ABSTRACT
The present invention relates to a bag pack (10) with an opening portion which is intended to be used for opening the pack (10) or at which the pack (10) has already been opened, wherein the pack (10) comprises at least one laminate bag side (12), which is formed from a laminate which comprises at least one outer layer, arranged on an outer bag side, an inner layer, arranged on an inner bag side, and an adhesive-bonding layer arranged between the outer layer and the inner layer, wherein the at least one laminate bag side (12) has formed in it a release portion (18) in which a predetermined release region (28) of the outer layer, together with the adhesive-bonding layer, can be released from the inner layer to expose an adhesive surface of the adhesive-bonding layer which is directed away from the outer layer, wherein the release portion (18) differs from the opening portion, and therefore the release portion (18) of the laminate bag side (12) is, and remains, closed, when used as intended, by way of at least the inner layer.
POUCH PACKAGING WITH ADHESIVE BONDING TAB

[0001] The invention relates to a pouch packaging with an opening portion which is intended to be used for opening the packaging or at which the packaging has already been opened, the packaging comprising at least one laminate pouch side which is formed from a laminate which comprises at least three layers, namely an outer layer located farther from the internal cavity of the pouch, an inner layer located nearer the internal cavity of the pouch and at least partially an adhesive layer located between the outer layer and the inner layer, wherein a release portion is formed in the at least one laminate pouch side, in which a predetermined release region of the outer layer, together with the adhesive layer, can be released from the inner layer to expose an adhesive surface of the adhesive layer which is directed away from the outer layer.

[0002] Note that the term “opening portion” in the present patent application is understood to mean a region of the pouch packaging surrounded by an opening edge. Portions of the opening edge may be adjacent to each other when the packaging is sealed. Also note that the term “pouch packaging” is not intended to define a specific shape or material for the packaging, but that this term merely means that the packaging has certain flexible properties such that it can easily be deformed when a consumer applies even moderate force. The pouch packaging may in this case be made from film material, preferably laminate film material.

[0003] Such pouch packagings are already known in the prior art. For example, US 2005/0276525 A1 discloses a generic pouch packaging in which the upper side of the pouch comprises a laminate. A release portion is formed in this laminate pouch side on which a tab in the form of a lid allows the pouch packaging to be opened by tearing apart. An adhesive surface of the adhesive layer is exposed at least partially on a surface of the tab in this process. In particular, the pouch packaging is opened in an opening portion which is located inside the release portion. Once the packaging has been opened, the tab in the form of a lid can be used to reseal the packaging if necessary by means of the adhesive surface of the adhesive layer provided on the tab.

[0004] However, the disadvantage of this pouch packaging is that the pouch always has substantially the same external dimensions regardless of its filling level. Thus, regardless of the pouch packaging filling level, the maximum packaging volume is always required as the storage volume.

[0005] The object of the present invention is therefore to provide a resealable pouch packaging with external dimensions which can simply be adapted to the respective filling level of the pouch packaging.

[0006] This object is achieved according to the invention by a pouch packaging of the type mentioned initially, in which the release portion is different from the opening portion such that the release portion of the laminate pouch side is sealed and remains sealed at least the inner layer when used as intended.

[0007] The empty portion of the pouch packaging can be simply rolled or folded down due to the spatial distance between the release portion and the opening portion, so that the pouch can be subsequently resealed by means of the release region released from the release portion. In this process the release region with the adhesive surface of its adhesive layer is preferably bonded over the rolled or folded-down region of the pouch packaging with the opening portion in such a way that the partially empty pouch packaging is securely resealed and simultaneously prevents unintentional unrolling or unfolding of the region of the pouch packaging comprising the opening portion. To this end, the adhesive surface of the adhesive layer of the release region is required to bond at least one portion of the outer surface of the pouch packaging.

[0008] Note that the term “laminate pouch side” as defined in the present invention is understood to mean that the complete side, e.g. the complete rear side of the pouch, is made from laminate and not that laminate is only partially present on one side of the pouch. In particular, the term “laminate pouch side” should not be understood to mean a pouch side on which only a removable adhesive strip has been additionally applied.

