A transport tray can be commonly used for transporting two articles whose shapes and thickness are different between factories, and an exterior box also can be commonly used. A first placement section is formed on a surface side, a second placement section is formed on a back side to overlap with the first placement section. The first placement section includes a depressed part having an enough depth for receiving a LC cell, and the cell is held at a predetermined position by a bottom face and a side face that constitute the depressed part. The second placement section is formed by the supporting walls that protrudes to the back side and that has an enough depth for receiving a LC module. The module placed in the region surrounded by the supporting walls is held at a predetermined position by a bottom face and a side face that constitute the region.
FIG. 7A

FIG. 7B

Tray 10 Supporting Wall 14 Supporting Wall 15b Supporting Wall 15a
Second Section Placement 40 Bottom Face 15b
Back 15a 15b 15a 16b
Surface 17a 12 16a 17a
First Placement Section Bottom Face
FIG. 10

Surface 11

12a

Part A

12a

LC Cell 30

12a

31

First Placement Section

Tray 10a

12a

FPC Substrate Section
FIG. 13

Surface 11

Tray 10b

Bi-Pane 32

First Placement Section 12b

X V

X V
FIG. 14

C Module

XVI - 15C Supporting Wall
14b Supporting Wall Placement Section

Back
13

LC Module

15a

Tray
10b

14b

15c
Supporting Wall

X VI

15b
Supporting Wall

14b
Second Placement Section
TRANSPORT TRAY, AND TRANSPORTING PACKAGE AND METHOD USING THE SAME

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention
The present invention relates to a transport tray, and a transporting package and a transporting method using the same. More particularly, the present invention relates to a transport tray capable of alternately transporting packaging articles whose shapes and thickness are different from each other, and a transporting packaging tray, and a transporting method using the tray.

[0002] 2. Description of the Related Art
Recently, it has been becoming popular for companies to assemble liquid crystal modules (which will be abbreviated as “LC modules” hereinafter) by utilizing so-called EMS (Electronics Manufacturing Service), i.e., by entrusting a factory other than the companies’ factories with the assembling operation. In many cases, as shown in FIG. 1, the factory for manufacturing liquid crystal cells (which will be abbreviated as “LC cells” hereinafter) and the factory for assembling LC modules are distant from each other. Therefore, the LC cells fabricated in the LC cell fabrication factory are packaged and then, transported to the LC module assembly factory. The LC modules finished in the LC module assembly factory are packaged again, and transported to the entrusting company or the customer designated place.

[0003] Since the LC cells and the LC modules have different shapes and different thicknesses, the LC cell and the LC modules have been transported using different packing materials so far. Thus, there is the strong need to save the resources and reduce the transportation cost by utilizing the packaging and transporting materials. To address this need, various improvements about the packaging materials have been proposed.

[0004] A first example of the aforementioned improvements is a container disclosed by the Japanese Unexamined Patent Publication No. 2006-273347. This container is capable of receiving different sized semiconductor chips, and comprises a placement section formed on the surface and an auxiliary placement section formed on the back. When two of the containers whose surfaces are oriented upward are stacked vertically and turned upside down, the semiconductor chip received in the placement section is moved to the auxiliary placement section and received therein. Thus, faceup and facedown of the semiconductor chips can be chosen without transferring the semiconductor chips themselves.

[0005] A second example of the aforementioned improvements is a placement jig or tray disclosed by the Japanese Unexamined Patent Publication No. 2006-143246. This jig comprises three types of depressed parts whose opening areas are different from each other formed in the pocket section, in which the side wall of the pocket section is stepped. Different sized semiconductor chips can be received in the same pocket section. Moreover, inter-layer materials are inserted into the gaps so that the semiconductor chip placed in the pocket section does not jolt during transfer.

[0006] A third example of the aforementioned improvements is a transport tray disclosed by the Japanese Unexamined Patent Publication No. 2010-235142. This transport tray is commonly used for transportation of sub-modules (half-finished goods) and transportation of modules (finished goods) into which the sub-modules are assembled. This tray comprises a first depressed part formed in the first region, a second depressed part formed in the second region which is included in the first region, and a first protruded part formed in the second region which is included in the second region.

The sub-module is held in the first depressed part and the module is held in the second depressed part, which means that this tray can be commonly used for both the sub-module and the module.

[0009] A fourth example of the aforementioned improvements is a placement tray disclosed by the Japanese Unexamined Patent Publication No. 2008-127062. This placement tray comprises two supporting parts in the depressed part for placement, in which the supporting parts have different depths. The article held in the upper position is contacted with the article held in the lower position and held by the same.

[0010] With the container disclosed by the Publication No. 2006-273347 and the placement jig disclosed by the Publication No. 2006-143246, different sized semiconductor chips can be held and transported. However, this container and this jig are adaptable only for change of the semiconductor chip size, and invented taking in-factory transfer into consideration. Therefore, they cannot be used for the aforementioned inter-factory transportation of the LC cells and the LC modules having different shapes and different thicknesses.

[0011] The transport tray disclosed by the Publication No. 2010-235142 can be commonly used for transportation of the sub-modules (half-finished goods) and transportation of modules (finished goods) having different shapes and different thicknesses. However, when the trays are stacked vertically, the overall thickness (height) of this stack varies dependent upon the thickness of the sub-module and the thickness of the module. Thus, an exterior box for receiving the stack of the trays cannot be commonly used.

[0012] With the placement tray disclosed by the Publication No. 2008-127062, the two plate-shaped articles can be received in the depressed part. However, the aim of this tray is to raise the reception or packing density of the same article. Thus, this tray cannot be used for the aforementioned inter-factory transportation of the LC cells and the LC modules having different shapes and different thicknesses.

SUMMARY OF THE INVENTION

[0013] The present invention was created to solve the aforementioned existing problems while taking the above-described conventional techniques into consideration.

[0014] An object of the present invention is to provide a transport tray that can be used commonly for inter-factory transportation of two articles (here, a LC cell and a LC module) having different shapes and different thicknesses and that makes it possible to use an exterior box commonly for the inter-factory transportation, and a transporting package and a transporting method using the tray.

[0015] Another object of the present invention is to provide a transport tray that realizes resource saving of the transporting materials and reduction of the transportation cost easily.

[0016] The above objects together with others not specifically mentioned will become clear to those skilled in the art from the following description.

