RECYCLABLE THERMALLY INSULATED CONTAINER

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BACKGROUND

[0001] The present disclosure relates generally to a recyclable thermally insulated container. The shipping or transportation of various perishable materials frequently requires that such materials be maintained in a stable temperature range, either higher or lower than ambient temperatures to which the packaging of the materials will be exposed. Thus, there have heretofore been provided a number of different types of thermally insulated containers.

[0002] Containers made from or utilizing expanded polystyrene or other expanded polymers as an insulating medium have been in use for many years. Polystyrene is considered suitable insulating material for many applications. Polystyrene has been traditionally used to form a lid 112 and a body 114 of a cooler which may be disposed in a box 116 as shown in FIGS. 1 and 2. However, the wide acceptance of using polystyrene for coolers has made polystyrene a nuisance to dispose of because of the difficulty of disposing in an environmentally responsible manner.

[0003] Polystyrene is generally not as easily recyclable by consumers compared with, for example, corrugated cardboard. Most cities now have recycling programs that will pick up a consumers corrugated cardboard and other recyclables, such as glass, directly from a consumer's home. However, many of these programs exclude expanded polystyrene. If a consumer wishes to recycle expanded polystyrene, the consumer must usually have to travel a long distance to dispose of their expanded polystyrene. The sorting of expanded polystyrene from recyclables produces much waste in terms of hours spent in sorting and hauling away expanded polystyrene. Also, if the expanded polystyrene is not recycled, it will most likely end in a landfill, where its expanded volume takes up considerable amount of landfill space. The properties that make expanded polystyrene a good insulating material include being lightweight, being water resistant, having a high insulating value, and being generally inexpensive to manufacture. However, expanded polystyrene also has certain drawbacks, such as being fragile, and as indicated, being difficult, if not impossible to recycle.

SUMMARY

[0004] A recyclable container is provided wherein the recyclable container includes an outer carton and an inner wall affixed to the interior of the outer carton. The inner wall and the carton defining an enclosed cavity within the carton. A cellulose-based substrate is disposed within the enclosed cavity.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] Features and advantages of embodiments of the present disclosure will become apparent by reference to the following detailed description and drawings, in which like reference numerals correspond to similar, though perhaps not identical, components. For the sake of brevity, reference numerals or features having a previously described function may or may not be described in connection with other drawings in which they appear.

[0006] FIG. 1 a perspective view of a prior art polystyrene cooler with the lid in the open position.

[0007] FIG. 2 is a perspective view of a prior art polystyrene cooler with the lid in the closed position.

[0008] FIG. 3 is a plan view of an embodiment of the present disclosure wherein the thermally insulated lid is in the closed position.

[0009] FIG. 4 is a plan view of an embodiment of the present disclosure wherein the thermally insulated lid is in the partially open position.

[0010] FIG. 5 is a plan view of an embodiment of the present disclosure wherein the thermally insulated lid is removed.

[0011] FIG. 6 is a cross-sectional view of an embodiment of the present disclosure.

[0012] FIG. 7 is a plan view of yet another embodiment of the present disclosure.

[0013] FIG. 8 is a plan view of an embodiment of the present disclosure showing the outer carton as one integral piece and is in the pre-assembled position.

[0014] FIG. 9 is a plan view of an embodiment of the present disclosure where the inner wall is one integral piece and is shown in the pre-assembled position.

[0015] FIG. 10 is a plan view of an embodiment of the present disclosure where the lid is one integral piece and is shown in the pre-assembled position.

DETAILED DESCRIPTION

[0016] The present disclosure provides a recyclable cooler 10 which is also “curbside” recyclable. With reference to FIGS. 3-6 together, the present disclosure allows for a recyclable thermally insulated container by providing a container which includes an outer carton 12, an inner wall 14 affixed to the interior 16 of the outer carton 12. The inner wall 14 and the outer carton 12 may define an enclosed cavity 18 wherein a cellulose-based substrate is disposed within the enclosed cavity 18.

[0017] Referring now to FIGS. 5 and 6 together, the inner wall 14 may be made of a first wall 22, an second wall 24, a third wall 26 and a fourth wall 28. The inner wall 14 may also further include a base 30 as shown in FIG. 6. As shown in FIGS. 5 and 6 together, the first wall 22, the second wall 24, the third wall 26 and the fourth wall 28 may each include a horizontal portion 32 and a vertical portion 34; the enclosed cavity 18 being defined at least in part by the horizontal portion 32, the vertical portion 34 and a portion of the outer carton 12.