[0009] To ensure that the adhesive layer located between the inner layer and the outer layer releases from the inner layer together with the outer layer when releasing the predetermined release region from the inner layer in the release portion, it is advantageous if the adhesive layer adheres more strongly to a laminate layer directly adjacent to the adhesive layer in a direction towards the outer side of the pouch than to a laminate layer directly adjacent to the adhesive layer in a direction towards the inner side of the pouch. This can, for example, be achieved by designing the surface of the laminate layer facing the adhesive layer, which is adjacent to the adhesive layer directly towards the inner side of the pouch, as a release layer, especially by making it siliconised or waxed or coated with a release varnish. In addition, or alternatively, at least one additional functional layer may be provided between the outer layer of the laminate and the adhesive layer, such as an adhesion-promoting layer or a barrier layer or similar.

[0010] In order to guarantee repeated resealability of the pouch packaging, it is also advantageous if the adhesive layer is made from a material which allows the adhesive layer to be repeatedly bonded to and released from a surface on the outer side of the pouch. In particular, the adhesive layer may comprise an adhesive material which ensures a permanent bonding action in a temperature range from about 20°C to 50°C, and especially from 10°C to 50°C, in order to achieve this. In addition, the surface of the outer side of the pouch may be smooth, at least in part.

[0011] In a development of the invention, it is proposed that all sides of the pouch are formed as laminate pouch sides, preferably with an identical layer structure. In this way, at least one laminate pouch side and the remaining pouch sides of the pouch packaging can be made from a single material or even a single sheet, which reduces the number of joints required to manufacture the pouch packaging. This thus generally allows to reduce the manufacturing costs for the pouch packaging and, in the case of a single-sheet material, increases the stability of the finished pouch packaging as joints often represent weak points in the pouch packaging.

[0012] It is also proposed that an outer edge of the release portion may at least in portions be defined by a material weakness extending substantially linearly in at least the outer layer of the laminate. In this way it is possible to guarantee that the release region can be separated from a region of the laminate pouch side located outside the release portion along the material weakness which extends substantially linearly. Depending on the configuration of this material weakness, the material of the outer layer on one side of the material weakness which extends substantially linearly may either still be at
least partially or fully connected to the material of the outer layer on the other side of the material weakness or be already separated before the release region is released from the inner layer in the release portion for the first time.

[0013] In this case, the material weakness may in particular be formed by removing material and/or by material displacement and/or by at least partial material separation. Stamping is an example of a possible material displacement method and cutting is an example of a possible material separation method. The material weakness which extends substantially linearly can also be incorporated in the pouch material by means of a laser, e.g., in the form of a laser perforation. In this process, the material weakness can either be formed merely in the outer layer or also in other layers of the laminate. In order to allow a particularly simple release of the release region from the inner layer, the material weakness is preferably formed not only in the outer layer of the laminate, but also in the adhesive layer and if applicable in layers of the laminate located between the outer layer and the adhesive layer.

[0014] However, to prevent an opening being created unintentionally in the pouch packaging when releasing the predetermined release region from the inner layer of the release portion, it is preferable for the inner layer of the laminate to be free of any material weakness, at least in the vicinity of the release portion.

[0015] Furthermore, the material may be continuously weakened at least in the outer layer of the laminate along the material weakness which extends substantially linearly. This allows to achieve that a substantially constant force is required when the release region is released from the inner layer for the first time.

[0016] Alternatively, it is also possible for the material of at least the outer layer of the laminate to be weakened merely locally along the material weakness which extends substantially linearly. Laser perforation or punching are conceivable in this case, for example. By only locally weakening the material of at least the outer layer of the laminate, the pouch packaging as such displays increased stability before the release region is released from the inner layer for the first time compared with the embodiment with continuous weakening. The risk of the release region accidentally releasing prematurely from the inner layer can thus also be reduced.

[0017] To ensure that the release region released from the pouch packaging can be removed well over the opening portion when this is rolled or folded down, it is proposed that the release portion has a substantially elongated form, one of its two longitudinal ends facing the opening portion and being at a predetermined distance from this opening portion in the longitudinal direction of the release portion. Especially if the pouch is also elongated in shape, the opening portion being located in the region of one of its two longitudinal ends, it is advantageous if the longitudinal direction of the pouch and the longitudinal direction of the release portion substantially coincide so that there are a variety of sealing options for the partially empty pouch depending on the pouch filling level.

