CLAIMS

1. A vessel comprising:

a first shell part having a first dimension, a second dimension and a third dimension, the first and second dimensions of the first shell part defining a first major surface area, the first major surface area comprising rounded corners, and a perimeter of the first shell part having a first swept rim profile and a first flange that is parallel to the first major surface area and extending outwardly from a perimeter edge of the first swept rim profile, wherein the third dimension of the first shell defines a distance from the first major surface to the first flange;

a second shell part having a first dimension, a second dimension and a third dimension, the first and second dimensions of the second shell part defining a second major surface area, the second major surface area comprising rounded corners, and a perimeter of the second shell part having a second swept rim profile and a second flange that is parallel to the second major surface area and extending outwardly from a perimeter edge of the second swept rim profile, wherein the third dimension of the second shell defines a distance from the second major surface to the second flange;

an enclosed volume defined by a space interposed between an inner surface of the first shell part and an inner surface of the second shell part when a face surface of the first flange is joined together with a face surface of the second flange, wherein the enclosed volume is isolated from an exterior of the vessel;

~~The device of claim 1,~~ wherein the vessel is comprised of a thermoplastic material;

~~2.~~

~~The device of claim 1,~~ wherein the face surfaces of the first and second flanges are joined by a heat weld;

~~3.~~

~~The device of claim 2,~~ wherein the thermoplastic material is a copolyester; and

~~4.~~

~~5.~~ ~~The device of claim 4,~~ where the copolyester is TritanTM MP100 supplied by the Eastman Chemical Company.

~~6. The device of claim 1, further comprising a depression formed in at least one of the first and second major surfaces.~~

~~7. The device of claim 6, wherein the depression comprises a single radially symmetric wall.~~

~~8. The device of claim 6, wherein the depression comprises at least two walls.~~

~~9. The device of claim 8, wherein the at least two walls comprise a subregion having a thickness less than a wall thickness of a remainder of the at least two walls.~~

10. The device of any of claims 6 through 9, wherein the depression is located on a corner surface of at least one of the first and second major surfaces.

11. The device of any of claims 6 through 10, further comprising a through-hole in communication with the enclosed volume and joined to a solid material part via a heat weld, wherein the solid material part selectively seals the through-hole to isolate the though-hole from the exterior of the vessel.

12. The device of any of claims 6 through 11, wherein the depression is located on the swept rim of the vessel.

13. The device of any of claims 6 through 12, further comprising an airtight label reversibly bonded to the exterior of the vessel and placed overtop the depression to isolate a volume of the depression from the exterior of the vessel.

14. The device of claim 1, wherein the swept rim profile comprises a curvature configured to permit an expansion and/or a contraction of a path length of the swept rim profile.

15. The device of claim 1, wherein a ratio between the first dimension and a combined dimension of the second and third dimensions is from 1:1 to 4:1.

16. The device of claim 1, wherein a ratio between the first dimension and third dimension is from 1:1 to 30:1.

17. The device of claim 1, wherein a ratio between the first dimension and third dimension is from 2:1 to 20:1.

18. The device of claim 1, wherein the first dimension multiplied by the second dimension is from 3 cm^2 to 300 cm^2.

19. The device of claim 1 wherein the first dimension multiplied by the second dimension is from 300 cm^2 to 1000 cm^2.

20. The device of claim 1, wherein at least one of the first and second flanges have a width greater than 1 mm

21. The device of claim 1, further comprising a protective bumper in contact with a perimeter edge of the first and second flanges.

22. The device of claim 21, wherein the protective bumper encases a portion of the perimeter edge of the first and second flanges.

23. The device of claim 21, wherein the protective bumper is constructed from a felt material.

24. The device of claim, 23 wherein the felt material is polypropylene.

~~25. The device of any of claims 1 through 24, wherein the first shell part is a molded shell, the second shell part is a planar sheet, and the first and second shell parts are nominally rectangular.~~

~~26. The device of any of claims 1 through 25, further comprising a conduit forming a portion of at least one of the first and second swept rim profiles.~~

~~27. The device of claim 26, wherein a perimeter edge of the second flange of the second shell part extends beyond a perimeter edge of the first flange of the first shell part.~~

~~28. The device of any of claims 1 through 27, further comprising a cutout region provided in at least one of the first flange and the second flange.~~

~~29. The device of any of claims 1 through 28, further comprising at least one of an electrically conductive circuit and an electronic sensor interposed between a first lamination layer and a second lamination layer of the first or second shell part.~~

~~30. The device of claim 29, wherein the electronic sensor is a temperature sensor.~~

~~31. The device of claim 30, wherein the temperature sensor is selected from the group consisting of a thermistor, a RTD sensor, or a thermocouple.~~

~~32. The device of any of claims 29 through 31, wherein a contact portion of the conductive circuit is exposed and/or accessible through the first or second lamination layer.~~

~~33. The device of any of claims 1 through 32, further comprising a driver element disposed within the enclosed volume.~~

~~34. The device of claim 33, wherein the driver element comprises a ferritic sheet material laminated between two sheets of inert material.~~

~~35. The device of claim 34, wherein the inert material comprises a polymer.~~

~~36. The device of any of claims 1 through 35 wherein the enclosed volume comprises a plurality of chambers.~~

~~37. The device of claim 36, wherein at least two of the plurality of chambers are independent from one another.~~

