

## PATCH PACKAGING

[0001] The present application claims priority to earlier Singapore patent application Nr. 10202004070R, which was filed on 04 May 2021 and has the title of Respirator. All  
5 relevant subject matter and/or content of the earlier Singapore patent application is herein incorporated by reference in its entirety, and/or wherever appropriate.

[0002] The present application relates to a patch packaging, and more particularly to a scented patch packaging for emitting scented smell that is capable to enhance and alter  
10 the mood of the users. The present application also relates to a method of making the patch packaging and a method of using the patch packaging.

[0003] Patch packaging is used for holding a patch for various applications. However, current patch packaging is not easy to use and also not appealing in appearance and  
15 unable to control the strength of the scent emission according to the preference of the users to achieve a balance mood therapeutic enhancement. The present application discloses a patch packaging to solve the problems mentioned above.

[0004] As a first aspect, the present application discloses a patch packaging which  
20 comprises a primary container for holding one or more patches; and a secondary container for housing the primary container.

[0005] As a second aspect, the present application discloses a method of using the patch packaging as described in the first aspect. The method of using the patch packaging  
25 comprising a first step of opening the secondary container for taking out the primary container; and a second step of opening the primary container for taking out the at least one patch.

[0006] As a third aspect, the present application discloses a method of making the patch  
30 packaging as described in the first aspect. The method of making the patch packaging comprises a first step of putting the at least one patch into the primary container; and a second step of putting the primary container into the secondary container.

[0007] The accompanying figures (Figs.) illustrate embodiments and serve to explain principles of the disclosed embodiments. It is to be understood, however, that these figures are presented for purposes of illustration only, and not for defining limits of relevant applications.

5

Fig. 1 illustrates a front view (a) and a rear view (b) of a primary container according to an embodiment;

Fig. 2 illustrates a process of using the primary container in Fig. 1;

10 Fig. 3 illustrates a perspective view of the primary container according to another embodiment;

Fig. 4 illustrates another method of using the primary container in Fig. 3;

Fig. 5 illustrates a front view (a) and a rear view (b) of a variation of the primary container in Fig. 1 by having a string hole;

15 Fig. 6 illustrates a perspective view of a variation of the primary container in Fig. 3 by having a string hole;

Fig. 7 illustrates a perspective view of a secondary container according to an embodiment;

Fig. 8 illustrates a perspective view of variations of the secondary container in Fig. 7;

20 Fig. 9 illustrates a perspective view of another secondary container according to another embodiment;

Fig. 10 illustrates a perspective view of another secondary container according to another embodiment;

25 Fig. 11 illustrates a perspective view of another secondary container according to another embodiment;

Fig. 12 illustrates a schematic view of an application of a patch to a mask according to an embodiment;

Fig. 13 illustrates a cross-sectional view of various structure of the patch;

30 Fig. 14 illustrates a perspective view of another patch having a patch-patch configuration;

Fig. 15 illustrates a patch that is segmented as petals for being torn off;

Fig. 16 illustrates multiple designs of sealed patches; and

Fig. 17 illustrates sealed patches that have lavender, peppermint, lemon and frankincense scents.

[0008] Fig. 1(a) illustrates a front view of a primary container 100 according to an embodiment. The primary container has a sachet pack 110 for holding a patch 120 therein, without a window or a window 130 on a front side of the sachet pack 110 for observing the patch 120, and a tear notch 140 attached to the sachet pack 110 for easily opening the sachet pack 110 by tearing off or peeling off, in order to take out the patch 120. The sachet pack 110 may have various profiles such as a squarish profile as shown in Fig. 1. The squarish profile has a length and a width of 50 to 60 millimeters (mm), and a thickness determined by the patch 120. The thickness is optionally in a range of 0.5 millimeter (mm) to 10 millimeters (mm), particularly in a range of 1 millimeter (mm) to 5 millimeters (mm), and more particularly in a range of 1 millimeter (mm) to 3 millimeters (mm) or in a range of 3 millimeters (mm) to 5 millimeters (mm). The patch 120 can be made to various size and shape (such as circular shape, square with either rounded edges or non-rounded edges, oval shape, triangular, leaf, petal, flower, shape) as long as being accommodated inside the sachet pack 110. In addition, various designs can be applied onto a front surface of the sachet pack 110, such as artwork, logo, brand, product name, tagline and the like.

