

**Childproof package for comparatively large-surfaced and
pressure-sensitive products
such as transdermal therapeutic systems (TTS)**

The invention relates to a childproof package for comparatively large-surfaced and pressure-sensitive products such as transdermal therapeutic systems (TTS) etc.

It is known that to ensure the important "childproof" quality e.g. of a package in the form of a bag, it is necessary to use highly tear-resistant webs of packaging material for the production of said package. These webs of packaging material must also have barrier characteristics to prevent the permeability of the packaging material for the used active substance and its volatilization products as well as steam and air moisture. In addition, a strong, uninterrupted and tightly sealed seam extending entirely about the periphery of the package must form an impermeable sealed border of the package to maintain the necessary barrier function. Furthermore, specially chosen sealing materials or combinations of sealing materials such as e.g. TE-peel, peel lacquers etc. must be employed to achieve the desired peel characteristics at tightly sealed seams. Childproof packages for solid pharmaceuticals already exist on the market. The packages in question, such as blister strips, blister cards and blister bands, are sealed with childproof materials and can be opened without the aid of tools. The contents of these packages are pressure-insensitive products such as tablets, pills, capsules, etc. which are removed by exerting force and pressing them out of the package through a cover sheet which mostly consists of aluminum foil. The force necessary is such that it cannot be exerted by children's hands.

A number of states are currently considering or have already enacted binding regulations concerning the introduction of childproof packages for a series of pharmaceutical products. This particularly concerns pharmaceuticals which present a high risk especially for children because the improper use or intake of their formulation has a toxic effect. On the other hand, medicaments which are flexible and pressure-sensitive due to their special structure and application form cannot be pressed through a package as described above. Yet many patients consider it disadvantageous and annoying if they have to use a tool such as a knife or a pair of scissors to remove a therapeutic product from a childproof package.

It is the object of the invention to provide an especially childproof package for comparatively large-surfaced and pressure-sensitive products such as transdermal therapeutic systems (TTS) etc. which can be opened without the aid of a tool and without exerting any pressure.

The invention achieves this object by means of a childproof package of the kind described in the introductory part of Claim 1 and having the qualities named in the characterizing part.

The especial advantages of this invention are that it provides for a childproof package which can easily be opened without the aid of a tool and totally without exertion of pressure on the product and that the package in this form is ideally suited for the packaging of comparatively large-surfaced and pressure-sensitive therapeutic products such as transdermal therapeutic systems, with the stiffness of the sealed-together sheets in the vicinity of the weakening advantageously being such that children do not possess the manual strength necessary for flexing the rupturing aid, but adults do.

One embodiment provides that after the carrier sheet is ruptured, the broken-off piece of said sheet forms a gripping aid for peeling the cover sheet from the edge of the carrier sheet, which considerably facilitates the exposure and removal of the product.

Advantageous embodiments of the childproof package are provided for according to the dependant claims.

Further details, characteristics and advantages of the invention are given in the following explanation of the example schematically presented in the drawings.

Fig. 1 shows a cross-sectional view of a childproof package with a rupturing aid in the carrier sheet;

Fig. 2 shows a top plan view of the childproof package according to Fig. 1;

Fig. 3 shows a sectional view of the childproof package after the rupturing aid is broken open and during the peeling of the cover sheet from the product with the help of the broken-open gripping aid.

Fig. 4 shows a sectional view of an embodiment of the childproof package with a receiving tray, an adjacent gripping depression on the carrier sheet, and an adhesive product.

Fig. 5 shows a sectional view of a further embodiment of the package with a product adhering to the carrier sheet and an adjacent gripping aid.

In Fig. 1, the childproof package 10 for comparatively large-surfaced and pressure-sensitive therapeutic products 1 such as transdermal therapeutic systems (TTS) etc.

according to the invention is embodied as a blister-peel-package with a comparatively dimensionally stable, transparent or translucent carrier sheet 2 and a peelable, comparatively highly flexible and extremely tear-resistant cover sheet 3 and with at least one receiving space 4 for the product 1. The package can be sealed with sealing material at the adhesive surfaces of the edge 5 extending entirely about the periphery of the package. It has a rupturing aid 6 in the vicinity of the edge 5 in the form of a weakening of the sheet 2, for example by scoring, perforating or embrittlement, etc., along a line x-x of the package 10. This rupturing aid can be broken by flexing the weakened sheet 2 and thus exposes a broken edge 20 by means of which the carrier sheet 3 can be gripped and peeled from the carrier sheet 2. (Fig. 3)

In this embodiment, the necessary childproof quality of the package 10 is achieved according to the invention by providing that the stiffness of the sheets 2 and 3, which are sealed together at the edge 5 of the package, in relation to the weakening 9 in the vicinity of the rupturing aid 6 along the connection line x-x is such that children do not possess the manual strength necessary for flexing the rupturing aid 6, but adults do.