~~38. The device of claim 36, wherein at least one of the plurality of chambers comprises a liquid selected from the group consisting of a solution, a composition, a formulation, a particulate suspension, a viral suspension, a cellular suspension, and a multicellular organism suspension.~~

~~39. The device of claim 36, wherein at least two chambers of the plurality of chambers are interconnected.~~

~~40. The device of claim 39, wherein the at least two chambers are interconnected by a pathway selected from the group consisting of a passageway, a conduit, a valve, a gate, an aperture, a lumen, a tube, a channel, and a tunnel.~~

~~41. The device of any of claims 1 through 40, wherein at least one of the first and second shell parts are formed via a vacuum molding process.~~

~~42. A method for storing a liquid in a vessel described in any of claims 1 through 41, said method comprising steps for:~~

~~locating a corner of the vessel having a depression;~~

~~elevating the corner to a position that is higher than the remaining corners of the vessel;~~

~~puncturing the depression;~~

~~accessing an enclosed volume of the vessel through the punctured depression;~~

~~inserting a filling needle into the punctured depression;~~

~~introducing a liquid into the enclosed volume via a first portion of the filling needle while simultaneously removing displaced gas from the enclosed volume via a second portion of the filling needle;~~

~~withdrawing the filling needle from the enclosed volume and punctured depression; and~~

~~occluding the punctured depression.~~

~~43. The method of claim 42, further comprising a step for applying a protective cover over the occluded punctured depression.~~

~~44. The method of claim 42, further comprising a step for removing a protective cover from the depression prior to the step for puncturing the depression.~~

~~45. The method of claim 42, wherein the step for occluding the punctured depression comprises inserting a plug into the punctured depression.~~

~~46. The method of claim 45, further comprising a step for fusion sealing the plug to the depression, wherein the enclosed volume is isolated from an exterior of the vessel.~~

~~47. A method for withdrawing a liquid from a vessel described in any of claims 1 through 41, said method comprising steps for:~~

~~locating a first corner of the vessel having a first depression;~~

~~elevating the corner to a position that is higher than the remaining corners of the vessel;~~

~~puncturing the depression with a venting tool;~~

~~locating a second depression on a second corner of the vessel that is positioned opposite the first corner of the vessel;~~

~~puncturing the second depression with an extraction tool; and~~

~~withdrawing the liquid from the vessel.~~

48. The method of claim 47, further comprising a step for removing a protective cover from at least one of the first and second depressions prior to puncturing.

49. The method of claim 47, wherein the venting tool and extraction tool are sterile.

50. A method for thawing the solidified contents of a vessel described in any of claims 33 through 35, wherein said driver element is in contact with an interior surface of the first shell part that corresponds to the first major surface area, said method comprising steps for:

clamping the vessel between a first heater block and a second heater block, wherein the first heater block is in contact with the first major surface area, and the second heater block is in contact with the second major surface area, the second heater block further comprising a magnetic source;

increasing a temperature of the first and second heater blocks;

activating the magnetic source;

magnetically attracting the driver element to an interior surface of the second shell part that corresponds to the second major surface area; and

biasing the solidified contents against the interior surface of the second shell part via the driver element and the magnetic source.

51. The method of claim 50, further comprising a step for decreasing a temperature of the first heater block at a time in which a liquid phase of the solidified contents is present within the vessel.

52. The method of claim 50, wherein the magnetic source is selected from the group consisting of a permanent magnet and an electromagnet.

53. The method of claim 50, further comprising a step for removing the first and second heater blocks from the vessel.

54. A method for transferring cells from a cryoprotectant media to a recovery media using a vessel described in any of claims 36 through 40, said method comprising steps for:

filling a first chamber of the vessel with a cell suspension;

filling a second chamber of the vessel with a media selected from the group consisting of a recovery media and an injection media;

interconnecting the first and second chambers by a first pathway having a gate comprising a closed state and an open state, wherein said closed state is changed to the open state by subjecting the vessel to a centrifugal force;

interconnecting the first and second chamber by a second pathway comprising a valve configured to permit passage of gas in response to the centrifugal force; and

~~subjecting the vessel to the centrifugal force, whereupon the cell suspension from the first chamber passes into the second chamber via the gate, and gas within the second chamber passes into the first chamber via the valve.~~

~~55. The method of claim 54, wherein the second conduit is positioned distal to the first chamber along a centrifugal force field vector of the vessel.~~

~~56. The method of claim 54, wherein a portion of the second chamber is positioned distal to the gate and along a centrifugal force field vector of the vessel.~~

~~57. The method of claim 54, further comprising a step for positioning a gas within the second chamber to a proximal end of the second chamber that runs parallel to the first chamber and connects the first chamber to the first chamber via the valve, such that only the media within the second chamber contacts the gate.~~

~~58. The method of claim 54, wherein the centrifugal force simultaneously promotes the cell suspension to pass through the gate and into the second chamber, and the air to pass from the second chamber and into the first chamber via the valve.~~

~~59. The method of claim 54, further comprising a step for resuming the closed state of the gate and closing the valve by reducing the centrifugal force.~~

~~60. The method of claim 59, further comprising a step for gently agitating the cell suspension and the media in the second chamber.~~

~~61. The method of claim 60, further comprising a step for removing the cell suspension and media from the second chamber via an extraction port of the vessel.~~