[0017] According to the first aspect of the present invention, a transport tray is provided. This tray, which is formed by molding a sheet-shaped base material to have a desired shape, comprises:

[0018] a first placement section formed on a surface side of the base material; and
a second placement section formed to overlap with the first placement section on a back side of the base material;

wherein the first placement section comprises a depressed part having an enough depth for receiving a thin plate-shaped first article;

the first article placed in the depressed part is held at a predetermined position by a bottom face and a side face that constitute the depressed part;

the second placement section is formed by a supporting wall having an enough depth for receiving a thin plate-shaped second article, the supporting wall protruding to the back side; and

the second article placed in a region surrounded by a supporting wall is held at a predetermined position by a bottom face and a side face that constitute the region;

and wherein when the trays each including the first articles placed in the first placement sections are stacked, the supporting wall of one of the trays is contacted with the first article of another of the trays adjoining thereto is contacted with the first article placed in another of the trays; and

when the trays each including the second articles placed in the second placement sections are stacked, the bottom face that constitutes the depressed part of one of the trays is contacted with the second article of another of the trays adjoining thereto.

With the transport tray according to the first aspect of the present invention, the aforementioned structure is provided and therefore, if the first article (e.g., a L.C. cell) is placed in the first placement section formed on the surface side of the sheet-shaped base material in each of the trays, and these trays are stacked, the supporting wall of one of the trays is contacted with the first article placed in another of the trays adjoining thereto. Thus, the first article can be held in the first placement section stably.

Moreover, if the second article (e.g., a L.C. module) is placed in the second placement section formed on the back side of the sheet-shaped base material in each of the trays, and these trays are stacked, the bottom face that constitutes the depressed part of one of the trays is contacted with the second article placed in another of the trays adjoining thereto. Thus, the second article can be held in the second placement section stably.

Accordingly, this tray can be used commonly for inter-factory transportation of two articles i.e., the first article and the second article, having different shapes and different thicknesses.

Furthermore, since the first placement section comprises the depressed part having an enough depth for receiving the first article, the first article is entirely received in the first placement section. Similarly, since the second placement section is formed by the supporting wall having an enough depth for receiving the second article, the second article is entirely received in the second placement section. Thus, the overall height (thickness) of the tray stack formed by stacking the trays in the case where the first article is received in the first placement section is equal to the overall height (thickness) of the tray stack formed by stacking the trays in the case where the second article is received in the second placement section. Accordingly, the same exterior box can be used for transportation of the first article and the transportation of the second article by turning the tray stack upside down.

In this way, with the transport tray according to the first aspect of the present invention, not only the tray but also the exterior box can be used commonly for the transportation of the first article and that of the second article and as a result, resource saving of the transporting materials and reduction of the transportation cost can be realized easily.

In a preferred embodiment of the transport tray according to the first aspect of the present invention, the supporting wall is located in such a way that when the trays each including the second articles placed in the second placement sections are stacked, the supporting wall of one of the trays does not interfere with the second article of another of the trays adjoining thereto.

In another preferred embodiment of the transport tray according to the first aspect of the present invention, the first placement section has an enough size for receiving the first article and an attachment for the first article (e.g., a FPC substrate attached to a L.C. cell).

In still another preferred embodiment of the transport tray according to the first aspect of the present invention, the depressed part of the first placement section has an enough depth for receiving the first article and a first cushion, and the supporting wall of the second placement section has an enough depth for receiving the second article and a second cushion.

In a further preferred embodiment of the transport tray according to the first aspect of the present invention, the first placement section has an enough size for receiving the first article having a size equal to a multiple of a size of the second article to be placed in the second placement section or greater.

According to the second aspect of the present invention, another transport tray is provided. This tray, which is formed by molding a sheet-shaped base material to have a desired shape, comprises:

a first placement section formed on a surface side of the base material; and

a second placement section formed to overlap with the first placement section on the surface side of the base material;

wherein the first placement section and the second placement section are formed in a depressed part whose side wall is stepped;

a first portion of the depressed part corresponding to the first placement section is located relatively closer to a surface of the base material and has an enough depth for receiving a thin plate-shaped first article;

the first article placed in the first portion is held at a predetermined position by a bottom face and a side face that constitutes the first portion;

a second portion of the depressed part corresponding to the second placement section is located relatively more distant to the surface of the base material and has an enough depth for receiving a thin plate-shaped second article;

the second article placed in the second portion is held at a predetermined position by a bottom face and a side face that constitutes the second portion;

and wherein when the trays each including the first articles placed in the first placement sections are stacked, the bottom face that constitutes the first portion of one of the trays is contacted with the first article of another of the trays adjoining thereto; and

when the trays each including the second articles placed in the second placement sections are stacked, the bottom face that constitutes the second portion of one of the trays is contacted with the second article of another of the trays adjoining thereto.
With the transport tray according to the second aspect of the present invention, the aforementioned structure is provided and therefore, if the first article (e.g., a LC cell) is placed in the first placement section in each of the trays, and these trays are stacked, the bottom face that constitutes the second part of one of the trays is contacted with the first article placed in another of the trays adjoining thereto. Thus, the first article can be held in the first placement section stably.

Moreover, if the second article (e.g., a LC module) is placed in the second placement section in each of the trays, and these trays are stacked, the bottom face that constitutes the second part of one of the trays is contacted with the second article placed in another of the trays adjoining thereto. Thus, the second article can be held in the second placement section stably.

Accordingly, this tray can be used commonly for inter-factory transportation of two articles i.e., the first article and the second article, having different shapes and different thicknesses.

Furthermore, since the first part of the depressed part corresponding to the first placement section has an enough depth for receiving the first article, the first article is entirely received in the first placement section. Similarly, since the second part of the depressed part corresponding to the second placement section has an enough depth for receiving the second article, the second article is entirely received in the second placement section. Thus, the overall height (thickness) of the tray stack formed by stacking the trays in the case where the first article is received in the first placement section is equal to the overall height (thickness) of the tray stack formed by stacking the trays in the case where the second article is received in the second placement section. Accordingly, the same exterior box can be used for transportation of the first article and the transportation of the second article without turning the tray stack upside down.

In this way, with the transport tray according to the second aspect of the present invention, not only the tray but also the exterior box can be used commonly for the transportation of the first article and that of the second article and as a result, resource saving of the transportation materials and reduction of the transportation cost can be realized easily.

