Claims

We claim:

1. A liner-based storage system comprising:

an overpack; and

a liner provided within the overpack, the liner comprising a substantially rigid liner wall forming an interior cavity of the liner, the rigid liner wall having a thickness such that the liner is substantially self-supporting in an expanded state but collapsible at a pressure of less than about 20 psi to dispense fluid from within the interior cavity.

2. The liner-based storage system of claim 1, wherein the substantially rigid liner wall can withstand at least one collapse and expansion such that the liner is provided within the overpack by collapsing the liner from an initial expanded state, placing the collapsed liner within the overpack, and expanding the liner when positioned within the overpack to substantially its initial expanded state.

3. The liner-based storage system of claim 1, wherein the liner is blow-molded.

4. The liner-based storage system of claim 1, wherein the liner is welded.

5. The liner-based storage system of claim 1, wherein the liner comprises one or more folds or indentations in the substantially rigid liner wall to control a collapsing pattern of the liner wall during dispense of fluid from within the interior cavity.

6. The liner-based storage system of claim 1, wherein the liner comprises one or more folds or indentations in the substantially rigid liner wall to deter random collapsing of the liner during dispense of fluid from within the interior cavity.

7. The liner-based storage system of claim 1, wherein the liner comprises one or more folds or indentations in the substantially rigid liner wall such that the liner collapses in a predetermined pattern during dispense of fluid from within the interior cavity.

8. The liner-based storage system of claim 5, wherein the one or more folds or indentations in the substantially rigid liner wall control the collapsing pattern to provide a channel within the interior cavity for dispensing fluid from within the interior cavity to substantially eliminate choke-off.

9. The liner-based storage system of claim 1, wherein the liner comprises a dip tube.

10. The liner-based storage system of claim 9, further comprising a sump area generally at the bottom of the liner to increase dispensability.

11. The liner-based storage system of claim 9, wherein the fluid is dispensed from the interior cavity using a pump.

12. The liner-based storage system of claim 9, wherein the fluid is dispensed from the interior cavity using pressure assistance.

13. The liner-based storage system of claim 1, wherein the liner comprises polyethylene naphthalate (PEN).

14. The liner-based storage system of claim 1, wherein the liner further comprises choke-off prevention means.

15. The liner-based storage system of claim 1, wherein the liner wall comprises metal.

16. A liner comprising:

a first panel and a second panel welded to form front and back panels of the liner, wherein the first and second panels have a thickness of between

0.15 mm to 3 mm thick, and wherein the interior cavity comprises substantially rounded corners.

17. The liner of claim 16, further comprising a sump area generally at the bottom of the liner to increase dispensability.

18. The liner of claim 16, further comprising a layer of barrier enhancing material.

19. The liner according to claim 16, having a thickness such that the liner is substantially self-supporting in an expanded state.

20. The liner according to claim 16 further comprising a diptube extending into the sump cavity.

21. The liner of claim 20, wherein a fluid is pump dispensed from within the interior cavity.

22. The liner of claim 21, wherein a fluid is dispensed using pressure assisted pump dispense.

23. The liner according to claim 16 comprising one or more folds or indentations in the liner wall to control a collapsing pattern of the liner wall in a predetermined manner during dispense of fluid from within the interior cavity.

24. The liner of claim 16, housed in an over-pack or pressure vessel.

25. The liner of claim 24, wherein a fluid is dispensed from within the interior cavity by applying a pressure between the over-pack and the liner.

26. The liner of claim 18, wherein the liner wall comprises metal.

27. The liner of claim 16, wherein the liner wall comprises polyethylene naphthalate (PEN).

28. The liner of claim 16, further comprising choke-off prevention means.

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29. The liner of claim 16, further comprising a third panel welded to the first and second panels to form a gusseted panel, such that, when the liner is empty, the first, second, and third panels fold substantially flat, and when the liner is filled, the gusseted panel expands and the first, second, and third panel form an interior cavity.

30. A method of delivering a high purity material to a semiconductor process, comprising:

providing a substantially rigid free-standing container having the high purity material stored in an interior thereof, the container having a container wall comprising polyethylene naphthalate (PEN) and a diptube in the interior for dispensing the high purity material therefrom;

coupling the diptube to a downstream semiconductor process;

dispensing the high purity material from the container via the diptube and delivering the high purity material to the downstream semiconductor process.

31. The method of claim 30, wherein the high purity material is dispensed via the diptube using a pump.

32. The method of claim 31, wherein the container is collapsible under vacuum from the pump.

33. The method of claim 32, wherein the container comprises choke-off prevention means.

34. The method of claim 30, wherein the container wall comprises metal.

35. The method of claim 30, wherein the container wall comprises polyethylene naphthalate (PEN).

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36. A liner comprising:

a liner wall forming an interior cavity of the liner, the liner wall having a thickness of between about 0.5 mm to about 3 mm.

37. The liner of claim 36, wherein the liner wall is substantially rigid having a thickness such that the liner is substantially self-supporting in an expanded state but collapsible at a pressure of less than about 20 psi to dispense fluid from within the interior cavity.