[0018] In accordance with normal spoken usage, “longitudinal direction” is understood to mean the direction of the longest extension.

[0019] Note that the precise configuration of the pouch packaging, especially regarding its shape, but also the type of labelling, may be dependent on the substance to be packed in the respective pouch packaging.

[0020] To make it easier for the user to release the release region from the inner layer, it is also proposed that the longitudinal end of the release portion facing the opening portion comprises an edge region which is in the shape of a grip tab. The fact that the release region can thus be initially released from the inner laminate surface at the longitudinal end of the release portion which is closest to the opening portion means that the release region does not need to be completely released from the inner laminate surface, but merely needs to be released along a defined partial region of the release portion depending on the filling level of the pouch packaging. The region of the pouch packaging comprising the opening portion which is rolled or folded down to reduce the pouch volume once a partial quantity of the packaging contents have been removed may preferably also comprise a partial region of the inner layer of the release portion, the release region having been detached from this partial region of the inner layer of the release portion beforehand. This portion of the detached release region can thus be used to stick over the folded or rolled-down region of the pouch packaging so that it cannot unintentionally unfold or unroll and the pouch packaging thus remains securely sealed.

[0021] To make it easier for the consumer to release the release region, it is also advantageous if the adhesive layer of the release region displays a reduced adhesive force, down to zero if applicable, in the region of the grip tab. In this case, the grip tab, along with the entire release region, is preferably not elevated compared to the surrounding outer side of the packaging before it is released from the remaining pouch packaging for the first time, but lies extensive in or preferably even flush with the outer side of the packaging. This thus makes it possible to reduce the risk of the release region being unintentionally released from the remaining pouch packaging, e.g., because the grip tab accidentally gets caught somewhere.

[0022] To prevent the detached release region accidentally getting lost, and to reduce the number of packaging parts to be disposed of individually, it is also proposed that the release region may be permanently, or even integrally connected to a region of the laminate located outside the release portion at the longitudinal end of the release portion distal to the opening portion. Alternatively, however, it is also possible for the release region to be detached fully from the laminate of the at least one laminate pouch side. In this case, the release portion may advantageously be provided in any position on the pouch packaging. If, for example, the pouch packaging is a stand-up pouch or a block bottom pouch, it is possible to provide the release portion on the base of the stand-up or block bottom pouch. This means that the remaining side surfaces of the stand-up or block bottom pouch, especially its front and rear sides, are not visually or otherwise impaired by the release portion.

[0023] The decision as to whether the release region should be designed to be completely detachable from the inner layer of the release portion or not may also depend on whether the corresponding pouch packaging has a so-called “headspace”, i.e., an unused area of the packaging, or not. A headspace is understood to mean an inner cavity in the upper region of the initially sealed pouch packaging which is not filled with the packed product.

[0024] Also note that in one embodiment of the present invention, the outer side of the inner layer may be printed with additional information such as the fact that the pouch packaging only has a certain filling level. This information is only visible when the consumer detaches the release region from the inner layer of the release portion. In addition, or alternatively, if the pouch packaging has a multi-layer structure, an
intermediate layer may also be printed between the release region and an inner pouch surface facing the release portion if the overlaid layers of the multi-layer structure are transparent, at least in part. In addition, or alternatively, a print job may be provided on the inner layer by reverse printing.

[0025] The present invention is described below in greater detail with reference to the attached figures. These are as follows:

[0026] FIG. 1: a first embodiment of a pouch packaging according to the invention;

[0027] FIG. 2: a second embodiment of a pouch packaging according to the invention;

[0028] FIGS. 3a to 3d: various states of the first embodiment of the pouch packaging according to the invention which show, inter alia, how the pouch packaging according to the invention can be resealed in different ways depending on the filling level;

[0029] FIGS. 4a to 4c: a cross-section through the laminate pouch side of a pouch packaging according to the invention, showing how a material weakness can be incorporated in the laminate and how a release region can be released from the inner layer;

[0030] FIGS. 5a to 5c: rough schematic diagrams of five different modifications with respect to the implementation of the release region of the pouch packaging illustrated in FIG. 1.

