

PACKAGE FOR MEDIA DISC AND LABEL ASSEMBLY THEREFOR

BACKGROUND OF THE INVENTION

The present invention relates to packaging for
5 storage media discs and method for making the same, and,
more particularly, relates to a package sleeve or jacket
in which audio or ROM compact discs may be safely
contained as a more economical means of
containing/shipping these components in comparison to the
10 standard styrene jewel boxes. The invention also relates
to a label assembly for that package sleeve.

Storage containers for a standard compact disc
or the like are often called "jewel boxes." The jewel
box is usually made of transparent plastic and is
15 rectangular in shape. Many such jewel boxes include
three distinct components: a rectangular base tray, a
corresponding rectangular cover and a mounting hub.
Usually, the base tray and cover are pivotally connected
at their base corners to form a clam shell-like
20 enclosure, and the mounting hub is inserted into the base
tray.

With increasing demands of the consumer to keep
the cost of compact discs as low as possible, the
standard jewel box design has been found to be relatively
25 expensive to manufacture as it requires substantial raw
material expenditures. More specifically, the relatively
expensive transparent plastic must be suitably formed
into the three basic components of the standard jewel
box.

30 In utilizing the typical styrene jewel boxes,
automated assembly processes are relatively expensive and
time consuming. The increased cost of production occurs
because the tabs and/or protruding sidewalls adjacent to
the recessed bottoms of the surface of the base tray
35 often get caught in the automated equipment, which, in
turn, can lead to mixed orders. In addition,
difficulties with the jewel box assembly occur from the

need to include two paper products; namely: the back liner and the booklet. These additional paper products are required to add identification and graphics to the clear jewel box. For these reasons, the insert cards and
5 discs are often inserted by hand or extra maintenance for the machine must be expended to keep the production line up and running.

Further, in the typical styrene jewel box, the interior surface of the base tray may include arched ribs
10 which extend upwardly and surround the disc in a manner such that the cover is prevented from touching the disc. However, the location of the ribs makes them ineffective to protect the disc when a cover breaks as a result of force applied to it. Moreover, the jewel box due to its
15 fragile nature is not suited for individual distribution without additional protection as if the jewel case becomes damaged, even if the disc is not, the complete package may be considered a defect by the customer. It is therefore desirable to provide a storage container for
20 compact discs which has interior surfaces and edges which will not scratch or otherwise damage the disc and which is more immune to incidental contact allowing the package to accept rough handling without failure.

Moreover, the CD-ROM compact disc does not
25 require a relatively expensive jewel case for final use since the user inserts the disc into a special CD-ROM drive caddy eliminating the need for a redundant storage unit. Further, the weight of the jewel box and its associated paper products lead to increased shipping
30 costs. Thus, it has been found desirable to provide a more economical method for packaging CD-ROM discs which alleviates the additional costs in the form of materials, handling and shipping associated with the existing packaging method (i.e., the styrene jewel box).

OBJECTS AND SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a container for storage media discs which can avoid the above problems.

5 More specifically, it is an object of the invention to provide a package sleeve for containing audio or ROM compact discs.

It is another object of the present invention to provide a package sleeve for containing audio or ROM
10 compact discs which offers a reduction in both material and shipping/storage costs in comparison to the standard styrene jewel boxes.

It is a further object of this invention to provide a package sleeve for storing audio and ROM
15 compact discs which is well-suited for automated assembly processes.

It is yet another object of this invention to provide a package sleeve for storing audio or ROM compact discs which minimizes the chances for mixed orders.

20 It is yet a further object of this invention to provide a package sleeve for storing audio or ROM compact discs having interior surfaces and edges which will not scratch or otherwise damage the disc.

It is yet a further object of this invention to
25 provide a package sleeve for storing audio or ROM compact discs which have the identification and graphics for the inserted disc printed directly on the external print surface of the sleeve.

It is another object of the present invention
30 to provide a label assembly for a package sleeve accommodating a storage media disc which seals the open end of the sleeve cavity of the package sleeve which will not scratch or place adhesive on the disc.

It is a further object of this invention to
35 provide a label assembly for a package sleeve accommodating a storage media disc which is readily adaptable to automated assembly processes.