In a preferred embodiment of the transport tray according to the second aspect of the present invention, the first portion of the depressed part corresponding to the first placement section has an enough depth for receiving the first article and a first cushion; and the second portion of the depressed part corresponding to the second placement section has an enough depth for receiving the second article and a second cushion.

According to the third aspect of the present invention, still another transport tray is provided. This tray, which is formed by molding a sheet-shaped base material to have a desired shape, comprises:

- a first placement section formed on a surface side of the base material; and
- a second placement section formed to overlap with the first placement section on a back side of the base material;

wherein the first placement section comprises a depressed part having an enough depth for receiving a thin plate-shaped first article, the first article placed in the depressed part being held at a predetermined position by a bottom face and a side face that constitutes the depressed part;

the second section is formed by a supporting wall protruding to the back side of the base material, the supporting wall having an enough depth for receiving a thin plate-shaped second article; the second article placed in a region surrounded by the supporting wall being held at a predetermined position by a bottom face and a side face that constitutes the region;

and wherein when the trays each including the first articles placed in the first placement sections are stacked, the supporting wall of one of the trays is contacted with the first article of another of the trays adjoining thereto; and

when the trays each including the second articles placed in the second placement sections are stacked, the supporting wall of one of the trays is not contacted with the second article of another of the trays adjoining thereto, and the bottom face that constitutes the region is contacted with the second article of another of the trays adjoining thereto.

With the transport tray according to the third aspect of the present invention, the aforementioned structure is provided and therefore, if the first article (e.g., a LC cell) is placed in the first placement section formed on the surface side of the sheet-shaped base material in each of the trays, and these trays are stacked, the supporting wall of one of the trays is contacted with the first article placed in another of the trays adjoining thereto. Thus, the first article can be held in the first placement section stably.

Moreover, if the second article (e.g., a LC module) is placed in the second placement section formed on the back side of the sheet-shaped base material in each of the trays, and these trays are stacked, the supporting wall of one of the trays is not contacted with the second article placed in another of the trays adjoining thereto, but the bottom face that constitutes the region is contacted with the second article placed in another of the trays adjoining thereto. Thus, the second article can be held in the second placement section stably.

Accordingly, this tray can be used commonly for inter-factory transportation of two articles i.e., the first article and the second article, having different shapes and different thicknesses.

Furthermore, since the first placement section comprises the depressed part having an enough depth for receiving the first article, the first article is entirely received in the first placement section. Similarly, since the second placement section is formed by the supporting wall having an enough depth for receiving the second article, the second article is entirely received in the second placement section. Thus, the overall height (thickness) of the tray stack formed by stacking the trays in the case where the first article is received in the first placement section is equal to the overall height (thickness) of the tray stack formed by stacking the trays in the case where the second article is received in the second placement section. Accordingly, the same exterior box can be used for transportation of the first article and the transportation of the second article without turning the tray stack upside down.

In this way, with the transport tray according to the third aspect of the present invention, not only the tray but also the exterior box can be used commonly for the transportation of the first article and that of the second article and as a result, resource saving of the transportation materials and reduction of the transportation cost can be realized easily.

In a preferred embodiment of the transport tray according to the third aspect of the present invention, the depressed part of the first placement section has an enough depth for receiving the first article and a first cushion, and the
supporting wall of the second placement section has an enough depth for receiving the second article and a second cushion.

[0064] According to the fourth aspect of the present invention, a transporting package is provided, which comprises:

[0065] the transport tray according to the first, second, or third aspect of the present invention; and

[0066] an exterior box for receiving a stack of the transport trays (a tray stack).

[0067] With the transporting package according to the fourth aspect of the present invention, the exterior box for receiving a stack of the transport trays according to the first, second, or third aspect of the present invention (a tray stack) is provided and therefore, resource saving of the transporting materials and reduction of the transportation cost can be realized easily.

[0068] According to the fifth aspect of the present invention, a transporting method is provided, which comprises:

[0069] using the transporting package according to the fourth aspect of the present invention.

[0070] With the transporting method according to the fifth aspect of the present invention, the transporting package according to the fourth aspect of the present invention is used, resource saving of the transporting materials and reduction of the transportation cost can be realized easily.

BRIEF DESCRIPTION OF THE DRAWINGS

[0071] In order that the present invention may be readily carried into effect, it will now be described with reference to the accompanying drawings.

[0072] FIG. 1 is a conceptual drawing showing a conventional method for transporting LC cells and LC modules.

[0073] FIG. 2 is a plan view showing the structure of a transport tray according to a first embodiment of the present invention.

[0074] FIG. 3 is a bottom view showing the structure of the transport tray according to the first embodiment of the present invention.

[0075] FIG. 4A is a partial plan view showing the structure of the first placement section of the transport tray according to the first embodiment of the present invention.

[0076] FIG. 4B is a partial cross-sectional view along the IVB-IVB line in FIG. 4A.

[0077] FIG. 5A is a partial bottom view showing the state in which a LC cell is placed in the first placement section of the transport tray according to the first embodiment of the present invention.

[0078] FIG. 5B is a partial cross-sectional view along the VB-VB line in FIG. 5A.

[0079] FIG. 6A is a partial plan view showing the structure of the second placement section of the transport tray according to the first embodiment of the present invention.

[0080] FIG. 6B is a partial cross-sectional view along the VIB-VIB line in FIG. 6A.

[0081] FIG. 7A is a partial bottom view showing the state in which a LC module is placed in the second placement section of the transport tray according to the first embodiment of the present invention.

[0082] FIG. 7B is a partial cross-sectional view along the VIIB-VIB line in FIG. 7A.

[0083] FIG. 8 is a partial cross-sectional view showing the dimensional relationship of the transport tray according to the first embodiment of the present invention.

[0084] FIG. 9A is a partial cross-sectional view showing the state in which the transport trays according to the first embodiment of the present invention are stacked and put into an exterior box, wherein a LC cell is placed in the first placement section of each of the transport trays.

[0085] FIG. 9B is a partial cross-sectional view showing the state in which the transport trays according to the first embodiment of the present invention are stacked, wherein a LC module is placed in the second placement section of each of the transport trays.

[0086] FIG. 10 is a plan view showing the structure of a transport tray according to a second embodiment of the present invention, wherein a LC cell having a FPC substrate is placed in the first placement section thereof.

[0087] FIG. 11 is a bottom view showing the structure of the transport tray according to the second embodiment of the present invention, wherein a LC module is placed in the second placement section thereof.