[0009] Fig. 1(b) illustrates a rear view of the primary container 100. More information can be applied onto a rear surface of the sachet pack 100, such as product description, usage or cautionary instructions, manufacturing information, product design information as well as QR code or bar code for tracking the sachet pack 110. Fig. 1(c) shows that the patch 120 is taken out of the sachet pack 110 after tearing off or peeling off from the tear notch 140.

[0010] The sachet pack 110 is optionally made of biodegradable or minimally recyclable materials for being more environmentally friendly. The sachet pack 110 comprises a high-barrier laminated structure such as Kraft paper with Cast Unoriented Polypropylene (CPP), Oriented Polypropylene (OPP) or aluminum (Al) lamination to provide a barrier in preventing fragrance from escaping from the sealed sachet pack 110. Similarly, the sachet can be designed without or with a window and peelable or non-peelable hole. The window 130 also comprises the high-barrier laminated structure for preventing the fragrance from escaping from the sealed sachet pack 110. As a result, the patch 120 can be stored within the sachet pack 110 with the fragrance for a minimum of 5 years'

shelf-life. More importantly, the sachet pack 110 can be suitable for slightly oily patch 120 inside the sachet pack 110. The window 130 is transparent or translucent to human eyes such that consumers can see through the sachet pack 110 and view the patch 120 inside the sachet pack 110. The peelable hole for selective and subtle emission of fragrance.

[0011] Fig. 2 illustrates a process of using the primary container 100 in Fig. 1. The method of using comprises a first step 160 of opening by hand the primary container 100 via the tear notch 140, and an arrow 162 shows a direction to tear off from the tear notch; a second step 170 of taking out the patch 120 from the sachet pack 110; and a third step 180 of completely removing the patch 120 from the primary container 100. Once an opening of the primary container 100 is torn from the tear notch 140, the primary container 100 cannot be sealed again at the opening; and thus it is preferred to include one patch only into the primary container 100. Alternatively, a zipper seal may be installed to the opening and thus the primary container 100 can house multiple patches 120 for repetitive uses by opening and closing the zipper seal.

[0012] Fig. 3 illustrates a perspective view of another primary container 200 according to another embodiment. The primary container 200 has a similar structure as the primary container 100 such as a sachet pack 210 for holding a patch 220 (shown in Fig. 4) and a window 230 for observing the patch 220. However, instead of the tear notch 140, the primary container 200 has an open-hole 240 on the window 230 for subtle emission of scent from the sachet pack without the needs of removing the patch inside the sachet ~~taking the patch 220 out from the sachet pack 210~~. In particular, the open-hole 240 is sealed with a peelable tape 242 when not in use. Similarly, the patch 220 can be made to various size and shape as long as being accommodated inside the sachet pack 210. For instance, the patch can be of a petal design of maximum scent strength. Users can selectively peel/tear off each petal from the patch to reduce the scent strength according to their desire.

[0013] Fig. 4 illustrates another method 250 of using the primary container 200 in Fig. 3. The method of using 250 comprises a first step 260 of peeling off one end of the peelable tape 242 from the window 230; a second step 270 of exposing the open-hole 240 from the peelable tape 242; and a third step 280 of without taking the patch 220 out of the

sachet pack 210 from the open-hole 240. In contrast to the primary container 100, the open-hole 240 of the primary container 200 can be sealed again by tightly adhering the peelable tape 242 back to the window 230. Therefore, the primary container 200 may include multiple patches 220 for repetitive uses.