It is yet a further object of this invention to provide a label assembly for a package sleeve accommodating a storage media disc which can be utilized in direct mailing applications.

5 According to an aspect of the present invention, a package sleeve for accommodating a storage media disc is provided which is formed of relatively inexpensive carton blank. This package sleeve includes a front panel and a back panel connected thereto, and two
10 side flap portions connected to the front panel. The front panel comprises a first folded-over double panel including a front portion and a first outer flap portion and the back panel comprises a second folded-over double panel including a back portion and a second outer flap
15 portion. In order to provide a sleeve cavity for containment of the storage disk media between the first and second folded-over double panels, the side flap portions are adhesively attached to the back panel.

 In accordance with a general object of the
20 present invention, the interior surfaces and edges of the package sleeve will not scratch or otherwise damage the disc when it is contained in the sleeve cavity as portions of the first and second folded-over double panels facing the sleeve cavity are treated with a
25 coating to provide scratch resistance. In the preferred embodiment, this coating is an aqueous-based acrylic clear coating.

 A method for making a package sleeve for accommodating storage disc media is also provided. This
30 package sleeve is formed from a carton blank comprising a front portion, first and second side flap portions connected to the front portion along respective first and second bend lines, a back portion connected to said front portion along a third bend line, and top and bottom outer
35 flap portions connected respectively to the front portion and to the back portion along respective fourth and fifth bend lines. In the method of the present invention, the

top outer flap portion is folded along the fourth bend line and then adheringly attached to the front portion. Next, the bottom outer flap portion is folded along the fifth bend line and adhesively attached to the back
5 portion. The back portion and the bottom outer flap portion adhered thereto are then folded along the third bend line. Next, the first and second side flap portions are folded respectively along the first and second bend lines with the first and second side flap portions
10 adhesively attached to the back portion such that a sleeve cavity is formed between the top and bottom outer flap portions for containment of the storage disc media therein. The as formed package sleeve is then pressed flat.

15 According to another aspect of the present invention, a label assembly for a package sleeve including a sleeve cavity for accommodating a storage media disc is provided. This label assembly includes a tear strip covering the sleeve cavity such that when the
20 tear strip is detached along perforation lines provided in the label assembly, the disc can be removed from the sleeve cavity. The tear strip also includes a deadened adhesive portion facing the sleeve cavity so that no adhesive can contact the disc.

25 The label assembly of the present invention also includes a first face and a second face positioned on opposite sides of the tear strip with both the first and second faces having an adhesive backing. In order to utilize the package sleeve in direct mailing applications
30 and thereby distribute a single CD-ROM selection to several discrete locations, the first face of the label assembly includes mailing identification information such as the mailing address, return address, postal idicia and a postal bar code, etc. The first face of the label
35 assembly including this mailing identification information is adhesively applied to the front portion of the package sleeve.

The second face of the label assembly includes product identification information regarding the storage media disc accommodated within the package sleeve. For instance, this product identification information can
5 include text information regarding the disc accommodated in the package sleeve as well as a product identification bar code regarding the particular disc. In addition to the product identification information, an address verification bar code can be provided on the second face
10 referencing the specific mailing identification on the first face of the label will be included for use with an address verification system. The second face of the label assembly is adhesively applied to the back portion of the package sleeve.

15 The above, and other objects, features and advantages of the present invention, will become apparent in the following detailed description of a preferred embodiment which is to be read in conjunction with the accompanying drawings, and in which like reference
20 numerals are used to identify the same or similar parts in the several views.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a plan view of one side of the blank for forming the package sleeve for containing
25 storage disc media of the present invention;

Figure 2 is a plan view of the other side of the blank of Figure 1;

Figures 3 through 6 are sequential plan views illustrating the folding of the carton blank of Figures 1
30 and 2 to achieve the package sleeve of the present invention;

Figure 7 is a front elevational view of a completed package sleeve made in accordance with the sequential views of Figures 3 through 6;

35 Figure 8 is a rear elevational view of the package sleeve of Figure 7;

Figure 9 is a front elevational view of a label assembly in accordance with the teachings of the present invention;

Figure 10 is a partial rear elevational view of
5 the label assembly of Figure 9;

Figure 11 is a front perspective view of the label assembly of Figures 9 and 10 being applied to the finished package sleeve illustrated in Figures 7 and 8;

Figure 12 is a rear perspective view of the
10 label assembly of Figures 9 and 10 being applied to the finished package sleeve illustrated in Figures 7 and 8;
and

Figure 13 is a front perspective view of a preferred embodiment for applying the label assembly of
15 Figures 9 through 12 to the finished package sleeve illustrated in Figures 7 and 8.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

Referring to Figures 1 and 2, a carton blank 10 for forming a package sleeve for containing storage media
20 discs in accordance with the teachings of the present invention is illustrated. More specifically, Figure 1 illustrates one side of the carton blank and Figure 2 illustrates the opposite side thereof.