[0018] With reference to FIG. 6 the base 30 in conjunction with the first wall 22 the second wall 24, the third wall 26, and the fourth wall 28 may define the enclosed cavity 18 which holds the cellulose based material 20.

[0019] Referring again to FIGS. 5 and 6, each of the first wall 22, the second wall 24, the third wall 26 and the fourth wall 28 may be affixed to the outer carton 12 using an adhesive 38. The first, second, third and fourth walls 22, 24, 26, 28 may be adhered to the interior side 16 of the outer carton 12 proximate the joint 40 where the horizontal portion 32 of the first, second, third and fourth walls 22, 24, 26, 28 coincides with the interior side 16 of the outer carton 12.

[0020] The first, second, third, and the fourth wall 22, 24, 26, 28 may each further include a flange 42 which is integral to each of the first, second, third and fourth wall 28 that is adjacent to the upper side of the outer carton 12. The flange 42 may provide an additional or the only surface to which the first, second, third and, fourth walls 22, 24, 26, 28 are adhered to the interior side 16 of the outer carton 12.
It is also to be understood that the use of adhesives 38 is only one non-limiting example for affixing any one or more of the first, the second, the third, and the fourth walls 22, 24, 26, 28 to the outer carton 12. Accordingly, another non-limiting example of affixing any one or more of the first, the second, the third and the fourth walls 22, 24, 26, 28 to the outer carton 12 is mechanical fasteners (not shown). Non-limiting examples of the cellulose-based substrate 20 implemented within the enclosed cavity 18 may be loose corrugated cardboard, loose newspaper material, loose paper, loose box board, or the like.

As shown in FIGS. 3 and 4, an interior insulated lid 35 may be further included where the interior insulated lid 35 is operatively configured to be disposed on the horizontal portion 32 of each of the first wall 22, the second wall 24, the third wall 26 and the fourth wall 28 when the container is in a closed position. The interior insulated lid 35 may also define an enclosed lid cavity (not shown) within the interior insulated lid 35 wherein the enclosed lid cavity configured to hold a cellulose-based substrate material 20.

In one non-limiting example embodiment, the interior wall (the first wall 22, the second wall 24, the third wall 26, and the fourth wall 28) may be adhered to the inner sides of the outer carton 12 at each upper end 70 (shown in FIGS. 6 and 9).

The interior base 30 and the outer carton 12 may define a general width of a base cavity portion 64 wherein the base cavity portion 64 is co-extensive with the bottom side 66 of the outer carton 12. The base cavity portion 64 of the cavity 18 is configured to hold cellulose-based substrate material 20.

In yet another embodiment of the present disclosure, a recyclable container may be provided where the recyclable container includes: an outer carton 12, an insulated base 36 integral to the outer carton 12, and enclosed inner carton 46 disposed within the insulated base 36. The enclosed inner carton 45 houses a loose cellulose based substrate (not shown) within the enclosed inner carton 45. The enclosed inner carton 46 and the insulated base 36 define a thermally insulated cavity 50.

It is also to be understood that where the use of enclosed interior carton 46 is implemented within insulated base 36 and the outer carton 12, the present disclosure may further include a second enclosed inner carton 48 wherein the enclosed inner carton 48 and the enclosed inner carton 48 define 45, at least in part a thermally insulated cavity 50 as shown in FIG. 7. A third enclosed inner carton (not shown) may further be included wherein the second enclosed inner carton 48, the third enclosed inner carton (not shown), and the enclosed inner carton 46 define the thermally insulated cavity within the outer carton 12. A thermally insulated lid 35 (shown in FIG. 3) may also be included. It is also to be understood that the insulated base 36 may alternatively be made of separate components such that additional enclosed cartons (not shown) line the interior of the outer carton 12. Accordingly, a user may customize the size of the thermally insulated cavity 50 by simply choosing the number and type of enclosed inner cartons 46, 48 for use within the insulated base 36 of the outer carton 12.

The inner cartons 46, 48 and/or the outer carton 12 may be made from a cellulose based material, such as but not limited to corrugated cardboard, loose newspaper, loose paper, loose boxboard or the like. Similarly, the loose cellulose based substrate material 20 that is implemented in the cartons 46, 48 may be loose corrugated cardboard, newspaper, paper, boxboard or the like. By having the same cellulose based material throughout the container, the ability to recycle the product is improved.