38. The liner of claim 36, wherein the liner wall comprises polyethylene naphthalate (PEN).

39. The liner of claim 36, further comprising a layer of barrier enhancing material.

40. The liner of claim 36, wherein the liner comprises one or more folds or indentations in the liner wall to deter random collapsing of the liner during dispense of fluid from within the interior cavity.

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What is claims is:

1. A liner-based storage system comprising:

an overpack; and

a liner provided within the overpack,

the liner comprising a substantially rigid liner wall forming an interior cavity of the liner, the rigid liner wall having a thickness such that the liner is substantially self-supporting in an expanded state but collapsible at a pressure of less than about 20 psi to dispense fluid from within the interior cavity.

2. The liner-based storage system of claim 1, wherein the substantially rigid liner wall can withstand at least one collapse and expansion such that the liner is provided within the overpack by collapsing the liner from an initial expanded state, placing the collapsed liner within the overpack, and expanding the liner when positioned within the overpack to substantially its initial expanded state.

3. The liner-based storage system of claim 1, wherein the liner is blow-molded.

4. The liner-based storage system of claim 1, wherein the liner is welded.

5. The liner-based storage system of claim 1, wherein the liner comprises one or more folds or indentations in the substantially rigid liner wall to control a collapsing pattern of the liner wall during dispense of fluid from within the interior cavity.

6. The liner-based storage system of claim 1, wherein the liner comprises one or more folds or indentations in the substantially rigid liner wall to deter random collapsing of the liner during dispense of fluid from within the interior cavity.

7. The liner-based storage system of claim 1, wherein the liner comprises one or more folds or indentations in the substantially rigid liner wall such that the liner collapses in a predetermined pattern during dispense of fluid from within the interior cavity.

8. The liner-based storage system of claim 5, wherein the one or more folds or indentations in the substantially rigid liner wall control the collapsing pattern to provide a channel within the interior cavity for dispensing fluid from within the interior cavity to substantially eliminate choke-off.

9. The liner-based storage system of claim 1, wherein the liner comprises a dip tube.

10. The liner-based storage system of claim 9, further comprising a sump area generally at the bottom of the liner to increase dispensability.

11. The liner-based storage system of claim 9, wherein the fluid is dispensed from the interior cavity using a pump.

12. The liner-based storage system of claim 9, wherein the fluid is dispensed from the interior cavity using pressure assistance.

13. The liner-based storage system of claim 1, wherein the liner comprises polyethylene naphthalate (PEN).

14. The liner-based storage system of claim 1, wherein the liner further comprises choke-off prevention means.

15. The liner-based storage system of claim 1, wherein the liner wall comprises metal.

16. A liner comprising:

a first panel and a second panel welded to form front and back panels of the liner, wherein the first and second panels have a thickness of between 0.15 mm to 3 mm thick, and wherein the interior cavity comprises substantially rounded corners.

17. The liner of claim 16, further comprising a sump area generally at the bottom of the liner to increase dispensability.

18. The liner of claim 16, further comprising a layer of barrier enhancing material.

19. The liner according to claim 16, having a thickness such that the liner is substantially self-supporting in an expanded state.

20. The liner according to claim 16 further comprising a diptube extending into the sump cavity.

21. The liner of claim 20, wherein a fluid is pump dispensed from within the interior cavity.

22. The liner of claim 21, wherein a fluid is dispensed using pressure assisted pump dispense.

23. The liner according to claim 16 comprising one or more folds or indentations in the liner wall to control a collapsing pattern of the liner wall in a predetermined manner during dispense of fluid from within the interior cavity.

24. The liner of claim 16, housed in an over-pack or pressure vessel.

25. The liner of claim 24, wherein a fluid is dispensed from within the interior cavity by applying a pressure between the over-pack and the liner.

26. The liner of claim 18, wherein the liner wall comprises metal.

27. The liner of claim 16, wherein the liner wall comprises polyethylene naphthalate (PEN).

28. The liner of claim 16, further comprising choke-off prevention means.

29. The liner of claim 16, further comprising a third panel welded to the first and second panels to form a gusseted panel, such that, when the liner is empty, the first, second, and third panels fold substantially flat, and when the liner is filled, the gusseted panel expands and the first, second, and third panel form an interior cavity.

30. A liner comprising:

a liner wall forming an interior cavity of the liner, the liner wall having a thickness of between about 0.5 mm to about 3 mm.

31. The liner of claim 30, wherein the liner wall is substantially rigid having a thickness such that the liner is substantially self-supporting in an expanded state but collapsible at a pressure of less than about 20 psi to dispense fluid from within the interior cavity.

32. The liner of claim 30, wherein the liner wall comprises polyethylene naphthalate (PEN).

33. The liner of claim 30, further comprising a layer of barrier enhancing material.

34. The liner of claim 30, wherein the liner comprises one or more folds or indentations in the liner wall to deter random collapsing of the liner during dispense of fluid from within the interior cavity.