As is shown in Figures 1 and 2, the blank
25 includes a front panel 12 and a back panel 14 connected to the front panel 12 along fold line 15. The front panel 12 is comprised of a front portion 16 and a first outer flap portion 18 connected to the front portion 16 along bend line 21. The back panel 14 of the blank is
30 comprised of a back portion 20 and a second outer flap portion 22 connected to the back portion 20 along bend line 24. Two side flap portions 26 and 28 are respectively connected to the front portion 16 along bend lines 30 and 32. For purposes of illustration, the
35 features of the front panel 12, back panel 14, front portion 16, outer flap portions 18 and 22, back portion 20 and side flap portions 26 and 28 shown on the side of

Figure 1 have also been designated as 12a, 14a, 16a, 18a, 20a, 22a, 26a and 28a whereas those features on the other side of Figure 2 have been designated as 12b, 14b, 16b, 18b, 20b, 22b, 26b and 28b.

5 In the preferred embodiment, the carton blank 10 has the following properties:

	Basis Weight, lbs/3,000 Sq. Ft.		172
	gam		279.9
10	Caliper, .001 inch.		14.0
	mm		0.356
	Stiffness, Taber	MD	132
		CD	65
15	mNm	MD	12.95
		CD	6.38
	Brightness, %	CS ¹	83.0
		UCS	82.5
20	Moisture, %		5.8
	Gloss, %	CS	57
25	Smoothness	CS	29
	(Sheffield Units)	UCS	185

Such a carton material with the above properties is
 30 currently available from International Paper Corporation, Bleached Board Division having the Grade Code 1220, under the tradename Everest which can be described as 14 pnt, SBS, C1S, 0.014", solid bleached sulfite, coated one side.

35 The process for making the package sleeve of the present invention is illustrated in Figures 3 through 6. Initially, the first outer flap portion 18 is folded along fold line 21 in the direction of arrow A as shown in Figure 3 such that the glue area 34 provided on the
 40 side 18b of outer flap portion 18 is adhesively attached to the side 16b of front portion 16. Next, as is illustrated in Figure 4, the second outer flap portion 22 is folded along fold line 24 in the direction of arrow B such that the glue area 36 provided on the side 22b of
 45 outer flap portion 22 is adhesively attached to the side

20b of back portion 20. The back portion 20 with the outer flap portion 22 adhered thereto are then folded along fold line 15 in the direction of arrow C (see Fig. 5) such that the outer flap portion 22 is aligned with the outer flap portion 18. Subsequent thereto, the two side flap portions 26 and 28 are respectively folded along fold lines 30 and 32 in the direction of arrows D and E in Figure 6 such that the glue areas 38 and 40 provided on the respective sides 26b and 28b of the flap portions are adhesively attached to the rear portion 20. As a result thereof, a sleeve cavity 42 is formed between outer flap portions 18 and 22 for containment of a storage media disc therein. The entire folded blank is then pressed flat. The package sleeve can then be covered with shrink wrap to seal the open end of the sleeve cavity 42.

As is best shown in Figures 7 and 8, a package sleeve for accommodating storage media disk is therefore provided having a front panel 12 and a back panel 14 connected thereto along fold line 15 with the two side flap panels 26 and 28 connected to the front panel 12. The front panel 12 is in the form of a first folded-over double panel including the outer flap portion 18 and the front portion 16 and the back panel 14 is in the form of a second folded-over double panel including the outer flap portion 22 and the back portion 20. As is shown in Figures 6 and 8, the two side flap portions 26 and 28 are adhesively attached to the back panel 14 to form the sleeve cavity 42 between the outer flap portion sides 18b and 22b for containment of the storage disc media therein.