[0088] FIG. 12A is a partial cross-sectional view showing the state in which the transport trays according to the second embodiment of the present invention are stacked and put into an exterior box, wherein a LC cell is placed in the first placement section of each of the transport trays.

[0089] FIG. 12B is a partial cross-sectional view showing the state in which the transport trays according to the second embodiment of the present invention are stacked and put into an exterior box, wherein a LC module is placed in the second placement section of each of the transport trays.

[0090] FIG. 13 is a plan view showing the structure of a transport tray according to a third embodiment of the present invention, wherein a Bi-Pane is placed in the first placement section thereof.

[0091] FIG. 14 is a plan view showing the structure of a transport tray according to the third embodiment of the present invention, wherein a LC module is placed in the second placement section thereof.

[0092] FIG. 15 is a cross-sectional view showing the state in which the transport trays according to the third embodiment of the present invention are stacked and put into an exterior box, wherein a Bi-Pane is placed in the first placement section of each of the transport trays.

[0093] FIG. 16 is a cross-sectional view showing the state in which the transport trays according to the third embodiment of the present invention are stacked and put into an exterior box, wherein a LC module is placed in the second placement section of each of the transport trays.

[0094] FIG. 17 is a cross-sectional view showing the dimensional relationship of the transport tray according to the third embodiment of the present invention.

[0095] FIG. 18A is a partial cross-sectional view showing the state in which a LC cell having a FPC substrate and a cushion are placed in the first placement section of a transport tray according to a fourth embodiment of the present invention.

[0096] FIG. 18B is a partial cross-sectional view showing the state in which a LC cell and a cushion are placed in the second placement section of the transport tray according to the fourth embodiment of the present invention.

[0097] FIG. 19A is a partial plan view showing the state in which a LC cell is placed in the first placement section of a transport tray according to a fifth embodiment of the present invention.

[0098] FIG. 19B is a cross-sectional view showing the state in which the transport trays according to the fifth embodiment
of the present invention are stacked and put into an exterior box, wherein a LC cell is placed in the first placement section of each of the transport trays.

0109] FIG. 20A is a partial plan view showing the state in which a LC module is placed in the second placement section of the transport tray according to the fifth embodiment of the present invention.

0110] FIG. 20B is a partial cross-sectional view showing the state in which the transport trays according to the fifth embodiment of the present invention are stacked and put into an exterior box, wherein a LC module is placed in the second placement section of each of the transport trays.

0111] FIG. 21 is a partial cross-sectional view showing the dimensional relationship of the transport tray according to the fifth embodiment of the present invention.

0112] FIG. 22A is a plan view showing the state in which a LC cell is placed in the first placement section of a transport tray according to a sixth embodiment of the present invention.

0113] FIG. 22B is a partial cross-sectional view showing the state in which the transport trays according to the sixth embodiment of the present invention are stacked and put into an exterior box, wherein a LC cell is placed in the first placement section of each of the transport trays.

0114] FIG. 23A is a plan view showing the state in which a LC module is placed in the second placement section of the transport tray according to the sixth embodiment of the present invention.

0115] FIG. 23B is a partial cross-sectional view showing the state in which the transport trays according to the sixth embodiment of the present invention are stacked and put into an exterior box, wherein a LC module is placed in the second placement section of each of the transport trays.

0116] FIG. 24 is a partial cross-sectional view showing the dimensional relationship of the transport tray according to the sixth embodiment of the present invention.

0117] FIG. 25 is a conceptual drawing showing a method for transporting LC cells and LC modules, in which the transport tray according to the present invention is commonly used for transportation of LC cells and LC modules.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

0118] Preferred embodiments of the present invention will be described in detail below while referring to the drawings attached.

First Embodiment

0119] The structure of a transport tray according to a first embodiment of the present invention is shown in FIGS. 2 and 3.

0120] As shown in FIGS. 2 and 3, the transport tray 10 according to the first embodiment, which is formed to have a desired shape by molding a sheet-shaped base material or member, comprises a first placement section 12 for receiving a LC cell 30 formed on the side of a surface 11 and a second placement section 14 for receiving a LC module 40 formed on the side of a back 13. The tray 10 can be formed by, for example, the popular vacuum forming method.

0111] The LC cell 30 is placed in the first placement section 12 in such a way that the longitudinal direction of the cell 30 is along the lateral direction of FIG. 2. However, the LC module 40 is placed in the second placement section 14 in such a way that the longitudinal direction of the module 40 is along the vertical direction of FIG. 3. Thus, the LC cell 30 and the LC module 40 are placed to be intersected perpendicularly.

0112] As shown in FIGS. 4A, 4B, 5A and 5B, the first placement section 12 is formed by an approximately rectangular depressed part having an enough size for receiving the LC cell 30. The LC cell 30 is placed in this depressed part to have a direction shown in FIG. 2 in such a way as to be fit into there. In other words, the LC cell 30 placed in the first placement section 12 (approximately rectangular depressed part) is supported by the bottom face 16a of the first placement section 12 formed on its surface side, and is contacted and engaged with the supporting faces 17a and 17b which are formed on the inner side faces of the non-depressed part that surrounds the first placement section 12, and as a result, the cell 30 is held (positioned) in the first placement section 12. The first placement section 12 (approximately rectangular depressed part) is defined by the bottom face 16a and the supporting faces 17a and 17b and has a plan shape shown in FIG. 4A.

0113] As shown in FIGS. 6A, 6B, 7A and 7B, the second placement section 14 is formed by a pair of supporting walls 15a and a pair of supporting walls 15b which are arranged so as to define a rectangular region having an enough size for receiving the LC module 40. The pair of supporting walls 15a and 15b are located to have a predetermined distance between them along the vertical direction of FIG. 6A. The pair of supporting walls 15a and 15b are located to have a predetermined distance between them along the direction of FIG. 6A. The LC module 40 is placed in the rectangular region to have a direction shown in FIG. 3 in such a way as to be fit into there. In other words, the LC module 40 placed in the second placement section 14 (rectangular region) is supported by the bottom face 16b of the second placement section 14 formed on its back side, and is contacted and engaged with the supporting walls 15a and 15b that surround the second placement section 14, and as a result, the module 40 is held (positioned) in the second placement section 14. The second placement section 14 (rectangular region) is defined by the bottom face 16b and the supporting walls 15a and 15b and has a plan shape shown in FIG. 5A.

