de 60°.

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9. Matériau pour la fabrication d'un récipient d'emballage selon une ou plusieurs des revendications précédentes, comprenant au moins une couche de support et une couche thermoplastique étanche reliée à ladite couche de support, et un réseau de lignes de pliage (8, 9, 10) pour mettre le matériau sous la forme d'un récipient d'emballage avec une paroi d'extrémité supérieure (1) et un volet d'angle (4) replié vers l'extérieur, comprenant une indication d'ouverture (5) qui s'étend à la fois au-dessus du volet d'angle (4) et d'une partie adjacente de la dite paroi d'extrémité (1), dans lequel la zone du matériau qui correspond à la paroi d'extrémité supérieure (1) comprend au moins un couple de lignes de pliage (9) faisant entre elles des angles (α , β), de telle façon que dans le récipient terminé les dites lignes de pliage (9) divergent à partir de la zone de l'extrémité arrière (18) de l'indication d'ouverture (5) caractérisé en ce que, dans le récipient terminé, au moins un couple des dites lignes de pliage divergentes (premières lignes de pliage (9)) diverge dans la direction de la partie arrière (19) de la dite paroi d'extrémité supérieure (1).

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10. Matériau selon la revendication 9 caractérisé en ce qu'il contient aussi, en plus des premières lignes de pliage (9) mentionnées ci-dessus, deux autres lignes de pliage (8) situées à la partie arrière de la paroi d'extrémité (1) du récipient terminé et qui, avec les premières lignes de pliage (9), entourent une zone centrale, principalement en losange, de la paroi d'extrémité.

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