As is shown in the figures, the side flap portions 26 and 28 have generally rounded corners, such as 46 and 48 (see Fig. 8). This corner design retards wear of the side flap portions which would be enhanced if sharp corners were present. These rounded corners also

provide a generally cleaner appearance to the finished package sleeve.

The carton blank 10 of Figures 1 and 2 has also been specifically designed to accommodate a storage media disc (i.e., compact or ROM compact disc) having a diameter no greater than 12cm. As designed, the overall blank 10 has a dimension of approximately $19 \frac{3}{4}$ " in length and $6 \frac{5}{8}$ " in width. The front portion 16 has a dimension of approximately 5" in length and $5 \frac{1}{8}$ " in width whereas the back portion 20 has a dimension of approximately 5" in length and $4 \frac{15}{16}$ " in width. The outer flap portions 18 and 22 both have dimensions of approximately $4 \frac{7}{8}$ " in length and $4 \frac{15}{16}$ " in width. The fold lines are preferably $\frac{1}{16}$ " wide. Moreover, in order to provide product consistency, the paper stock grain direction of the blank is along the length thereof.

These internal dimensions of the sleeve assist in keeping the disc trapped after insertion. The package sleeve of the present invention can be turned open side down and shaken without the disc becoming dislodged. The only way to remove the disc from the sleeve is to apply light pressure to the sides of the sleeve in order to make the sleeve cavity "pucker." Without this external pressure on the sleeve the disc remains gently held in place by the extreme outer edge non-program area of the disc.

The package sleeve of the present invention also has printed areas 44 on one side of the front portion 16, back portion 20 and side flap portion 26 and 28 of the blank 10 (See Figure 1) to provide printed information, such as information about the musical recordings, the artists and other such promotional materials, for the CD or ROM compact disc contained within the package sleeve. After the folding process, the printed areas 44 appear on the exterior surface of the package sleeve (see Figures 7 and 8) for visual display to the purchaser.

In accordance with one of the general objects of this invention, the side of the package sleeve containing the printed area (i.e., the side of the carton blank 10 shown in Figure 1) is treated with a coating to provide scratch resistance for the storage media disc. This coating is preferably an aqueous-based acrylic clear coating. One such representative aqueous-based acrylic clear coating is manufactured by Algan, Inc. under the trade designation Algloss Overcoating 3048. This coating typically has the following physical properties:

	Viscosity	:	30-35 seconds, #3 Zahn cup @ 70°F
15	pH	:	8.0-9.0
	Non-Volatiles	:	40-42%
	VOC	:	1.4 lbs/gallon minus water
20	Weight/Gallon	:	8.5-8.7 lbs
	Freeze/Thaw Stability	:	One cycle

By treating the side of Figure 1 of the carton blank with such a coating, the outer flap portion sides 18a and 22a which face into the sleeve cavity 42 in the finished package sleeve (see Figures 7 and 8) will be so coated. Thus, the interior surfaces and edges of this package sleeve will not scratch or otherwise damage the audio or ROM compact disc when it is contained in the sleeve cavity 42.

The package sleeve of the present invention does not require the additional paper products for the back lines and the booklet of the jewel box as the associated identification and graphics are printed directly to the external point surfaces of the sleeve. This minimizes the chances for mixed orders in comparison to the jewel box design. Additionally, the package sleeve of the present invention is of a reduced weight as compared to the jewel box design. The package sleeve of the present invention is thus a more economical

alternative for packaging compact discs (audio or ROM) in comparison to the standard styrene jewel case. It offers both a reduction in material and shipping/storage costs.

Moreover, this chipboard package sleeve offers
5 complete protection during handling/shipping of both audio and ROM compact discs as interior surfaces and edges of the sleeve that the disc come in contact are treated with a coating such that they will not damage the disc. Further, this package sleeve is readily adaptable
10 to automated assembly processes. The package sleeve of the present invention with its uniform [thickness] cross section thickness resulting from a uniform sleeve cavity or pocket using full-sized panels and external gluing flaps allows the sleeve to stack without leaning
15 profusely as will occur if the sleeve had thickness differences. This stacking uniformity allows more empty sleeves to be stored in a feed magazine with respect to automated inserting of discs into sleeves which is important for efficiency and throughput.