[0031] FIG. 1 shows a first embodiment of the general pouch packaging according to the invention, commonly identified as 10. In the pouch packaging illustrated in FIG. 1, this is a block bottom pouch which is suited to standing on a flat surface. In addition to a pouch base, the pouch packaging 10 also comprises a front pouch side 12a, a rear pouch side which is not shown in FIG. 1 and two narrow pouch sides positioned at the sides, of which only one narrow pouch side 14 can be seen in FIG. 1. The front pouch side 12 and the rear pouch side are connected by means of a sealing seam 16a at a longitudinal end opposite the pouch base before the pouch packaging 10 is opened for the first time. In this case the sealing seam 16a seals an opening through which the pouch packaging 10 is filled with contents before it is sealed for the first time. The sealing seam 16a can also be pulled apart again if the pouch packaging 10 is used as intended in order to empty the pouch packaging 10, at least partially.

[0032] In this embodiment, all sides of the pouch packaging 10 are made from the same laminate which comprises an outer layer located on the outside of the pouch, an inner layer located on the inside of the pouch and an adhesive layer located between the outer layer and the inner layer. However, in principle, it would be sufficient if only one of the sides described above of the pouch packaging 10 according to the invention consisted of a laminate of this kind. In particular, in the embodiment shown in FIG. 1, it would be sufficient if only the front pouch side 12 was made laminate, i.e. being the at least one laminate pouch side. Namely, a release portion 18 which is elongated in shape is formed in the pouch front side 12 and one of the two longitudinal ends of this release portion faces the sealing seam 16. The outer edge of the release portion 18 is usually defined by a material weakness 20 which extends substantially linearly. The material weakness 20 extending linearly at the longitudinal end of the release portion 18 facing the sealing seam 16 is shaped such that a grip tab 22 is formed on the release portion 18.

[0033] The material weakness which extends substantially linearly comprises a curved section 24 at both of its ends, which is intended to prevent the material at the ends of the material weakness extending substantially linearly tearing any further when a release region in the release portion is released. In the embodiment illustrated in FIG. 1, the release region in the release portion 18 is integrally and thus permanently connected between the two curved sections 24 to a region of the front pouch side 12 located outside the release portion 18.

[0034] FIG. 2 shows a second embodiment of a pouch packaging according to the invention. Analogous features to the first embodiment illustrated in FIG. 1 are assigned the same reference numerals, but increased by 100. In addition, the embodiment shown in FIG. 2 is only described below to the extent that it differs from the description of the first embodiment shown in FIG. 1 which is otherwise expressly referred to.

[0035] The second embodiment shown in FIG. 2 only differs substantially from the first embodiment shown in FIG. 1 in relation to two aspects. The first aspect relates to the shape of the pouch packaging 110. This pouch packaging is indeed a pouch which has a pouch base and is thus suited to standing on a flat surface, but the basic shape of this pouch packaging is substantially embodiment-shaped. Such packaging shapes are particularly known in the trade for packing coffee.

[0036] The second aspect concerns the course of the material weakness 120 which extends substantially linearly. In the second embodiment, the material weakness 120 defines the release portion 118 all around. This means that a release region can be detached fully from the inner layer of the release portion 118. Therefore, in this case, unlike the embodiment illustrated in FIG. 1, it is not permanently connected to a region of the front pouch side 112 outside the release portion 118.

[0037] In the embodiment of the pouch packaging 10 illustrated in FIG. 1, there is generally a headspace, i.e. a portion of the packaging inner cavity which is not filled with the packed product, whereas this is usually not the case in the pouch packaging 110 illustrated in FIG. 2, in which coffee is vacuum-packed for example. In a pouch packaging without a headspace, if only a small amount of the packed product is removed from the pouch packaging when first opened, it may be that the upper region of the pouch packaging, which compromises the opening edges forming the opening, cannot be folded or rolled down far enough to be covered by a release region permanently connected to the remaining pouch packaging for the purpose of resealing. Therefore, in such cases, a release region which is designed to be fully detachable from the inner layer of the release portion is preferable. In other cases, i.e. in cases in which the pouch packaging comprises a headspace, the release region may however be advantageously permanently connected to the remaining pouch packaging as demonstrated below by way of example.

