

CLAIMS

1. A combination safety needle assembly (100) and a packaging system for the safety needle assembly (100) comprising:

a base unit (140) comprising a base wall (142) located between two sidewalls (144a, 144b) and defining an interior cavity (146);

a cap (110) connected to the base unit (140) at an interface, the cap (110) comprising a base wall (112) located between two sidewalls (114a, 114b) and defining an interior cavity (118) having a latch (128);

a needle hub (102) and a needle (104) combination, said needle hub (102) attached to the base unit (140) and said needle (104) extending into the interior cavity (118) of the cap (110);

wherein the sidewalls (114a, 114b) of the cap (110) and the sidewalls (144a, 144b) of the base unit (140) define an open perimeter edge (90) and the interior cavity (118) of the cap (110) and the interior cavity (146) of the base unit (140) define a package cavity; characterized in that

a thermoplastic film (190) is attached to the open perimeter edge (90) and extends along a rear exterior surface (194) of the base unit and the rear exterior surface (196) of the cap and across the interface or seam (202) between the cap (110) and the base unit (140) to enclose the combination needle hub (102) and needle (104) within the package cavity and forms a hinge at the interface or seam (202).

2. The combination of claim 1, wherein the thermoplastic film (190) comprises a first film piece (204) and a second film piece (206) separated from one another by a perforation (208) or a distinct separation.

3. The combination of claim 1, wherein the second film piece (206) remains and holds the cap (110) to the base unit (140), when the first film piece (204) is removed from the package cavity (156).

4. The combination of claim 3, wherein the second film piece (206) functions as a hinge (205) between the cap (110) and the base unit (140).

5. The combination of any of the preceding claims, wherein the two sidewalls (144a, 144b) of the base unit (140) and the two sidewalls (114a, 114b) of the cap (110) overlap along an axial direction.

6. The combination of any of the preceding claims, wherein the needle hub (102) is unitarily formed with the base unit (140).

7. The combination of claim 6, wherein the needle hub (102) is molded with a distal wall (174) on the base unit (140).

8. The combination of claim 7, wherein the distal wall (174) on the base unit (140) connects to the base wall (142) and the two sidewalls (144a, 144b) of the base unit (140).

9. The combination of any of the preceding claims wherein the latch (128) comprises a post (132) and a ramp (134) mounted at an end of the post (132).

10. A combination safety needle assembly (100) and a packaging system for the safety needle assembly (100) comprising:

a base unit (140) comprising an enclosure having a base wall (142) located between two sidewalls (144a, 144b), said enclosure having an interior cavity (146) and a perimeter edge (90) with a proximal end edge;

a cap (110) hingedly connected to the base unit (140) at an interface or a seam (202) by a film layer, the cap (110) comprising an enclosure having a base wall (112) located between two sidewalls (114a, 114b), said enclosure defining an interior cavity (118) having a latch (128) and a perimeter edge (90);

a needle hub (102) and a needle (104) combination, said needle hub (102) attached to the base unit (140) and said needle (104) extending into the interior cavity (118) of the cap (110);

wherein the needle hub (102) is recessed within the proximal end edge (148, 150) of the base unit (140) and wherein a film cover (190) is attached to the perimeter edge (90) of the cap

(110) and the perimeter edge (90) of the base unit (140) to enclose the combination needle hub (102) and needle (104) within the interior cavity (118) of the cap (110) and the interior cavity (146) of the base unit (140).

11. The combination of claim 10, wherein the film layer and the film cover (190) are spaced from one another.

12. The combination of claims 10 or 11, wherein a perforation is located between the film layer and the film cover (190).

13. The combination of any of claims 10 to 12, wherein the two sidewalls (114a, 114b) of the cap (110) and the two sidewalls (144a, 144b) of the base unit (140) overlap along an axial direction.

14. The combination of any of claims 10 to 13, further comprising a second needle assembly connected to the base unit (140) and cap (110) via a tear line.

15. The combination of any of claims 10 to 14, wherein the needle hub (102) is unitarily formed with the base unit (140).

16. The combination of any of claims 10 to 15, wherein the needle hub (102) snap fits into a C-clamp formed on the base unit (140).

17. A dual use needle assembly (100) comprising a packaging housing (156) having a needle hub (102) and a needle (104) located within an enclosure having a perimeter edge (90) and a film cover (190) attached to the perimeter edge (90) to seal the needle hub (102) and needle (104) within the packaging housing (156), and wherein the packaging housing (156) comprises a cap (110) having two sidewalls (114a, 114b) and a base unit (140) having two sidewalls (144a, 144b) and wherein the sidewalls (114a, 114b, 144a, 144b) of the cap (110) and the base unit (140) overlap along an axial direction, and wherein the cap (110) is attached to the

base unit (140) by a second film cover (206) that spans across a seam (202) located between the cap (110) and the base unit (140) to form a living hinge.

18. The dual use needle assembly (100) of claim 17, further comprising a second dual use needle assembly (100) and a third dual use needle assembly (100) connected in an array.

19. A method for manufacturing a dual use needle assembly (100) comprising:
forming a base unit (140) comprising two sidewalls (144a, 144b) and a base wall (142) and a needle hub (102) having a needle (104) with a sharpened needle tip;
forming a cap (110) comprising two sidewalls (114a, 114b) and a base wall (112);
attaching a film cover (190) to outer edges of the two sidewalls (114a, 114b, 144a, 144b) of the cap (110) and of the base unit (140); and
overlapping the two sidewalls (114a, 114b) of the cap (110) with the two sidewalls (144a, 144b) of the base unit (140) along an axial direction, further comprising attaching a second film cover (206) across a seam (202) located between the base wall (112) of the cap (110) and the base wall (142) of the base unit (140), and wherein the second film cover (206) functions as a living hinge.

20. The method of claim 19, further comprising placing the needle (104) on a first side of a latch (128) comprising a post (132) and a ramp (134).

21. A dispenser system comprising a dispenser having a wall structure (288) defining a storage space (286), an array of needle assemblies (100), a dispersed bundle of needle assemblies (100), or both an array of needle assemblies (100) and a dispersed bundle of needle assemblies (100) located in the storage space (286); and wherein each needle assembly (100) comprises:

a package housing (156) comprising a base unit (140) comprising sidewalls (144a, 144b) and a base wall (142) hingedly connected to a cap (110) comprising sidewalls (114a, 114b) and a base wall (112) by a film layer (206) that extends between the cap (110) and the base unit (140);

a film cover (190) affixed to a perimeter edge (90) of the package housing (156);
a needle hub (102) and needle (104) sealed inside the package housing (156) by the film cover (190); and
sidewalls (114a, 114b, 144a, 144b) of the cap (110) and the base unit (140) overlapping along an axial direction, and
a second film cover (206) that spans across a seam (202) located between the cap (110) and the base unit (140) to form a living hinge.