5

[0014] Fig. 5(a) illustrates a front view of a variation 190 of the primary container 100 in Fig. 1 by having a string hole 192. A string 194 can loop into the string hole 192 for consumers to hand the primary pack 100 indoor or in a car for slowly releasing scent from the primary container 100. Fig. 5(b) illustrate a rear view of the variation 190 in which it is clear that the string hole 192 is throughout the sachet pack 110.

10

[0015] Fig.6 illustrates a perspective view of a variation 290 the primary container 200 in Fig. 3 by having a string hole 292. Similarly, a string 294 can loop into the string hole 292 for consumers to hand the primary pack 200 indoor or in a car for slowly releasing scent from the primary container 200.

15

[0016] Fig.7 illustrates a perspective view of a secondary container 300 according to an embodiment. Similar to the primary container 100, the secondary container 300 also has a tear notch 310 for making an opening to the secondary container 300 in order to take out the primary container 100, 200. A zipper seal may be installed to the opening for sealing the secondary container 300 after the tear notch 310 is torn; and thus the secondary container 300 can be used repetitively by opening and closing the zipper seal. In addition, the secondary container 300 also has a transparent panel 320 for visually observing the primary container 100, 200 housed inside the secondary container 300. The secondary container 300 is made of pliable materials such as Kraft paper or plastic films; and thus can be folded or deformed for fitting into smaller space.

20

25

[0017] Fig.8 illustrates a perspective view of another secondary container 400 according to another embodiment. In contrast to the secondary container 300, the secondary container 400 may be made of a hard but light-in-weight material for on one hand resisting deformation or even damage by external pressure or shock and on the other hand being easy and conformable to carry in person. The material is also preferably cheap for lowering costs of the secondary container 400. In some implementations, the secondary container 400 is made of cardboard; and in other implementations, the

30

secondary container 400 is made of hard plastics (such as high density polyethylene (HDPE)).

5 [0018] The secondary container 400 has a cubic profile with a length of 70 millimeters (mm), a width of 65 millimeters (mm) and a thickness of 25 millimeters (mm). Therefore, the secondary container 400 has enough space for housing the primary container 100, 200. The secondary container 400 also has a transparent panel 410 for visually observing the primary container 100, 200 without opening the secondary container 400. In addition, the secondary container 400 also has a hanging hole 420 for carrying the  
10 secondary container 400 more easily.

[0019] Fig.9 illustrates a perspective view of variations 430 of the secondary container 400 in Fig. 8. The variations 430 have similar designs with but different colors from the secondary container 400. It is understood that the variations 430 shown in Fig. 8 are  
15 exemplary and do not include all embodiments of the variations 400. It is also obvious that all the embodiments of the variations 430 would fall into the scope of the secondary container 400.

[0020] Fig.10 illustrates a perspective view of another secondary container 500 according to another embodiment. In contrast to the secondary container 300, 400, the  
20 secondary container 500 can be partially opened for displaying the primary container 100, 200 over a counter in an elegant and appealing way to attract consumers. The secondary container 500 may provide a means to house at least 50 pieces of the primary container 100, 200.

25 [0021] In some implementations, the secondary container 500 has a main body 510 for housing the primary container 100, 200 and a cap 520 openably attached to the main body 510 for opening and closing the secondary container 500. The secondary container 500 preferably has a torque hinge for attaching the cap 520 to the main body such that  
30 the cap 520 can be held in place at fixed angles to the main body 510. In addition, the main body 510 shall have a heavier weight than the capping for balancing the secondary container 500 on the counter. The main body 510 has only one displaying unit 530 for showing the primary containers 100, 200; and thus all the primary containers 100, 200 are displayed in a mixed way.

