

WHAT IS CLAIMED IS:

1. A disinfection cap having a housing comprising:
 - a top wall and a cylindrical sidewall having an inner surface defining a cavity,
5 and an outer surface,

an open bottom formed by the cylindrical sidewall with an opening to the cavity
within said housing for receiving a hub of a luer connector;

an open cell foam structure disposed within the cavity, the open cell foam
structure abutting a top wall of the cavity, the open cell foam structure being
10 impregnated with disinfectant fluid in a pre-activated state; and

a closed cell foam structure disposed against the open cell foam structure, the
closed cell foam structure being configured as a blockage feature for fluidly blocking
the hub of the luer connector, wherein when the hub of said luer connector is received
within said inner surface of said cavity.
- 15 2. The disinfection cap of claim 1, wherein the open cell foam structure is bonded to the
closed cell foam structure.
3. The disinfection cap of claim 1, wherein insertion of the luer connector causes
compression of the open cell foam structure, thereby releasing fluid.
4. The disinfection cap of claim 1, wherein the closed cell foam structure has a polygonal
20 shape.
5. The disinfection cap of claim 4, wherein the closed cell foam structure has one of a
multitude of corners which engage the inner surface of the housing in an interference fit.
6. The disinfection cap of claim 5, wherein a gap is formed between one of a multitude of
flat portions and the inner surface of the housing, the gap creating a pathway for disinfectant to
25 flow through upon compression of the open cell foam structure.
7. The disinfection cap of claim 4, wherein the closed cell foam structure has a hexagonal
shape.

8. The disinfection cap of claim 4, wherein the closed cell foam structure has a pentagonal shape.
9. The disinfection cap of claim 1, wherein the closed cell foam structure has a star shape.
10. The disinfection cap of claim 9, wherein the closed cell foam structure has one of a
5 multitude of points which engage the inner surface of the housing in an interference fit.
11. The disinfection cap of claim 10, wherein a gap is formed between one of a multitude of inner points and the inner surface of the housing, the gap creating a pathway for disinfectant to flow through upon compression of the open cell foam structure.
12. The disinfection cap of claim 4, wherein the closed cell foam structure has a four-point
10 star shape.
13. The disinfection cap of claim 4, wherein the closed cell foam structure has a five point star shape.
14. The disinfection cap of claim 1, further including an at least one thread on said outer surface of the housing, said at least one thread being sufficient to interlock with a mating
15 feature of the luer connector.
15. The disinfection cap of claim 6, wherein said hub is secured within said inner surface of said cavity by interlocking at least a portion of at least one thread with a mating feature on said hub of said luer connector.
16. The disinfection cap of claim 1, wherein a removable peelable seal covers an opening
20 to the cavity.
17. The disinfection cap of claim 1, wherein the open cell foam structure has a polygonal shape.
18. The disinfection cap of claim 1, wherein the open cell foam structure has a star shape.
19. A method of manufacturing of a disinfection cap, comprising:
25 bonding sheets of closed cell foam to open cell foam into a bonded open cell foam structure and closed cell foam structure;
cutting the bonded open cell foam structure and closed cell foam structure into a shape; and,

inserting the bonded open cell foam structure and closed cell foam structure into a cavity of a housing of a disinfection cap.

20. The method of manufacturing of claim 19 further comprising:

5 impregnating the bonded open cell foam structure with disinfectant before inserting the bonded open cell foam structure and closed cell foam structure.

21. The method of manufacturing of claim 19 further comprising:

 impregnating the bonded open cell foam structure with a disinfectant through a gap formed between a flat portion of the closed cell foam structure and an inner surface of the cavity of the housing.

10 22. The method of manufacturing of claim 19 further comprising:

 placing a peelable seal on an open end of the housing to seal the cavity and the disinfectant within.