[0038] FIGS. 3a to 3d once again show the first embodiment of the pouch packaging 10 according to the invention. Two arrows in FIG. 3a show how the pouch packaging 10 is reopened after filling and sealing for the first time. To this end, the front pouch side 12 and the rear pouch side are pulled apart at the sealing seam 16. As shown in FIG. 3b, this thus creates an opening located at the longitudinal end of the pouch packaging 10 opposite the pouch base. This opening is located in an opening portion which is defined by a surface located within an opening edge 26. At least part of the pouch contents can be removed from the pouch packaging 10 through the opening thus made in the pouch packaging 10.
If the pouch packaging 10 is not completely emptied, but instead part of the pouch contents remain in the pouch packaging 10, the pouch packaging according to the invention can simply be ressealed, wherein the outer dimensions of the pouch packaging 10 may simultaneously be adapted to the quantity of pouch contents remaining in the pouch packaging 10, with the result that less storage space is accordingly required for the opened pouch packaging 10. To this end, a release region 28, which comprises the outer layer 30 and the adhesive layer 32 of the laminate in the release portion 18, can be released from the inner layer of the release portion 18, as shown by an arrow in FIG. 3b. The opening edges 26 of the opening created in the pouch packaging 10 can then be pressed back together and the pouch packaging can be rolled down starting from the opening portion. The extent to which the pouch packaging 10 can be rolled down is primarily dependent on the quantity of the pouch contents remaining in the pouch packaging 10. It is no longer possible to roll the pouch packaging 10 down any further, the release region 28 can be attached over the rolled-down region of the pouch packaging 10. This is illustrated in FIGS. 3c and 3d by way of example, FIG. 3d showing less content remaining in the pouch packaging 10 than in FIG. 3c. In FIGS. 3c and 3d the release region 28 is indicated by a dashed line which shows the situation before it is folded over the rolled-down region of the pouch packaging 10. The folded-over release region 28 bonds to the rear pouch side as a result of the adhesive action of the adhesive layer of the release region 28 and thus holds the rolled-down region of the pouch packaging 10 reliably together with the result that the opening created in the pouch packaging 10 is ressealed and the pouch packaging 10 also takes up a volume which is adapted to the pouch contents remaining in the pouch packaging.

FIG. 4a shows a cross-section through the laminate from which the pouch front side 12 is created. For production reasons, it is advantageous to manufacture all sides of the pouch packaging 10 in one piece from the same laminate. As shown in FIG. 4a, the laminate comprises an inner layer 30 located on the inside of the pouch, an outer layer 34 located on the outside of the pouch and an adhesive layer 32 located between the inner layer 30 and the outer layer 34.

Note that the laminate may also comprise additional layers, such as a barrier layer or an adhesion-promoting layer or a varnish layer, although in this case only the three above-mentioned layers are illustrated for the sake of simplicity. When producing the pouch packaging 10 according to the invention, a material weakness 20 which extends substantially linearly is incorporated in the front pouch side 12. This is shown by way of example in FIG. 4b, where a laser beam 36 severes the outer layer 34 and the adhesive layer 32 along the material weakness 20 which extends substantially linearly. However, the inner layer 30 is not cut or severed by the laser beam 36. This is advantageous to ensure that an opening is not accidentally made in the release portion 18 of the pouch packaging 10 when the release region 28 is released from the inner layer 30. FIG. 4c shows how the release region 28 is released from the inner layer 30. The release region 28 comprises the outer layer 34 and the adhesive layer 32. It is important for the adhesive force between the adhesive layer 32 and the inner layer to be much weaker than the adhesive force between the adhesive layer 32 and the outer layer 34. The adhesive force between the adhesive layer 32 and the inner layer 30 may, for example, be additionally reduced by silicising or waxing the surface of the inner layer 30 facing the adhesive layer 32. The adhesive layer 32 is preferably made from a cold adhesive which allows the adhesive layer to be repeatedly bonded to and released from a surface on the outer side of the pouch. When the release region 28 is released from the inner layer 30, an adhesive surface 38 of the adhesive layer 32 is automatically exposed. This adhesive surface 38 of the adhesive layer can then be bonded to an outer side of the pouch to reseseal the pouch packaging 10.