[0022] Fig.11 illustrates a perspective view of another secondary container 600 according to another embodiment. The secondary container 600 has a same structure as the secondary container 500 (such as a main body 610 and an openably attached cap 620) except that the main body 610 has multiple displaying units 630 (such as 16 shown in Fig. 11). Therefore, primary containers 100, 200 having different patches 120, 220 can be classified and put into their respective displaying units 630.

[0023] Fig.12 illustrates a schematic view of an application of the patch 120, 220 to a respirator 700 according to an embodiment. The respirator 700 comprises a fixture 710 (not shown) connected to the patch 100, 200 for fastening the patch 100, 200 onto a face of a user; while the patch 120, 220 is used for filtering airborne particles. In particular, the patch 120, 220 comprises at least one configurable filter for adapting to filtration or enhanced requirement of the user.

[0024] The patch 120, 220 offers protection, filtration, dust filtering, particle filtering (N95), surgical Mask level protection, cosmetic enhancement (e.g. reducing skin agitation), UV protection, eye-bag, black-head treatment, etc. The patch 120, 220 may also have fragrance / odour removal properties, such as when working in rubbish dump, etc., preventing bad- breathe (i.e. enzymatic / antibacterial agents (e.g. chlorophyll, activated charcoal, etc.)) and after-smoking elimination. The patch 120, 220 may still provide UV-reflection (reduce heat up), one or more Cooling/Warming layer, Hygiene Barrier (e.g. for food industries), Higher barrier support needs (e.g. transform one-ply mask into multi-layers mask, Anti-bacterial /virus/germs, Enhancing layer (e.g. used on rewashable to minimize contamination of the rewashable mask (both inside and outside surfaces) in order to reduce replacement/washing frequency (can also be used on disposal mask) , Moisture (saliva) absorption, Aesthetical purposes (beauty, collagen coating, cartoon, slogan, etc.), Bacterial/Virus/Germ/Sickness detection layer (e.g. Colour change), Fever detection layer (e.g. colour change), time for replacement indicator (e.g. colour change), Single/Multi plies, Single/Multi layers lamination, 3D printable, Non-flammable, CO<sub>2</sub> or CO removal especially for road users, Flat or 3D design, Inter-layer friction-less (protect facial stress especially in ladies); moisture absorbent / Outer later moisture/bacterial/virus/dust/mosquito repel, beside a slow release function, it could include a "Press-me" as and when required device that could

emit an immediate higher dosage of example fragrance / anti-bacterial agent to combat a sudden surrounding threat for instance someone coughing in a confined area e.g. in a lift or nearby a dumpster which is/are Usable in Disposable/washable/Recyclable masks.

5

[0025] The patch 120, 220 may contain medication or medicated scent, content or liquid. For example, the medicated patch is soaked with decongestant, or nasal decongestant, either pseudoephedrine or phenylephrine. Intranasal corticosteroids can also be used as decongestants and antihistamines onto the patch for alleviating runny nose, nasal itch, and sneezing. The patch 120, 220 can additionally contain difflam-C Solution in order to relief sore throat and mouth pain, as well as helps fight minor infections.

10

[0026] Fig. 13 illustrates a cross-sectional view of various structure of the patch 120, 220. Fig. 13(a) shows that the patch 120, 220 comprises a highly porous nano/submicro material 800 (such as ceramic or clay), which provides three-dimensional (3D) tunneling structure for entrapping essential oil or other fluids in order to slowly emit the fragrance at a controlled and uniform strength over a longer period time (such as more than 8 hours) via evaporation or diffusion via warmth of the body or breath. In some implementations, the patch 120, 220 is made of nanofibers where a plurality of voids are formed therein for containing chemicals (such as moisture/bacterial/virus/dust/mosquito repel) for various functions. For example, spices particles are incorporated inside the voids for dissipating scented smell from the patch 120, 220 (herein known as scented patch).