0114] Since the supporting walls 15a and 15b are formed by selectively pressing the sheet-shaped base material or member constituting the tray 10 toward the side of the back 13, the first placement section 12 located on the side of the surface comprises four grooves formed corresponding to the supporting walls 15a and 15b.

0115] On the side of the surface 11 of the tray 10, the part other than the first placement section 12, i.e., the surrounding area of the first placement section 12, is formed by selectively pressing the sheet-shaped base material or member constituting the tray 10 toward the side of the surface 11. Thus, the second placement section 14 located on the side of the back 13 comprises a depression formed corresponding to the shape of the surrounding area.

0116] In addition, in FIGS. 2 to 7B, gaps are formed between the LC cells 30 placed in the first placement section 12 and the bottom face 16a, and the supporting faces 17a and 17b, and gaps are formed between the LC modules 40 placed in the second placement section 14 and the bottom face 16b, and the supporting walls 15a and 15b. These gaps are provided to facilitate understanding of the present invention. Actually, the LC cells 30 and the LC modules 40 fit into first
and second placement sections 12 and 14, respectively, these gaps are scarcely generated except for the gaps caused by dimensional errors.

0117] The dimensional relationship of the transport tray 10 according to the first embodiment is shown in FIG. 8. Specifically, the distance between the opposing supporting faces 17a of the first placement section 12 on the side of the surface 11 is set to be equal to the length of the long sides of the contour of the LC cell 30, and the distance between the inner faces of the opposing supporting walls 15b of the second placement section 14 on the side of the back 13 is set to be equal to the length of the short sides of the contour of the LC cell 30.

0118] When the trays 10 are stacked vertically, the distance between the outer end faces of the supporting walls 15a and 15b of one of the stacked trays 10 and the bottom face 16a of another of the stacked trays 10 adjoining thereto is set to be approximately equal to the thickness of the LC cell 30. This is to make it possible to receive the entire cell 30. The distance between the bottom face 16a of one of the stacked trays 10 and the bottom face 16b of another of the stacked trays 10 adjoining thereto is set to be approximately equal to the thickness of the LC module 40. This is to make it possible to receive the entire module 40.

0119] The state in which the trays 10 are stacked and put into an exterior box (packing box) 50 is shown in FIGS. 9A and 9B. As shown in FIG. 9A, the LC cell 30 is placed between the outer end faces of the supporting walls 15a and 15b of one of the stacked trays 10 and the bottom face 16a of another of the stacked trays 10 adjoining thereto downward. As shown in FIG. 9B, the LC module 40 is placed between the bottom face 16a of one of the stacked trays 10 and the bottom face 16b of another of the stacked trays 10 adjoining thereto upward, wherein the stacked trays 10 are turned upside down compared with the state of FIG. 9A.

0120] In this way, the only difference between the case where the LC cells 30 are placed in the trays 10 and transported and the case where the LC modules 40 are placed in the trays 10 and transported is whether the stacked trays 10 are turned upside down or not. Therefore, the same exterior box 50 can be used commonly for these two cases.

0121] With the transport tray 10 according to the first embodiment of the present invention, as explained above, the first placement section 12 is formed on the side of the surface 11 and the second placement section 14 is formed on the side of the back 13. The first placement section 12 comprises the depressed part having an enough size for receiving the LC cell 30 (a first article to be placed). The depressed part comprises the bottom face 16a for supporting the LC cell 30 and the supporting faces 17a and 17b for preventing displacement of the LC cell 30 along the main surface of the tray 10. The second placement section 14 comprises the protruded part having an enough size for receiving the LC module 40 (a second article to be placed) which are different in shape and thickness from the LC cell 30. The protruded part comprises the bottom face 16b for supporting the LC module 40 and the supporting walls 15a and 15b for preventing displacement of the LC module 40 along the main surface of the tray 10. For this reason, the tray 10 can be used commonly for interfactory transportation of two articles (here, the LC cell 30 and the LC module 40) having different shapes and different thicknesses.

0122] Moreover, the height (thickness) of the stacked trays in the case where the LC cells 30 are placed and transported is equal to that in the case where the LC modules 40 are placed and transported. Therefore, the same exterior box 50 can be used for both of the transportation of the cell 30 and that of the module 40 by turning the stacked trays 10 upside down, and as a result, the exterior box 50 can be used commonly for the transportation of the cell 30 and that of the module 40. Therefore, the transportation cost can be realized easily.

0123] This way, with the transport tray 10 according to the first embodiment of the present invention, both of the tray 10 and the exterior box 50 can be used commonly for the transportation of the cell 30 and of the module 40 as a result, resource saving of the transporting materials and reduction of the transportation cost can be realized easily.

0124] FIG. 25 is a conceptual drawing showing a transporting method according to the first embodiment of the invention. In this method, the transport tray 10 according to the first embodiment and the exterior box 50 are used.

0125] First, in the LC cell fabrication factory, the LC cells 30 fabricated are placed in the transport tray 10. Next, the trays 10 are stacked and put into the exterior box 50. Thereafter, the box 50 is transported to the LC module assembly factory.

0126] In the LC module assembly factory, a FPC substrate 31 is connected to the LC cell 30 and necessary components and/or parts are assembled into the LC cell 30, fabricating the LC module 40. The LC module 40 fabricated in this way is placed in the transport tray 10 which has been used for transporting the LC cells 30. Subsequently, these trays 10 are stacked vertically and put into the exterior box 50 which has been used for transporting the LC cells 30, and finally, transported toward a Customer designated factory.

0127] With the transporting method according to the first embodiment, both of the tray 10 and the exterior box 50 can be used commonly for the transportation of the cell 30 and that of the module 40 and as a result, resource saving of the transporting materials and reduction of the transportation cost can be realized easily.

Second Embodiment

0128] FIGS. 10, 11, 12A and 12B show a transport tray according to a second embodiment of the present invention.

0129] The transport tray 10a according to the second embodiment has the same structure as that of the transport tray 10 according to the aforementioned first embodiment except that a first placement section 12a is set to be larger than that of the tray 10 so that the LC cell 30 to which a FPC substrate 31 is connected can be transferred and that the shape of a second placement section 14a is changed according to the first placement section 12a. Therefore, an explanation about the same structure is omitted here by attaching the same reference numerals or signs to the same structural elements, and an explanation about the different structure only is provided below.

0130] As apparent from FIG. 10, the first placement section 12a is widened downward so that the LC cell 30 to which a FPC substrate 31 is connected can be received. As apparent from FIG. 11, a second placement section 14a is widened downward so corresponding to this.

