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Published:

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(54) **Title:** PRODUCT CONTAINER HAVING MOISTURE BARRIER FEATURE

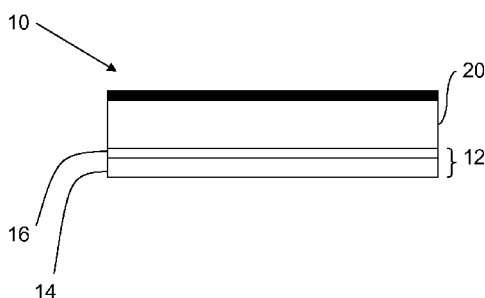


FIG. 1

(57) **Abstract:** A container has at least one wall formed at least in part from a laminate structure having a barrier liner formed from a paper layer having first and second sides, and a PVDC coating applied to the first side of the paper layer. A first paperboard layer is then laminated to the coated side of the barrier layer. The laminate structure may further include a second paperboard layer laminated to the uncoated side of the barrier layer.



PRODUCT CONTAINER HAVING MOISTURE BARRIER FEATURE

REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of priority under 35 U.S.C. §119(e) of United States provisional application serial number 61/510840 filed on July 22, 2011, which is hereby incorporated by reference in its entirety.

BACKGROUND OF THE INVENTION

Field of the Invention

[0002] The present invention relates generally to can-type containers formed from paper or paperboard materials, and more particularly, to such a container having a moisture barrier feature incorporated therein.

Background

[0003] Various types of product containers have been used to hold a variety of consumer product items such as smokeless tobacco, breath mints, medication, throat lozenges, candy, and the like. One form of package is a can-type container having a base, a curved sidewall, and a lid. Such containers may be formed at least in part from a paper or paperboard material in which one or more of the sidewall, base and lid are formed from paper or paperboard. An example of such a container may be seen in U.S. Patent Application Pub. No. 2004/0052987 A1 (Shetty et al.).

[0004] To preserve product freshness and to extend the shelf life of the contained product, the container may have a moisture barrier feature that comprises one or more barrier layers incorporated into the container structure. It is desirable that the barrier structure be as effective as possible, while forming a part of a low-cost, relatively simple structure.

SUMMARY

[0005] The present disclosure is directed to a container comprising a container body having at least one wall structure, in which the wall structure is formed at least in part from a

laminate structure having a barrier liner formed from a paper layer having first and second sides, and a PVDC coating applied to the first side of the paper layer to define a coated side and an uncoated side for the barrier layer. A first paperboard layer is then laminated to the coated side of the barrier layer.

[0006] The first paperboard layer may be a coated unbleached kraft material having a coated and an uncoated side, with the first paperboard layer laminated to the barrier liner along the uncoated side of the first paperboard layer.

[0007] The laminate structure may further include a second paperboard layer laminated to the uncoated side of the barrier layer.

[0008] The wall structure may be used to form a bottom wall for the container, and/or a side wall for the container. The container side wall may be formed from a plurality of layers, with at least one of the layers being formed from the laminate structure.

[0009] In accordance with a further embodiment of the invention, a container may comprise a container body having at least one wall structure, in which the wall structure is formed at least in part from a laminate structure having (a) a first paperboard layer formed from a coated unbleached kraft material having a coated and an uncoated side, (b) a PVDC film having a first side and a second side laminated along its first side to the uncoated side of the first paperboard layer, and (c) a second paperboard layer laminated to the second side of the PVDC film

[0010] Variations of the illustrative embodiment, including variations in gasket form, are also within the contemplation of the present invention and are further described below.

[0011] It should be appreciated that the present invention can be implemented and utilized in numerous ways, including without limitation as a process, an apparatus, a system, a device, and a method for applications and from other suitable materials now known and later developed. These and other unique features of the system disclosed herein will become more readily apparent from the following description and the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] So that those having ordinary skill in the art to which the disclosed system pertains will more readily understand how to make and use the same, reference may be had to the following drawings.

[0013] FIGURE 1 is a sectional view of one embodiment of a laminate structure for use in

forming a container in accordance with the present invention.

[0014] FIGURE 2 is a sectional view of another embodiment of a laminate structure for use in forming a container in accordance with the present invention.

[0015] FIGURE 3 is a sectional view of a further embodiment of a laminate structure for use in forming a container in accordance with the present invention.

DESCRIPTION OF EXEMPLARY EMBODIMENTS

[0016] In accordance with an embodiment of the present invention, a barrier liner is prepared by coating a paper web with an aqueous PVDC coating. The coating may be applied to a first side of the paper by roll coating or by spraying. The paper used for the liner may be bleached or unbleached, depending upon the final structure of the container.