15

20

[0027] Fig. 13(b) shows that the patch 120, 220 comprises a peelable adhesive layer 810 (such as double-sided tape). The peelable adhesive layer 810 has a first surface 812 and a second surface 814 opposed to each other, both of which have adhesive non-staining properties. The nano/submicron material 800 is thus adhered onto the first surface 812; while a stick-free layer 816 is adhered onto the second surface 814. By peeling off the stick-free layer 816 from the second surface 814, the patch 120, 220 can be hung or stuck onto an object or body of a user.

25

30

[0028] Fig. 13(c) shows that the patch 120, 220 comprises a hydrophobic material 830 (such as repellent plastics) coated on and completely covering the nano/submicron

material 800. Since the hydrophobic material 830 slows down the essential oil or other fluids absorbed in the hydrophobic material 830 from diffusing or evaporating out of the hydrophobic material 830, the patch 120, 220 can slowly emit the fragrance for a longer period of time.

5

[0029] Fig. 13(d) shows that the patch 120, 220 comprises a hydrophilic materials 840 (such as gel) coated beneath the nano/submicron material 800 for absorbing and entrapping more essential oil or other fluids in order to enhance emission of the fragrance.

10

[0030] Alternatively to Fig. 13 (c), Fig. 13(e) shows that the hydrophobic material 830 partially covers the nano/submicron material 800 for varying diffusion rate of the fragrance out of the nano/submicron material 800.

15 [0031] Alternatively to Fig. 13 (d), Fig. 13(f) shows that the hydrophilic material 840 partially covers the nano/submicron material 800 for varying diffusion rate of the fragrance out of the nano/submicron material 800.

[0032] Fig. 14 illustrates a perspective view of another patch 900 having a patch-patch configuration. Different from the patch 120, 220 which is an entire piece, the patch 900 may have several pieces either assembled together or disassembled separately. For example, the patch 900 has an inner patch 910 configured in any known design to be embedded inside an outer patch 920. In some implementations, the inner patch 910 and the outer patch 920 are clip-fitted to each other. For example, the inner patch 910 has a first connector 912 and a second connector 914 opposed to each other; while the outer patch 920 has a third connector 922 and a fourth connector 924 opposed to each other. Since the first connector 912 and the second connector 914 can be fitted into the third connector 922 and the fourth connector 924 respectively by clicking the first connector 912 and the second connector 914, the inner patch 910 can be either attached to or detached from the out patch 920. The patch 900 has more versatile applications than the patch 120, 220. For example, the inner patch 910 can be detached away from the outer patch 920 if weaker fragrance is preferred; while the inner patch 910 can be attached to the outer patch 920 if stronger fragrance is needed. For another example,

the inner patch 910 and the outer patch 920 may emit different fragrances which can be either separately emitted or mixedly emitted.

5 [0033] The patch sachet can be either with window or without as well as a peelable hole with window or without. If peelable hole is used, scent patch can be left inside the sachet as scent shall emit from the hole. Scent patch can be of petal or flower design such that user can choose to cut/tear off each petal if they find the scent strength is too strong. This gives user the control. The patch sachet has been optionally added possibilities of wearing by sticking onto a facemask or on a pillow. Draft color packaging artworks are  
10 further included. The brand name of the product (i.e. patch sachet) is most likely "Mood@Therapy™".

[0034] In the application, unless specified otherwise, the terms "comprising", "comprise", and grammatical variants thereof, intended to represent "open" or "inclusive" language  
15 such that they include recited elements but also permit inclusion of additional, non-explicitly recited elements.

[0035] As used herein, the term "about", in the context of concentrations of components of the formulations, typically means +/- 5% of the stated value, more typically +/- 4% of  
20 the stated value, more typically +/- 3% of the stated value, more typically, +/- 2% of the stated value, even more typically +/- 1% of the stated value, and even more typically +/- 0.5% of the stated value.