To illustrate the arrangement and embodiment of the various elements of the childproof package 10, Fig. 2 contains a top plan view of said package. This shows the position of the product 1, e.g. a round TTS, in the center of the package 10 within a receiving space 4 which is formed out of the cover sheet 3, as well as the sealed peripheral areas 5. In the vicinity of the peripheral areas 5 beyond the thin broken line, the carrier and cover sheets 2 and 3 are sealed with sealing material.

Fig. 3 shows a package 10 according to the invention after the rupturing aid 6 in the carrier sheet 2 is broken,

resulting in a gripping aid 14 with the broken edge 20 connected to the cover sheet 3. Said gripping aid 14 can be bent back and used to peel off the cover sheet 3 to expose the product 1. This presents an uncomplicated possibility of opening the package 10 without exerting pressure on the product 1 contained within.

Fig. 4 shows an embodiment of the package 10 in which the carrier sheet 2 has at least one receiving tray 8 for a therapeutic product 1. To enable an easy grasping of the product 1 after the package is opened, the package can have an additional gripping depression 11 at the edge of the receiving tray 8 which facilitates taking hold of the product 1. This is especially expedient if, as in the example in Fig. 4, the product 1 adheres to the carrier sheet 2 by means of an adhesive layer 19. To guarantee the unproblematic release of the product 1 with its adhesive layer 19 from the carrier sheet 2 after said carrier sheet 2 is broken at the rupturing aid 16, the carrier sheet 2 has an additional weakening 16' which results in a broken edge 21 upon flexing. The weakening 16 of the carrier sheet 2 can preferably be embodied as a nominal breaking line and preferably be placed close to the gripping depression 11.

Fig. 5 shows another embodiment of the package 10 in which an adhesive product 1 is applied to a level, comparatively stiff carrier sheet 2 and is then covered and enveloped, with almost complete form closure, with an especially flexible cover sheet 3, the package being sealed at the periphery. As an additional practical measure, a rigid gripping aid 17 in the form of a tab can be arranged extending from the edge of the patch 1 adhering to the carrier sheet to facilitate the release of said pressure-sensitive adhesive patch 1.

CLAIMS



1. Childproof package (10) for comparatively large-surfaced and pressure-sensitive therapeutic products (1) such as transdermal therapeutic systems (TTS), embodied as a blister-peel package with a comparatively dimensionally stable, transparent or translucent carrier sheet (2) and a peelable, comparatively highly flexible and extremely tear-resistant cover sheet (3), having at least one receiving space (4) for the product (1) and sealable with sealing material at the adhesive surfaces of the edge (5) extending entirely about the periphery of the package, said package characterized in that it has a rupturing aid (6) in the form of a weakening (9) of the sheet (2) along a connection line (x-x) of the package (10), for example by scoring, perforating or embrittlement, said rupturing aid being frangible through flexing and thus exposing a broken edge (20) at which the cover sheet (3) can be gripped and peeled from the carrier sheet (2), and the stiffness of the sealed-together sheets (2) and (3) is so chosen, in relation to the weakening (9), that children are unable to exert the manual strength necessary for flexing the rupturing aid (6), but adults are easily capable of doing so.

2. Childproof package according to Claim 1, characterized in that after the carrier sheet (2) is ruptured, the broken-off piece of said sheet (14) forms a gripping aid for peeling the cover sheet (3) from the edge (5) of the carrier sheet (2).

3. Childproof package according to Claim 1 or 2, characterized in that the carrier sheet (2) has a receiving tray (8) for the product (1), with an additional gripping depression (11) placed at the edge

This Sheet Has Been Replaced





of said carrier tray to facilitate taking hold of the product.

4. Childproof package according to one or more of the Claims 1 to 3, characterized in that the product (1) is applied to a level, comparatively stiff carrier sheet (2) and is covered and enveloped in its entire form with an especially flexible cover sheet (3), the package being sealed at the periphery.
5. Childproof package according to one or more of the Claims 1 to 4, characterized in that the cover sheet (3) is conceived as a release-liner for an adhesive product (1) and in that said package has a gripping aid (17) extending from the edge of the product (1) to facilitate the peeling of said product (1) from the carrier sheet.
6. Childproof package according to one or more of the Claims 1 to 5, characterized in that the carrier sheet (2) is conceived as a release-liner for an adhesive product (1) and has an additional weakening (16') in the vicinity of said product, said additional weakening embodied as a nominal breaking line in the carrier sheet (2), exposing a broken edge (21) when flexed and forming a gripping aid for peeling off the product (1).
7. Childproof package according to one or more of the Claims 1 to 6, characterized in that a rigid gripping aid (17) in the form of a tab is arranged extending from the edge of the adhesive patch (1) to facilitate the release of said patch (1).

This Sheet Has Been Replaced