FIGS. 5a to 5e show rough schematic diagrams of five different modifications of the first embodiment of the pouch packaging 10 according to the invention as shown in FIG. 1. In all of these figures, the front pouch side 12 can be seen with the upper sealing seam 16. However, the modifications are all different and also differ from the embodiment shown in FIG. 1 with regard to the shape and configuration of the respective release portions 218; 318; 418a; 418b; 518; 618a, 618b, 618c.

In FIG. 5a the release portion 218 is of substantially rectangular basic shape, two grip tabs 222a, 222b being provided on the side facing the sealing seam 16. Thanks to its substantially rectangular shape, a comparatively large surface portion of the front pouch side 12 which is also substantially rectangular can be used to form the release portion 218. By providing two grip tabs 222a, 222b in this shape of release portion 218, it is particularly easy for the consumer to release the release region, at least in part, from the remaining pouch packaging 10.

In the modification shown in FIG. 5b, the release portion 318 has a very similar shape to the release portion 18 in the first embodiment illustrated in FIG. 1. However, in this case, the grip tab 322 does not have a shape which stands out particularly from the shape of the remaining release portion 318. Instead, a continuously rounded portion of the release portion 318 facing the upper sealing seam 16 is designed as a grip tab 322. In this region the adhesive action of the adhesive layer 32 between the inner layer 30 and the outer layer 34 is reduced.

In order to distribute the holding force of the released pouch packaging 10 better along the transverse direction, i.e. along the direction in which the sealing seam 16 extends, it is also possible for the pouch packaging 10 to have more than one release portion as is shown in FIG. 5c by way of example. In the modification illustrated in this figure, the front pouch side 12 has two release portions 418a, 418b, with a basic geometric shape similar to, if somewhat narrower than the modification shown in FIG. 5b. This also relates to the design of the two grip tabs 422a, 422b.

As elastic recoil forces which usually arise in a partially folded or rolled-down pouch packaging 10 generally increase as the pouch packaging 10 is rolled or folded down further, a release portion 518 tapering towards the upper sealing seam 16 may be provided, as shown in FIG. 5d by way of example. This means that only a relatively narrow area of the release region in the vicinity of the grip tab 522 is available for resesealing the pouch packaging 10 when the pouch packaging 10 is only rolled or folded down to a small extent. However, as soon as the pouch packaging 10 is rolled or folded down further, the part of the release region which can be used for resesealing becomes gradually wider, with the result that it is always possible to achieve a sufficient adhesive action to reseseal the pouch packaging 10.

A similar effect can also be achieved with the embodiment shown in FIG. 5e. In this case, three release portions 618a, 618b, 618c are provided on the front pouch.
However, the three release portions 618a, 618b, 618c have varying lengths, i.e. the middle release portion 618b is longer than the other two release portions 618a, 618c. When the pouch packaging 10 is only rolled or folded down to a small extent, only the middle release region is thus available to seal the pouch packaging 10. However, if the pouch packaging 10 is subsequently rolled or folded down further, say because additional contents have been removed from the pouch packaging 10, the other two release regions can also be used to securely seal the pouch packaging 10. Also note that release portions 618a, 618b, 618c have grip tabs 622a, 622b, 622c respectively, which are similar to those in the modifications shown in FIG. 5c.

A further additional note is that the modification shown in FIGS. 5a to 5e can of course also be used in the embodiment illustrated in FIG. 2.

5. Pouch packaging (10: 110) according to claim 1, characterised in that an outer edge of the release portion (18; 118; 218; 318; 418a, 418b; 518; 618a, 618b, 618c) being formed in the at least one laminate pouch side (12; 112), in which the release region can be detached fully from the laminate of the at least one laminate pouch side (112).