[0017] Referring now to FIGURE 1, a paperboard laminate 10 may be constructed for use in a product container. A barrier liner 12 comprises a paper backing layer 14 to which a polyvinylidene chloride (PVDC) coating 16 has been applied. A board layer 20 is also provided, and in one embodiment board layer 20 may be formed from a coated unbleached kraft paperboard such as CUSTOM KOTE® paperboard available from MeadWestvaco Corporation. An adhesive is applied to the PVDC coated surface of the barrier liner 12, to wet bond the liner 12 to the uncoated side of board layer 20 to form the single laminate structure 10.

[0018] When using a coated unbleached kraft paperboard as described above, the finished laminate will have a printable surface on one side, with the paper backing layer 14 forming the opposite side. Depending upon the nature of the container that is to be formed from the laminate, other paperboard materials may be substituted, including uncoated kraft board, coated or uncoated bleached board, or recycled board.

[0019] A heavier laminate structure may also be formed in accordance with the present invention. Referring to FIGURE 2, a single laminate structure 10 is formed as described above. A layer of adhesive is then applied to the paper backing layer 14 and/or to a second board layer 22. The single laminate structure 10 is then brought into contact with board layer 22 to wet bond the layers to form a sandwich barrier structure 24. Paperboard layer 22 may be a coated kraft board, an uncoated kraft board, coated or uncoated bleached board, or recycled board. In the case of a coated board, the coated surface should be positioned outwardly of the sandwich barrier structure.

[0020] A third embodiment of the present invention may be seen in FIGURE 3, in which the barrier liner is replaced with a PVDC film. In this embodiment, the film 30 is wet bonded to a paperboard layer 32, after which the intermediate structure is wet bonded to a second paperboard layer 34 to form a sandwich barrier structure 36. Paperboard layers 32 and 34 may selected from coated kraft board, uncoated kraft board, coated or uncoated bleached board, or recycled board. If at least one of the layers is a coated board, the coated surface should be positioned outwardly of the sandwich barrier structure to provide a printable substrate.

[0021] Any of the PVDC laminates described herein can be placed in various location of a paper can-type container to provide barrier protection for the container contents. Such a container may have one or more wall structures, such as a bottom wall or one or more side walls. The laminate may be used as the substrate for forming the container bottom and/or sidewalls. With particular reference to the sidewall of a conventional paper can, this wall is typically formed by winding multiply layers of paperboard on a mandrel. The PVDC laminate described herein may be substituted for one or more layers during the winding to provide a selected degree of barrier protection.

[0022] One advantage of the invention described herein is higher barrier properties than the conventional wax used in paper-based containers currently in use in packaging of, e.g., tobacco products. In addition, the aqueous PVDC coating used in the present structure may allow the barrier paperboard to be repulpable, unlike many other known film lamination structures. It is also expected that the structures described herein may be lower in cost than known film laminates used for barrier protection.

[0023] While the invention has been described with respect to preferred embodiments, those skilled in the art will readily appreciate that various changes and/or modifications can be made to the invention without departing from the spirit or scope of the invention.

WHAT IS CLAIMED IS:

1. A container comprising a container body having at least one wall structure, the wall structure being formed at least in part from a laminate structure having (a) a barrier liner formed from a paper layer having first and second sides, and a PVDC coating applied to said first side of said paper layer to define a coated side and an uncoated side for said barrier layer, and (b) a first paperboard layer laminated to said coated side of said barrier layer.
2. A container as claimed in claim 1, wherein said first paperboard layer is a coated unbleached kraft material having a coated and an uncoated side, and wherein said first paperboard layer is laminated to said barrier liner along said uncoated side of said first paperboard layer.
3. A container as claimed in claim 1, wherein said laminate structure further includes a second paperboard layer laminated to said uncoated side of said barrier layer.
4. A container as claimed in claim 1, wherein said one wall structure forms a bottom wall for said container.
5. A container as claimed in claim 1, wherein said one wall structure forms a side wall for said container.
6. A container as claimed in claim 5, wherein said side wall is formed from a plurality of layers, at least one of said layers being formed from said laminate structure.
7. A container comprising a container body having at least one wall structure, the wall structure being formed at least in part from a laminate structure having (a) a first paperboard layer formed from a coated unbleached kraft material having a coated and an uncoated side, (b) a PVDC film having a first side and a second side laminated along said first side to said uncoated side of said first paperboard layer, and (c) a second paperboard layer laminated to said second side of said PVDC film.