20 The package sleeve of the present invention also provides protection to the disc but is more immune to incidental contact than the jewel box allowing the package to accept rough handling without damage or defect.

25 As described below, another aspect of the present invention relates to a label assembly for the aforescribed package sleeve, as illustrated in Figs. 9 through 11.

Referring now to Figure 9, the label assembly
30 50 of the present invention has an overall dimension of approximately $4 \frac{7}{8}$ " in width and $3 \frac{1}{2}$ " in length and includes three sections: namely; a tear strip 52 and respective first and second faces or parts 54 and 56 provided on opposite sides of the tear strip 52. In
35 order for the label assembly to be applied to a package sleeve, the first and second faces 54 and 56 have respective adhesive backings 70 and 72 (see Fig. 10).

As is shown in Fig. 11, when applied to the package sleeve 10, the tear strip 52 covers the sleeve cavity 42 so that the storage media disc accommodated within the sleeve cavity will be sealed therein until
5 ready for use. The tear strip 52 includes a pair of perforation lines 58 and 60 such that when it is desirable to remove the disc from the sleeve cavity 42, a pull tab 62 provided on the tear strip 52 is lifted and the tear strip is detached along the perforation lines 58
10 and 60.

In the preferred embodiment, the tear strip 52 is approximately 1/2" in length and the pull tab 62 extends approximately 3/16" in width from the width of the first and second faces 54 and 56 of the label
15 assembly.

In accordance with one of the general objects of the present invention, the tear strip 52 of the label assembly 50 of the present invention not only seals the open end of the sleeve cavity 42 but is also designed
20 such that it will not scratch or place adhesive on the disc. In accordance therewith, the tear strip 52 includes a deadened adhesive portion 63 covering and facing the open end of the sleeve cavity to assure that no adhesive can contact the disc (see Fig. 10).

25 The tear strip width is preferably approximately 0.5" so that this label assembly cannot only be used with a package sleeve accommodating a single storage media disc but also be used with package sleeves accommodating double, triple, quad, etc. storage media
30 discs. This label assembly could then be utilized to close multiple single disc package sleeves that are glued together.

In order to distribute a single title within the package sleeve to multiple address locations, the
35 first face 54 of the label assembly 50 includes identifying mailing information 64 printed thereon for shipping (see Fig. 9). This identifying mailing

information 64 can include information such as the mailing address 65 of the recipient of the package sleeve, the return address of the sender, postal indicia 67 and a postal bar code. In the preferred embodiment, 5 the first face 54 is approximately 2 1/2" in length.

As illustrated in Fig. 9, the second face 56 includes product identification information 66 regarding the particular disc accommodated within the package sleeve or a product identification bar code regarding the 10 disc. In addition, an address verification bar code 70 can be included on the second face 56 which references the specific mailing information 64 on the first face 54 of label assembly 50 which is to be used by an address verification system.

15 More specifically, in one preferred embodiment, this product identification information 66 can include text information 68 regarding the disc accommodated within the package sleeve and a product identification bar code (not shown) regarding the disc. As a result 20 thereof, this product identification information assists in tracking the disc in inventory as well as providing additional consumer information regarding the disc. In the preferred embodiment, the second face 56 is approximately 1/2" in length.

25 Advantageously, the label material is vinyl for strength (preferably, Wallace #401 Kimdura synthetic vinyl), glossy white for appearance and has a permanent adhesive for security. The label material is also print and apply compatible. Thus, the identifying mailing 30 information 64 and product identification information 66 can be printed onto the label assembly immediately before the label assembly is applied to the package sleeve.

As is shown in Figs. 11 and 12, the present invention also relates to a method for sealing a package 35 sleeve. In this method, the sleeve cavity 42 of the package sleeve is covered with the removable tear strip 52 to reliably seal the sleeve cavity and retain the

storage media disc within the sleeve cavity. When the strip 52 covers the sleeve cavity, the deadened adhesive portion 63 of the tear strip 52 faces the sleeve cavity so that no adhesive can contact the disc accommodated within the sleeve cavity. When it is desired to remove the storage media disc from the sleeve cavity, the pull tab 62 is lifted upwardly such that the tear strip 52 is detached along perforation lines 58 and 60 to thereby open the sleeve cavity.