0131] When the LC cell 30 with the FPC substrate 31 is placed in the first placement section 12a, the tray 10a is stacked as shown in FIG. 12A. When the LC module 40 is placed in the second placement section 14a, the tray 10a is stacked as shown in FIG. 12B.

0132] With the transport tray 10a according to the second embodiment of the present invention also, similar to the
aforementioned first embodiment, the tray 10a can be used commonly for inter-factory transportation of two articles (here, the LC cell 30 and the LC module 40) having different shapes and different thicknesses and the exterior box 50 also can be commonly used. Therefore, resource saving of the transporting materials and reduction of the transportation cost can be realized easily.

Third Embodiment

[0133] FIGS. 13 to 17 show a transport tray according to a third embodiment of the present invention.

[0134] The transport tray 10b according to the third embodiment has the same structure as that of the transport tray 10 according to the aforementioned first embodiment except that a first placement section 12b is designed so that one Bi-Pane 32 having a size approximately equal to the combination of the eight LC modules 40 can be received and that the shape of a second placement section 14b is changed according to the first placement section 12b. Therefore, an explanation about the same structure is omitted here by attaching the same reference numerals or signs to the same structural elements, and an explanation about the different structure only is provided below.

[0135] As shown in FIGS. 13 and 15, the first placement section 12b is formed to have an enough size for receiving the Bi-Pane 32 having a size approximately equal to the combination of the eight LC modules 40 and as a result, the first placement section 12b is far larger than the first placement section 12 of the first embodiment. On the other hand, as shown in FIGS. 14 and 16, the eight second placement sections 14b are formed so that the eight LC modules 40 can be received separately, wherein the size of the second placement sections 14b is approximately equal to that of the second placement section 14 of the aforementioned first embodiment.

[0136] When the Bi-Pane 32 is placed in the first placement section 12b, the trays 10b are stacked as shown in FIG. 15 and put into the exterior box 50. When the LC modules 40 are placed in the second placement section 14b, the trays 10b are turned upside down then, stacked as shown in FIG. 16, and put into the exterior box 50.

[0137] The dimensional relationship of the transport tray 10b according to the third embodiment is shown in FIG. 17. Specifically, the distance between the opposing supporting faces 17a of the first placement section 12b on the side of the surface 11 is set to be equal to the length of the long sides of the contour of the Bi-Pane 32, and the distance between the inner faces of the opposing supporting walls 15b of the second placement section 14b on the side of the back 13 is set to be equal to the length of the short sides of the contour of the LC modules 40.

[0138] When the trays 10b are stacked vertically, the distance between the outer end faces of the supporting walls 15b and 15b of one of the stacked trays 10b and the bottom face 16a of another of the stacked trays 10b adjoining thereto is set to be approximately equal to the thickness of the Bi-Pane 32. This is to make it possible to receive the entire Bi-Pane 32. The distance between the bottom face 16a of one of the stacked trays 10b and the bottom face 16b of another of the stacked trays 10b adjoining thereto is set to be approximately equal to the thickness of the LC module 40. This is to make it possible to receive the entire module 40.

[0139] With the transport tray 10b according to the third embodiment of the present invention also, similar to the aforementioned first embodiment, the tray 10b can be used commonly for inter-factory transportation of two articles (here, the Bi-Pane 32 and the LC module 40) having different shapes and different thicknesses and the exterior box 50 also can be commonly used. Therefore, resource saving of the transporting materials and reduction of the transportation cost can be realized easily.

Fourth Embodiment

[0140] FIGS. 18A and 18B show a transport tray according to a fourth embodiment of the present invention.

[0141] The transport tray 10c according to the fourth embodiment corresponds to one obtained by adding a sheet-shaped cushion 51 to between the LC cell 30 and the tray 10c and adding a sheet-shaped cushion 52 to between the LC module 40 and the tray 10c. The other structure is the same as that of the tray 10 of the aforementioned first embodiment.

[0142] The shape and the size of the cushion 51 are the same as those of the LC cell 30, respectively. The shape and the size of the cushion 52 are the same as those of the LC module 40, respectively.

[0143] The dimensional relationship of the transport tray 10c according to the fourth embodiment is shown in FIGS. 18A and 18B. Specifically, when the trays 10c are stacked vertically, the distance between the outer end faces of the supporting walls 15b of one of the stacked trays 10c and the bottom face 16a of another of the stacked trays 10c adjoining thereto is set to be approximately equal to the sum of the thickness of the LC cell 30 and the thickness of the cushion 51. This is to make it possible to receive the entire cell 30 and the entire cushion 51. The distance between the bottom face 16a of one of the stacked trays 10c and the bottom face 16b of another of the stacked trays 10c adjoining thereto is set to be approximately equal to the sum of the thickness of the LC module 40 and the thickness of the cushion 52. This is to make it possible to receive the entire module 40 and the entire cushion 52.

[0144] With the transport tray 10c according to the fourth embodiment, in addition to the advantages of the transport tray 10 of the aforementioned first embodiment, an additional advantage that stress (shock) applied to the LC cells 30 and the LC modules 40 during transportation is relaxed is obtained.

Fifth Embodiment

[0145] FIGS. 19A, 19B, 20A, 20B, 21A, and 21B show a transport tray according to a fifth embodiment of the present invention.

[0146] Different from the transport trays 10, 10a, 10b, and 10c according to the aforementioned first to fourth embodiments, the transport tray 10d according to the fifth embodiment receives both of the LC cell 30 and the LC module 40 on the side of the surface 11.

[0147] Specifically, the transport tray 10d, which is formed to have a desired shape by molding a sheet-shaped base material or member like the above-described first embodiment, comprises a first placement section 12d for receiving the LC cell 30 formed on the side of the surface 11 and a second placement section 14d for receiving the LC module 40 formed on the side of the surface 11.

[0148] The LC cell 30 is placed in the first placement section 12d in such a way that the longitudinal direction of the cell 30 is along the lateral direction of FIG. 19A. However, the LC module 40 is placed in the second placement section 14d.
in such a way that the longitudinal direction of the module 40 is along the vertical direction of FIG. 20A. Thus, the LC cell 30 and the LC module 40 are placed to be intersected perpendicularly.