[0033] Throughout this disclosure, certain embodiments may be disclosed in a range  
25 format. The description in range format is merely for convenience and brevity and should not be construed as an inflexible limitation on the scope of the disclosed ranges. Accordingly, the description of a range should be considered to have specifically disclosed all the possible sub-ranges as well as individual numerical values within that range. For example, description of a range such as from 1 to 6 should be considered to  
30 have specifically disclosed sub-ranges such as from 1 to 3, from 1 to 4, from 1 to 5, from 2 to 4, from 2 to 6, from 3 to 6 etc., as well as individual numbers within that range, for example, 1, 2, 3, 4, 5, and 6. This applies regardless of the breadth of the range.

[0036] It will be apparent that various other modifications and adaptations of the application will be apparent to the person skilled in the art after reading the foregoing disclosure without departing from the spirit and scope of the application and it is intended that all such modifications and adaptations come within the scope of the appended

5 claims.

## Reference Numerals

|    |     |                                        |
|----|-----|----------------------------------------|
|    | 100 | primary container;                     |
|    | 110 | sachet pack;                           |
| 5  | 120 | patch;                                 |
|    | 130 | window;                                |
|    | 140 | tear notch;                            |
|    | 150 | method of using the primary container; |
|    | 160 | first step;                            |
| 10 | 162 | arrow;                                 |
|    | 170 | seconds step;                          |
|    | 180 | third step;                            |
|    | 190 | variation;                             |
|    | 192 | string hole;                           |
| 15 | 194 | string;                                |
|    | 200 | primary container;                     |
|    | 210 | sachet pack;                           |
|    | 220 | patch;                                 |
|    | 230 | window;                                |
| 20 | 240 | open-hole;                             |
|    | 242 | peelable tape;                         |
|    | 250 | method of using the primary container' |
|    | 260 | first step;                            |
|    | 270 | second step;                           |
| 25 | 280 | third step;                            |
|    | 290 | variation;                             |
|    | 292 | string hole;                           |
|    | 294 | string;                                |
|    | 300 | secondary container;                   |
| 30 | 310 | tear notch;                            |
|    | 320 | transparent panel;                     |
|    | 400 | secondary container;                   |
|    | 410 | transparent panel;                     |
|    | 420 | hanging hole;                          |

- 430 variations;
- 500 secondary container;
- 510 main body;
- 520 cap;
- 5 530 displaying unit;
- 600 secondary container;
- 610 main body;
- 620 cap;
- 630 displaying unit;
- 10 700 respirator;
- 710 fixture;
- 800 nano/submicron material;
- 810 peelable adhesive layer;
- 812 first surface;
- 15 814 second surface;
- 816 stick-free layer;
- 830 hydrophobic material;
- 840 hydrophilic material;
- 900 patch;
- 20 910 inner patch;
- 912 first connector;
- 914 second connector;
- 920 outer patch;
- 922 third connector;
- 25 924 fourth connector;

## Claims

1. A patch packaging comprising:
  - a patch with controllable scent strength that provide mood therapy;
  - 5 ➤ a primary container for holding at least one patch; and
  - a secondary container for housing the primary container.
2. A patch packaging substantially as described with reference to the drawings.
- 10 3. A method of using the patch packaging of claim 1 or 2 comprising the steps of:
  - opening the secondary container for taking out the primary container; and
  - opening the primary container for taking out the at least one patch;
  - wherein the at least one patch comprises
  - optional peelable hole for subtle emission of scent from the sachet without
  - 15 removing the patch inside the pack; and
  - the patch packaging is configured to allow users to tear/remove some portion of the patch to control the strength of the fragrance.
- 20 4. A method of using the patch packaging of claim 1 or 2 comprising the steps which can be inferred from the drawings.
5. A method of making the patch packaging of claim 1 or 2 comprising the steps of:
  - putting the at least one patch into the primary container; and
  - putting the primary container into the secondary container.
- 25 6. A method of making the patch packaging of claim 1 or 2 comprising the steps which are substantially described or inferred from the description and drawings.