As is set forth below, the present invention further relates to a method for providing mailing information and product identification information regarding the package sleeve and disc accommodated therein. Initially, the first and second faces 54 and 56 of the label assembly are folded inwardly along the perforation lines 58 and 60. The adhesive backing 70 of the first face 54 is then adhesively attached to the front portion 16a (see Figs. 7 and 11) of the package sleeve. As a result thereof, the mailing identification information 64 of the first face 54 is attached to the front portion 16a. Similarly, the adhesive backing 72 of the second face 56 is adhesively attached to the rear portion 20a (see Figs. 8 and 12) of the package sleeve. In this manner, the product identification information 66 of the second face 56 is attached to back portion 20a. When adhesively applied, the mailing identification information 64 and the product identification information 66 are exposed and therefore the information contained thereon can be visually read and/or scanned with a bar code reader.

The label assembly 50 of the present invention can be automated using a one step process. Speeds can be approximately 60 parts per minute with each part having a 0.4-0.5 second dwell. Physically, the automation cell can be less than approximately 4 feet in length.

This one-step automated process is shown in Figure 13. The label assembly 50 is fed out of a printer

(not shown) onto a tamp block 80 supported by a pair of guide rods 82a and 82b. The package sleeve is in a staged position between a pair of spring loaded rollers 84a and 84b of the tamp block 80. Upon actuation of a
5 tamp cylinder 86, the tamp block 80 is moved in generally the direction of arrow f such that the spring loaded rollers 84a and 84b impart a force respectively to the first face 54 and second face 56 of the label assembly to move the faces 54 and 56 inwardly toward the package
10 sleeve in the direction of arrow g. The faces 54 and 56 are moved by the rollers 82a and 82b until the first face 54 is attached to the front face 16a of the package sleeve and the second face 56 is attached to the rear face 20a of the package sleeve by means of the adhesive
15 backings 70 and 72. The first and second faces 54 and 56 of the label assembly are then smoothed over the package sleeve by the rotational force applied by the rollers 82a and 82b.

Based upon the foregoing, the label assembly of
20 the present invention when applied to a package sleeve forms a secure package by which a single CD-ROM can be mailed. Upon receipt, the pull tab is lifted and the deadened tear strip is removed to open the sleeve. The disc accommodated in the sleeve cavity can then be
25 removed without damage. The label assembly is further designed so that all necessary mailing information is printed on the label just before it is automatically applied. As a result, the label assembly of the present invention is a cost effective means to distribute a
30 single title to multiple address locations. In addition, the combination package sleeve/label assembly is economical to mail due to its reduced size and weight.

While the present invention has been shown and described with reference to certain preferred
35 embodiments, it will be readily apparent to those of ordinary skill in the art that various changes and modifications may be made therein without departing from

the spirit and scope of the invention. For instance, an identifying bar code can be printed on the back of each label assembly so that a bar code reader can scan each printed label after application. A data base can then
5 compare "Finished Work" to "Requested Work" with any discrepancies noted. This closed loop address verification can be extended to a serialized CD-ROM with an identifying bar code sticker which can also be scanned with a bar code reader. This additional information can
10 also be written to the "Finished Work" data base. A report can then be generated to show the exact address location of the particular package sleeve.

It is intended that the appended claims be interpreted as including the foregoing as well as various
15 other changes and modifications.



What is claimed is :

1. A label assembly for a package sleeve including a sleeve cavity accommodating a storage media disc, said label assembly comprising a removable tear strip covering the sleeve cavity such that when detached, the disc can be removed from the sleeve cavity, said tear strip having a deadened adhesive portion facing the sleeve cavity so that no adhesive can contact the disc; said coating is an aqueous-based acrylic clear coating.

2. The label assembly of claim 1 wherein said tear strip is a perforated tear strip.

3. The label assembly of claim 1 which is vinyl.

4. A method for sealing a package sleeve having a front face and a rear face and which accommodates information media within a sleeve cavity provided between the front and rear faces, said method comprising the steps of sealing the sleeve cavity with a label assembly having a removable tear strip covering the sleeve cavity, and detaching said tear strip along perforation lines provided in said label assembly to remove the information media from the sleeve cavity.