[0149] The first placement section 12d and the second placement section 14d are formed by one depressed part having an enough size for receiving both the LC cell 30 and the LC module 40. The side wall of this depressed part is stepped and comprises, in an upward order from the bottom face 16a, a supporting face 17c perpendicular to the bottom face 16a, a supporting face 18 parallel to the bottom face 16a, and a supporting face 17a perpendicular to the bottom face 16a. The first placement section 12d is defined by the supporting face 18 and the supporting faces 17a and 17c. The second placement section 14d is defined by the bottom face 16a and the supporting faces 17c and 17d. Therefore, on the side of the surface 11, the second placement section 14d is formed at a position closer to the bottom face 16a (at a lower position), and the first placement section 12d is formed at a position more distant from the bottom face 16a (at an upper position).

[0150] As seen from the placement state of the LC cell 30 and the LC module 40 shown in FIGS. 19A, 19B, 20A, and 20B, the LC cell 30 placed in the first placement section 12d and the LC module 40 placed in the second placement section 14d interfere with each other. Therefore, the LC cell 30 cannot be placed in the first placement section 12d simultaneously with placement of the LC module 40 in the second placement section 14d, wherein the cell 30 is placed to overlap with the underlying module 40.

[0151] As shown in FIGS. 19A and 19B, the LC cell 30 placed in the first placement section 12d is supported by the supporting face 18 in such a way as to be apart form the bottom face 16a on the side of the surface 11, and positioned by the supporting faces 17a and 17b. As shown in FIGS. 20A and 20B, the LC module 40 placed in the second placement section 14d is supported by the bottom face 16a, and positioned by the supporting faces 17c and 17d.

[0152] In addition, in FIGS. 19A, 19B, 20A, 20B, 21A, and 21B, gaps are formed between the LC module 40 placed in the second placement section 14d and the bottom face 16a and the supporting faces 17c and 17d, and gaps are formed between the LC cell 30 placed in the first placement section 12d and the bottom face 16a and the supporting faces 17a and 18. These gaps are provided to facilitate understanding of the present invention. Actually, these gaps are scarcely generated except for the gaps caused by dimensional errors.

[0153] The dimensional relationship of the transport tray 10d according to the fifth embodiment is shown in FIG. 21. Specifically, the distance between the opposing supporting faces 17a of the first placement section 12d is set to be equal to the length of the long sides of the contour of the LC cell 30, and the distance between the supporting faces 17c of the second placement section 14d is set to be equal to the length of the short sides of the contour of the LC module 40.

[0154] When the trays 10d are stacked vertically, the distance between the supporting face 18 of one of the stacked trays 10d and the bottom face 16b of another of the stacked trays 10d adjoining thereto is set to be approximately equal to the thickness of the LC cell 30. This is to make it possible to receive the entire cell 30. The distance between the bottom face 16a of one of the stacked trays 10d and the bottom face 16b of another of the stacked trays 10d adjoining thereto is set to be approximately equal to the thickness of the LC module 40. This is to make it possible to receive the entire module 40.

[0155] The state in which the trays 10d are stacked and put into the exterior box 50 is shown in FIGS. 19B and 20B.

[0156] With the transport tray 10d according to the fifth embodiment, the stacked trays 10d are not turned upside down between the case where the LC cells 30 are placed and transferred and the case where the LC modules 40 are placed and transferred, and therefore, it is apparent that the same exterior box 50 can be commonly used. In addition, in the fifth embodiment also, cushions can be used so as to superpose on the LC cells and the LC modules in the same manner as described in the aforementioned fourth embodiment.

[0157] With the transport tray 10d according to the fifth embodiment of the present invention, as explained above, the tray 10d comprises the first placement section 12d formed on the side of the surface 11 and the second placement section 14d formed on the same side. The first placement section 12d comprises the depressed part having an enough size for receiving the LC cell 30 (a first article to be placed), and the supporting face 18 for supporting the LC cell 30 and the supporting faces 17a and 17b for preventing displacement of the LC cell 30 along the main surface of the tray 10d. The second placement section 14d is formed in the same depressed part as the first placement section 12d to have an enough size for receiving the LC module (a second article to be placed) which are different in shape and thickness from the LC cell 30. The second placement section 14d comprises the bottom face 16a for supporting the LC module 40 and the supporting walls 17c and 17d for preventing displacement of the LC module 40 along the main surface of the tray 10d. For this reason, the tray 10d can be used commonly for inter-factory transportation of two articles (here, the LC cell 30 and the LC module 40) having different shapes and different thicknesses.

[0158] Moreover, the height (thickness) of the stacked trays 10d in the case where the LC cells 30 are placed and transported is equal to that in the case where the LC modules 40 are placed and transported. Therefore, the same exterior box 50 can be used for both of the transportation of the cell 30 and that of the module 40 without turning the stacked trays 10d upside down, and as a result, the exterior box 50 can be used commonly for the transportation of the cell 30 and that of the module 40.

[0159] In this way, with the transport tray 10d according to the fifth embodiment of the present invention, both of the tray 10d and the exterior box 50 can be used commonly for the transportation of the cell 30 and that of the module 40 and as a result, resource saving of the transporting materials and reduction of the transportation cost can be realized easily.

Sixth Embodiment

[0160] FIGS. 22A, 22B, 23A, 23B, and 24 show a transport tray according to a sixth embodiment of the present invention.

[0161] The transport tray 10e according to the sixth embodiment has the same structure as that of the transport tray 10d according to the aforementioned fifth embodiment except for the following.

[0162] In the transport tray 10e of the aforementioned fifth embodiment, both of the LC cell 30 and the LC module 40 are placed on the side of the surface 11. However, the LC cell 30 thus placed is apart from the bottom face 16a and only the peripheral area of the cell 30 is supported by the supporting face 18. Therefore, there is an anxiety that the cell 30 is
pressed by the bottom face 16b of the adjoining tray 10f to be broken or damaged during transportation. In the tray 10e of the sixth embodiment, this anxiety is eliminated in the following way.

Specifically, like the above-described first embodiment, the supporting wall 15b is formed to protrude on the side of the back 13, thereby raising the bottom face 16a. Thus, the approximately entirety of the cell 30 placed is supported by the bottom face 16a. For this reason, there is no anxiety that the cell 30 is pressed by the bottom face 16b of the adjoining tray 10f to be broken or damaged during transportation.

When the LC cell 30 is placed in the first placement section 12e, the cell 30 is supported by the bottom face 16a of one of the stacked trays 10e, as shown in FIG. 22b, and positioned by the supporting faces 17a and 17b along the main surface of the tray 10e. Since the cell 30 is contacted with the supporting wall 15b of another of the stacked trays 10e adjoining thereto upward, the cell 30 is positioned along the direction perpendicular to the main surface of the tray 10e.

