

What is claimed is:

1. A bioprocess vessel having an integrated pump comprising:
a flexible bag defining an interior volume and having a bottom surface, the bottom surface containing an aperture therein for the passage of fluid; and
a pump having an inlet and an outlet, the pump being secured to the bottom surface of the flexible bag whereby fluid passes from the interior volume of the flexible bag and into the inlet of the pump.
2. The bioprocess vessel having an integrated pump of claim 1, further comprising a port disposed in the aperture of the flexible bag, wherein the bottom surface of the flexible bag is secured to port.
3. The bioprocess vessel having an integrated pump of claim 2, wherein the port comprises a flanged end and wherein the pump is secured to the flanged end of the port.
4. The bioprocess vessel having an integrated pump of claim 1, wherein the pump comprises a pump head having a port integrated therein and wherein the port is secured to the bottom surface of the flexible bag by one of a bonded interface, a welded interface, and an adhesive or glue.
5. The bioprocess vessel having an integrated pump of claim 1, wherein the pump is secured to the bottom surface of the flexible bag by one or more fasteners extending through the bottom surface of the flexible bag and interfacing with a mixing adapter disposed in the interior volume of the flexible bag.
6. The bioprocess vessel having an integrated pump of claim 1, wherein the pump is secured to the flexible bag by one of a bonded interface, a welded interface, and an adhesive or glue.
7. The bioprocess vessel having an integrated pump of claim 1, wherein the pump is integrally molded or formed with the flexible bag.

8. The bioprocess vessel having an integrated pump of claim 1, further comprising a mixing adapter secured to the pump and disposed at least partially in the interior volume of the flexible bag, the mixing adapter at least partially covering the inlet of the pump.

9. The bioprocess vessel having an integrated pump of claim 1, further comprising a mixing adapter secured to the pump via a plurality of fasteners extending through the bottom surface of the bag, the a mixing adapter disposed in the interior volume of the flexible bag and at least partially covering the inlet of the pump.

10. The bioprocess vessel having an integrated pump of claim 1, further comprising a detachable motor secured to the pump.

11. The bioprocess vessel having an integrated pump of claim 1, wherein the pump comprises a diaphragm pump or a centrifugal pump.

12. The bioprocess vessel having an integrated pump of claim 1, wherein the pump comprises a pump head formed from a polymer or resin material.

13. A single-use bioprocess vessel having an integrated pump comprising:
a substantially rigid container formed from a resin or polymer material defining an interior volume and having a bottom surface; and
a pump having an inlet and an outlet, the pump being secured to the bottom surface of the substantially rigid container whereby fluid passes from the interior volume of the substantially rigid container and into the inlet of the pump.

14. The single-use bioprocess vessel having an integrated pump of claim 13, further comprising a port extending through the bottom surface.

15. The single-use bioprocess vessel having an integrated pump of claim 14, wherein the port comprises a flanged end and wherein the pump is secured to the flanged end.

16. The single-use bioprocess vessel having an integrated pump of claim 13, wherein the pump is secured to the bottom surface of the substantially rigid container by one

or more fasteners extending through the bottom surface of the substantially rigid container and interfacing with a mixing adapter.

17. The single-use bioprocess vessel having an integrated pump of claim 13, wherein the pump is secured to the bottom surface of the substantially rigid container with one of a bonded interface, a welded interface, and an adhesive or glue.

18. The single-use bioprocess vessel having an integrated pump of claim 13, wherein the pump is integrally molded with the substantially rigid container.

19. The single-use bioprocess vessel having an integrated pump of claim 13, further comprising a mixing adapter secured to the pump and disposed in the interior volume of the substantially rigid container, the mixing adapter at least partially covering an inlet to the pump.

20. The single-use bioprocess vessel having an integrated pump of claim 13, further comprising a mixing adapter secured to the pump via a plurality of fasteners extending through the bottom surface of the substantially rigid container, the mixing adapter disposed in the interior volume of the substantially rigid container and at least partially covering an inlet to the pump.

21. The single-use bioprocess vessel having an integrated pump of claim 13, further comprising a lid having one or more ports formed therein.

22. The single-use bioprocess vessel having an integrated pump of claim 21, further comprising a rotating shaft extending through the lid and into the interior of the substantially rigid container and having an impeller thereon.

23. The single-use bioprocess vessel having an integrated pump of claim 13, further comprising a detachable motor secured to the pump.