include second port attached to the second chamber, the second port configured to introduce the reconstituting solution for reconstituting the lyophilized pharmaceutical product in the first chamber. A health care worker may break the seal to mix the lyophilized pharmaceutical product and the reconstituting solution. In another example, there is described a flexible pharmaceutical bag comprising: a first chamber configured to hold a lyophilized pharmaceutical product; a second chamber separated from the first chamber, the second chamber configured to hold a reconstituting solution for reconstituting the lyophilized pharmaceutical product in the first chamber; a seal disposed between the first chamber and the second chamber that separates and seals the first chamber from the second chamber; and a first port attached to the first chamber, the first port configured to introduce a pharmaceutical product into the first chamber and allow passage of water vapor from the pharmaceutical product during lyophilization of the pharmaceutical product. In yet another example, there is disclosed a flexible pharmaceutical bag for lyophilizing a cytotoxic pharmaceutical product within the bag, the bag comprising: a front film; a back film; an outer seal joining the front film to the back film around a perimeter of the pharmaceutical bag; and a breakable seal joining the front film and the back film interior of the outer seal, the breakable seal defining a first chamber and a second chamber separated from the first chamber, wherein the first chamber is configured to hold a lyophilized pharmaceutical product, wherein the second chamber is configured to hold a reconstituting solution for reconstituting the lyophilized pharmaceutical product in the first chamber, and wherein the breakable seal breaks before the outer seal when a predetermined amount of pressure is applied to the flexible pharmaceutical bag.

[0007] In another example of the disclosure, the bag may be fabricated from a material that is able to withstand autoclave sterilization at 121° Celsius and lyophilization at -45° Celsius.

WHAT IS CLAIMED IS:

1. A method of preparing a pharmaceutical product in a multiple chamber flexible bag, the method comprising:

introducing a pharmaceutical product in a liquid state into a first chamber of the flexible bag through a first port; and

lyophilizing the pharmaceutical product within the first chamber of the flexible bag to provide a lyophilized pharmaceutical product,

wherein the flexible bag has a second chamber and the first chamber and the second chamber are separated by a breakable seal, and

wherein the pharmaceutical product is a cytotoxic drug.

2. The method according to claim 1, further comprising introducing a reconstituting solution into the second chamber of the flexible bag.

3. The method according to claim 1, further comprising introducing a gas into the first chamber and sealing the first port after the pharmaceutical product in the first chamber has been lyophilized.

4. The method according to claim 2, further comprising applying a predetermined amount of pressure to the flexible bag to break the breakable seal between the first chamber and the second chamber; and

mixing the reconstituting solution with the lyophilized pharmaceutical product in the first chamber to create a reconstituted pharmaceutical product.

5. The method according to claim 4, further comprising administering the reconstituted pharmaceutical product to a patient through an administration port disposed in the flexible bag.

6. The method according to claim 1, wherein the breakable seal is formed between the first chamber and the second chamber by joining a front surface of the flexible bag and a back surface of the flexible bag.

7. The method according claim 6, wherein the breakable seal comprises a weak point where the breakable seal is not as wide as the rest of the breakable seal, and

wherein the breaking of the breakable seal initiates at the weak point when pressure is applied to the flexible bag.

8. The method according to claim 1, wherein the pharmaceutical product is an antineoplastic or an immunomodulating agent.

9. The method according to claim 1, wherein the cytotoxic drug is selected from the group consisting of: azacytidine, belinostat, bendamustine, brentuximab vedotin, bleomycin, bortezomib, busulfan, carboplatin, carmustine, cyclophosphamide, cytarabine, dacarbazine, dactinomycin, daunorubicin, decitabine, deferoxamine, doxorubicin, epirubicin hydrochloride, fludarabine, fotemustine, fulvestrant, gemcitabine, idarubicin, ifosfamide, irinotecan hydrochloride, ixabepilone, melphalan, methotrexate, oxaliplatin, paclitaxel, pemetrexed, pentostatin, raltitrexed, romidepsin, temozolomide, thiotepa, topotecan, trabectedin, trastuzumab, and vinblastine.

10. The method according to claim 2, wherein the reconstituting solution is a 0.9% saline solution.

11. The method according to claim 1, wherein the bag is fabricated from a polyolefin/styrene-block copolymer based film.