

CLAIMS

What is claimed is:

1. A packaging for a sterile syringe having a nominal size of less than 1 mL, the packaging comprising:

a flexible tray having a cavity for containing the sterile syringe, wherein the cavity includes an opening, one or more sidewalls, and a base;

a lip surrounding the opening, wherein the lip extends radially outward from the cavity and defines a periphery of the tray;

a removable cover having a periphery that is adhered to the lip, wherein the removable cover is permeable to a gaseous sterilant, including one or more of vaporized hydrogen peroxide or ethylene oxide; and

a projection associated with the base of the cavity and extending away from the base of the cavity in a direction opposite to the opening of the cavity.

2. The packaging of claim 1, wherein the projection is dome-shaped, and wherein a diameter of a base of the dome-shaped projection is approximately 10 mm to 20 mm.

3. The packaging of claim 1, wherein the cavity includes three cavity portions arranged in series along a longitudinal axis of the tray, wherein the three cavity portions are connected to each other via narrowed portions.

4. The packaging of claim 3, wherein the projection is associated with a middle cavity portion of the three cavity portions, and wherein the tray is formed from a suitable

thermoplastic material, including one or more of polypropylene, polystyrene, polyethylene, polycarbonate, polyvinyl chloride, or polyethylene terephthalate glycol.

5. The packaging of claim 3, wherein, when the sterile syringe is contained within the cavity, a height of the projection from an apex of the projection to a base of the projection is approximately 5 mm to 6 mm, and a distance between the base of the projection and a portion of the syringe overlying the projection is approximately 3 mm to 4 mm.

6. The packaging of claim 5, wherein the sterile syringe is a pre-filled syringe.

7. The packaging of claim 1, wherein the tray includes at least two geometrical features located on at least one sidewall of the packaging to retain the syringe within the cavity by friction fit.

8. The packaging of claim 7, wherein the tray includes a third geometrical feature located on the base of the cavity below where the sterile syringe is to be contained within the cavity.

9. A packaging comprising:
a tray having an opening and a cavity, wherein the cavity includes a plurality of sidewalls and a base;
a sterile syringe contained within the cavity, wherein the sterile syringe is pre-filled with a medicament; and
a projection associated with the tray at a location in line with a portion of the sterile syringe;

wherein, in a first state, the projection extends away from the sterile syringe in a direction opposite from the opening of the cavity;

wherein the projection is configured to transition from the first state to a second state when subjected to pressure; and

wherein, in the second state, the projection is inverted so that a portion of the projection extends towards the portion of the sterile syringe in line with the projection.

10. The packaging of claim 9, wherein the projection is located in line with a barrel of the sterile syringe when in the first state.

11. The packaging of claim 9, wherein the cavity includes three cavity portions, wherein a first cavity portion contains a plunger of the sterile syringe, a second cavity portion contains a barrel of the sterile syringe, and a third cavity portion contains a needle attachment portion of the sterile syringe.

12. The packaging of claim 11, wherein the three cavity portions are connected to one another by intermediate narrowed portions, and wherein the sterile syringe extends through the narrowed portions.

13. The packaging of claim 12, wherein the narrowed portions include a plurality of geometric features projecting into the narrowed portions to position the sterile syringe away from the plurality of sidewalls.

14. The packaging of claim 13, further comprising a removable cover sealing the opening of the cavity opposite the base, wherein the removable cover is permeable to a gaseous sterilant configured to maintain a sterile barrier.

15. The packaging of claim 9, wherein the medicament is one of aflibercept, ranibizumab, bevacizumab, conbercept, OPT-302, RTH258 (brolocizumab), a pegylated designed ankyrin repeating protein (DARPin), or RG7716.

16. A method of removing an externally-sterilized syringe from packaging, the method comprising:

peeling off a removable cover from a blister packaging tray having a cavity configured to contain the externally-sterilized syringe therein, wherein the blister packaging tray includes a projection associated with a base of the cavity of the blister packaging tray and aligned with the externally-sterilized syringe;

pushing a portion of the projection towards the cavity of the blister packaging tray, wherein pushing the portion of the projection causes a portion of the blister packaging tray to flex; and

orienting the blister packaging tray so that an opening of the cavity faces a sterile surface to discharge the externally-sterilized syringe from the blister packaging tray and onto the sterile surface.

17. The method of claim 16, wherein the externally-sterilized syringe is pre-filled with aflibercept, ranibizumab, bevacizumab, conbercept, OPT-302, RTH258 (brolocizumab), a pegylated designed ankyrin repeating protein (DARPin), or RG7716.

18. The method of claim 16, wherein the blister packaging tray is fabricated from a material including one or more of polypropylene, polystyrene, polyethylene, polycarbonate, polyvinyl chloride, or polyethylene terephthalate glycol.

19. The method of claim 16, wherein the removable cover is permeable to a gaseous sterilant.

20. The method of claim 19, wherein the gaseous sterilant is vaporized hydrogen peroxide.

21. A method of removing an externally-sterilized syringe from a packaging, the packaging including a tray having a cavity, a deformable projection associated with the cavity, and an opening covered by a gas-permeable material, the method comprising:
removing the gas-permeable material so as to expose the opening of the tray;
deforming the projection into the cavity and toward a barrel of the externally-sterilized syringe, wherein the step of deforming the projection also causes a portion of the tray to flex; and
ejecting the externally-sterilized syringe from the tray.

22. The method of claim 21, wherein ejecting the externally-sterilized syringe from the tray is performed without a user directly handling the syringe.

23. The method of claim 21, wherein the gas-permeable material is permeable to vaporized hydrogen peroxide or ethylene oxide.

24. The method of claim 21, wherein the deformable projection includes a bulbous shape.

25. The method of claim 21, wherein the externally-sterilized syringe is pre-filled with aflibercept, ranibizumab, bevacizumab, ranibizumab, bevacizumab, conbercept, OPT-302, RTH258 (brolocizumab), a pegylated designed ankyrin repeating protein (DARPin), or RG7716.

26. A method of removing an externally-sterilized syringe from a packaging, the packaging including a tray having a cavity, and an opening covered by a gas-permeable material, the method comprising:

removing the gas-permeable material so as to expose the opening of the tray;

deforming a portion of the cavity toward a barrel of the externally-sterilized syringe, so as to cause a portion of the tray to flex; and

ejecting the externally-sterilized syringe from the tray.

27. The method of claim 26, wherein ejecting the externally-sterilized syringe from the tray is performed without a user touching the externally-sterilized syringe with a bare hand.

28. The method of claim 26, wherein the gas-permeable material is permeable to one or more of vaporized hydrogen peroxide or ethylene oxide.

29. The method of claim 26, wherein the externally-sterilized syringe is pre-filled with aflibercept, ranibizumab, bevacizumab, conbercept, OPT-302, RTH258 (brolocizumab), a pegylated designed ankyrin repeating protein (DARPin), or RG7716.