When the LC module 40 is placed in the second placement section 14e, the module 40 is supported by the bottom face 16a of one of the stacked trays 10e, as shown in FIG. 23b, and positioned by the supporting faces 17c and 17d along the main surface of the tray 10e. Since the module 40 is contacted with the bottom face 16b of another of the stacked trays 10e adjoining thereto upward, the module 40 is positioned along the direction perpendicular to the main surface of the tray 10e.

In the sixth embodiment also, cushions can be used so as to superpose on the LC cells and the LC modules in the same manner as described in the aforementioned fourth embodiment.

With the transport tray 10e according to the sixth embodiment of the present invention, the tray 10e can be used commonly for the transportation of the cell 30 and that of the module 40. Moreover, the exterior box 50 can be used commonly for the transportation of the cell 30 and that of the module 40. As a result, resource saving of the transporting materials and reduction of the transportation cost can be realized easily.

VARIATIONS

The above-described first to sixth embodiments are embodied examples of the present invention. Therefore, it is needless to say that the present invention is not limited to these embodiments and any other modification is applicable to these embodiments without departing the spirit of the present invention.

For example, placement and transportation of the LC cell 30 and the LC module 40 each having a rectangular plan shape is explained in the aforementioned embodiments. However, the present invention is not limited to this. Any other articles can be placed and transported by the transport tray according to the present invention. No limit is applied to the shape and thickness of articles to be placed and transported.

1. A transport tray formed by molding a sheet-shaped base material to have a desired shape, comprising:
   a first placement section formed on a surface side of the base material; and
   a second placement section formed to overlap with the first placement section on a back side of the base material; wherein the first placement section comprises a depressed part having an enough depth for receiving a thin plate-shaped first article;
   the first article placed in the depressed part is held at a predetermined position by a bottom face and a side face that constitute the depressed part;
   the second placement section is formed by a supporting wall protruding to the back side of the base material, the supporting wall having an enough depth for receiving a thin plate-shaped second article; and
   the second article placed in a region surrounded by the supporting wall is held at a predetermined position by a bottom face and a side face that constitute the region;
   and wherein when the trays each including the first articles placed in the first placement sections are stacked, the supporting wall of one of the trays is contacted with the first article of another of the trays adjoining thereto; and when the trays each including the second articles placed in the second placement sections are stacked, the bottom face that constitutes the depressed part of one of the trays is contacted with the second article of another of the trays adjoining thereto.

2. The tray according to claim 1, wherein the supporting wall is located in such a way that when the trays each including the second articles placed in the second placement sections are stacked, the supporting wall of the second placement section of one of the trays does not interfere with the second article of another of the trays adjoining thereto.

3. The tray according to claim 1, wherein the first placement section has an enough size for receiving the first article and an attachment for the first article.

4. The tray according to claim 1, wherein the depressed part of the first placement section has an enough depth for receiving the first article and a cushion, and the supporting wall of the second placement section has an enough depth for receiving the second article and a cushion.

5. The tray according to claim 1, wherein the first placement section has an enough size for receiving the first article having a size equal to a multiple of a size of the second article to be placed in the second placement section or greater.

6. A transport tray formed by molding a sheet-shaped base material to have a desired shape, comprising:
   a first placement section formed on a surface side of the base material; and
   a second placement section formed to overlap with the first placement section on a back side of the base material; wherein the first placement section comprises a depressed part having an enough depth for receiving a thin plate-shaped first article;
   the first article placed in the depressed part is held at a predetermined position by a bottom face and a side face that constitute the first portion; and
   a second portion of the depressed part corresponding to the second placement section is located relatively closer to a surface of the base material and has an enough depth for receiving a thin plate-shaped second article; and
   the first article placed in the first portion is held at a predetermined position by a bottom face and a side face that constitutes the first portion; and
   a second portion of the depressed part corresponding to the second placement section is located relatively more distant to the surface of the base material and has an enough depth for receiving a thin plate-shaped second article;
the second article placed in the second portion is held at a predetermined position by a bottom face and a side face that constitutes the second portion; and wherein when the trays each including the first articles placed in the first placement sections are stacked, the bottom face that constitutes the second portion of one of the trays is contacted with the first article of another of the trays adjoining thereto; and when the trays each including the second articles placed in the second placement sections are stacked, the bottom face that constitutes the second portion of one of the trays is contacted with the second article of another of the trays adjoining thereto.

7. The tray according to claim 6, wherein the first portion of the depressed part corresponding to the first placement section has an enough depth for receiving the first article and a first cushion; and the second portion of the depressed part corresponding to the second placement section has an enough depth for receiving the second article and a second cushion.

8. A transport tray formed by molding a sheet-shaped base material to have a desired shape, comprising: a first placement section formed on a surface side of the base material; and a second placement section formed to overlap with the first placement section on a back side of the base material; wherein the first placement section comprises a depressed part having an enough depth for receiving a thin plate-shaped first article; the first article placed in the depressed part is held at a predetermined position by a bottom face and a side face that constitutes the depressed part; the second placement section is formed by a supporting wall protruding to the back side of the base material, the supporting wall having an enough depth for receiving a thin plate-shaped second article; and the second article placed in a region surrounded by the supporting wall is held at a predetermined position by a bottom face and a side face that constitutes the region; and wherein when the trays each including the first articles placed in the first placement sections are stacked, the supporting wall of one of the trays is contacted with the first article of another of the trays adjoining thereto; and when the trays each including the second articles placed in the second placement sections are stacked, the supporting wall of one of the trays is not contacted with the second article of another of the trays adjoining thereto, and the bottom face that constitutes the region is contacted with the second article of another of the trays adjoining thereto.

9. The tray according to claim 8, wherein the depressed part of the first placement section has an enough depth for receiving the first article and a cushion, and the supporting wall of the second placement section has an enough depth for receiving the second article and a cushion.

10. A transporting package comprising: the transport tray according to claim 1; and an exterior box for receiving a stack of the transport trays.

11. A transporting method comprising: using the transporting package according to claim 10.

12. A transporting package comprising: the transport tray according to claim 6; and an exterior box for receiving a stack of the transport trays.

13. A transporting package comprising: the transport tray according to claim 8; and an exterior box for receiving a stack of the transport trays.