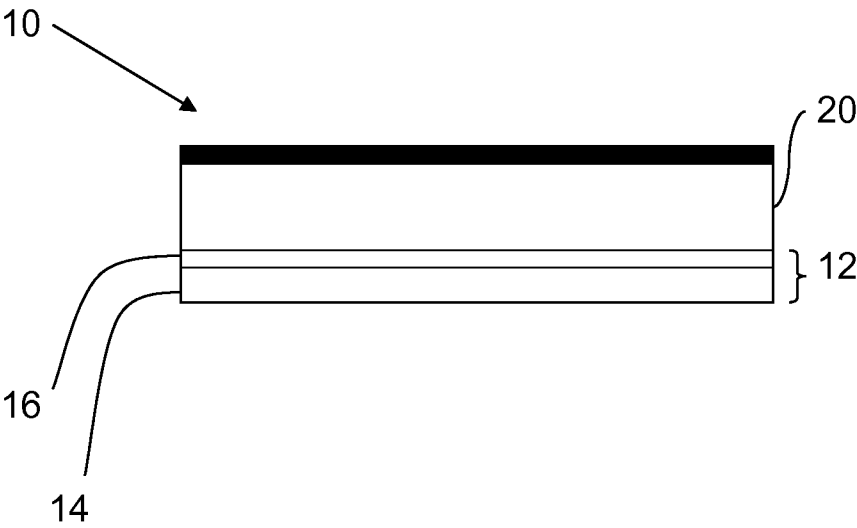


FIG. 1

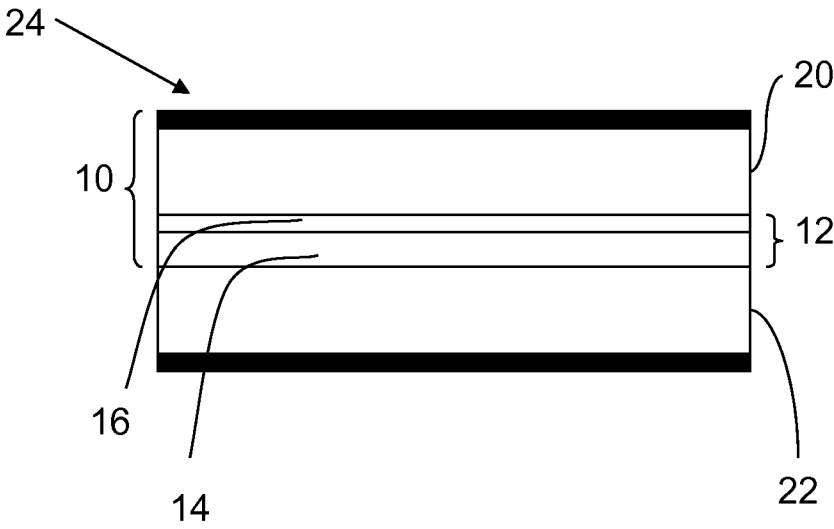


FIG. 2

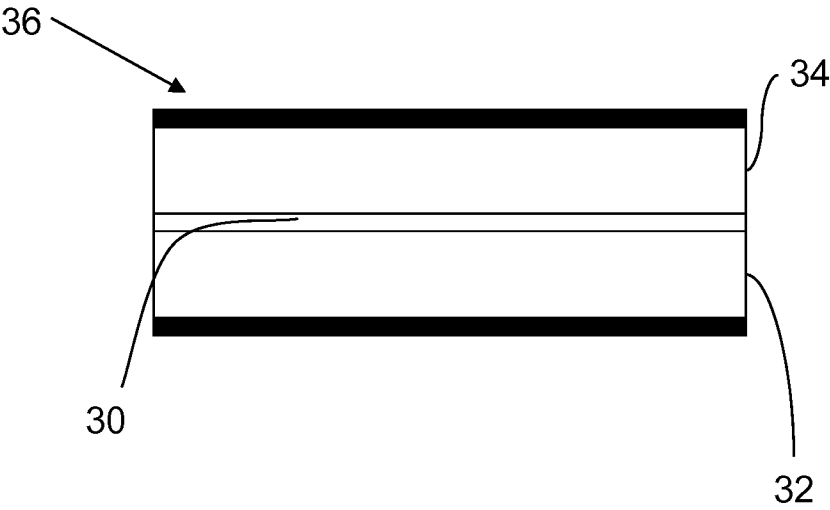


FIG. 3

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/047507

A. CLASSIFICATION OF SUBJECT MATTER INV. B32B29/04 B65D3/22 B65D3/28 ADD.		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) B32B B65D		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009/123677 A1 (SINS VERONIQUE [BE]) 14 May 2009 (2009-05-14) the whole document -----	1-7
X	WO 2011/003566 A1 (TETRA LAVAL HOLDINGS & FINANCE [CH]; TOFT NILS [SE]; ALBEN MATS [SE] T) 13 January 2011 (2011-01-13) page 4, line 24 - page 6, line 5; claims 1-19; figures 1a,1b,1c,10d -----	1-7
A	US 4 701 360 A (GIBBONS CHARLES E [US] ET AL) 20 October 1987 (1987-10-20) the whole document -----	1-7
A	WO 2010/135613 A1 (MEADWESTVACO CORP [US]; YAN ZHIQUAN Q [US]) 25 November 2010 (2010-11-25) paragraphs [0011], [0024], [0028], [0029]; claims 1-17; figures 2-6 -----	1-7
☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 12 October 2012		Date of mailing of the international search report 25/10/2012
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer Chindia, Evangelia

INTERNATIONAL SEARCH REPORT

Information on patent family members

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