Given that cellulose based materials may be used throughout the various components of the present disclosure, the recyclable thermally insulated container of the present disclosure may be "curbside recyclable" such that a user may easily recycle this product from their own home by depositing it at their curb with their other recyclable containers/products.

Referring now to FIGS. 8-10, non-limiting embodiments of the inner wall 14, the outer carton 12 and interior insulated lid 35 are shown in their pre-assembled state. As shown, each of the inner wall 14, the outer carton 12 and the interior insulated lid 35 may be an integral unit wherein each of the inner wall 14, the outer carton 12 and the interior insulated lid 35 may simply be folded in order to assemble each piece. However, it is also to be understood that the inner wall 14, the outer carton 12 and the interior insulated lid may also each be formed of multiple, separate pieces that are assembled together.

While multiple embodiments of the present disclosure have been described in detail, it will be apparent to those skilled in the art that the disclosed embodiments may be modified. Therefore, the foregoing description is to be considered exemplary rather than limiting.

What is claimed is:

1. A recyclable container comprising:
   - an outer carton;
   - an inner wall affixed to the interior of the outer carton, the inner wall and the carton defining an enclosed cavity; and
   - a cellulose-based substrate disposed within the enclosed cavity.

2. The recyclable container, as defined in claim 1 wherein the inner wall includes a first wall, a second wall, a third wall and a fourth wall.

3. The recyclable container as defined in claim 2 wherein each of the first wall, the second wall, the third wall and the fourth wall include a horizontal portion and a vertical portion; the enclosed cavity being defined at least in part by the horizontal portion, the vertical portion and a portion of the carton.

4. The recyclable container as defined in claim 3 wherein each of the first wall, the second wall, the third wall and the fourth wall are affixed to the carton using an adhesive.

5. The recyclable container as defined in claim 3 wherein the first wall, the second wall, the third wall, and the fourth wall are affixed to the carton using a mechanical fastener.

6. The recyclable container as defined in claim 1 wherein the cellulose-based substrate is loose corrugated cardboard.

7. The recyclable container as defined in claim 1 further comprising an interior insulated lid operatively configured to be disposed on the horizontal portion of each of the first wall, the second wall, the third wall and the fourth wall when the container is in a closed position.

8. The recyclable container as defined in claim 7 wherein the interior insulated lid defines an enclosed lid cavity within the lid, the enclosed lid cavity configured to hold a cellulose-based substrate material.

9. The recyclable container as defined in claim 3 further comprising a second interior insulated lid operatively configured to be disposed on a second horizontal portion of each of
the first wall, the second wall, the third wall and the fourth wall, the second interior insulated lid disposed opposite the interior insulated lid.

10. The recyclable container as defined in claim 2 wherein the first wall, the second wall, the third wall and the fourth wall are affixed to a bottom face of the carton.

11. The recyclable container as defined in claim 1 wherein the carton is made of corrugated cardboard.

12. The recyclable container as defined in claim 2 wherein the first wall, the second wall, the third wall and the fourth wall are made of corrugated cardboard.

13. A recyclable container comprising:
   an outer carton;
   an interior base
   an inner wall affixed to the interior of the outer carton at a first end and the inner wall being affixed to the interior base at a second end; the inner wall, the carton and the base defining an enclosed cavity; and
   a cellulose-based substrate; disposed within the enclosed cavity.

14. The recyclable container as defined in claim 13 wherein the interior base and the outer carton define a base cavity that is co-extensive with a side of the outer carton, the base cavity configured to hold a base cellulose-based substrate.

15. A recyclable container comprising:
   an outer carton;
   an enclosed inner carton, the enclosed inner carton housing a loose cellulose based substrate within the enclosed inner carton,
   wherein the enclosed inner carton and the outer carton define a thermally insulated cavity.

16. The recyclable container as defined in claim 15, further comprising a second enclosed inner carton wherein the second enclosed inner carton and the enclosed inner carton define, at least in part a thermally insulated cavity.

17. The recyclable container as defined in claim 15 wherein the carton is made from corrugated cardboard.

18. The recyclable container as defined in claim 16, further comprising a third enclosed inner carton wherein the second enclosed inner carton, the third enclosed inner carton, and the enclosed inner carton define the thermally insulated cavity.

19. The recyclable container as defined in claim 15 wherein the outer carton and the enclosed inner carton is made of corrugated cardboard.

20. The recyclable container as defined in claim 15 wherein the loose cellulose based substrate is loose corrugated cardboard.

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