CLAIMS

1. A bag holder for supporting a bioprocess bag during freezing, comprising:

a bag tray including:

a basin, surrounded in part by a first side wall, a second side wall, and an end wall, the end wall including a recessed portion forming a neck; and

bulkheads extending outwards, away from the basin;

wherein the first side wall includes a first set of alternating extended and recessed sections and a first channel extending through at least a portion of the first set of alternating extended and recessed sections;

the second side wall includes a second set of alternating extended and recessed sections and a second channel extending through at least a portion of the second set of alternating extended and recessed portions;

the first set of alternating extended and recessed sections and the second set of alternating extended and recessed sections are offset from one another in the length direction of the first side wall and the second side wall such that where the first set of alternating extended and recessed sections has an extended section, the second set of alternating extended and recessed sections has a recessed section, and where the first set of alternating extended and recessed sections has a recessed section, the second set of alternating extended and recessed sections has an extended section;

the bulkheads provide a space to accommodate tubes extending from the bioprocess bag located within the basin; and

the basin comprises ribs projecting inwards towards the basin to secure and shape the bioprocess bag during freezing.

2. The bag holder of claim 1, wherein the bag tray is a first bag tray, the bag holder further comprising a second bag tray, the second bag tray identical to the first.

3. The bag holder of claim 2, wherein the first bag tray is configured to be joined to the second bag tray by mating the first set of alternating extended and recessed sections of the first bag tray with the second set of alternating extended and recessed sections of the second bag tray, and the second set of alternating extended and recessed sections of the first bag tray with the first set of alternating extended and recessed sections of the second bag tray.

4. The bag holder of claim 3, wherein when the first bag tray is joined to the second bag tray, the first channel of the first bag tray and the second channel of the second bag tray form a first continuous channel configured to receive a first retention rod and the second channel of the first bag tray and the first channel of the second bag tray form a second continuous channel configured to receive a second retention rod.

5. The bag holder of claim 1, wherein the ribs extend from the first side wall to the second side wall.

6. The bag holder of claim 1, wherein the bulkheads extend around at least a portion of the basin.

7. The bag holder of claim 1, wherein the bag tray further comprises a second end wall opposite the end wall including the recessed portion.

8. The bag holder of claim 7, further comprising a projection on the second end wall on one side of a center line of the bag holder, and a recess on an opposite side of the center line of the bag holder from the projection, the recess sized such that it is configured to accommodate the projection.

9. A method of manufacturing a bag holder for freezing of a bioprocess bag, comprising: forming a first bag tray, the first bag tray including:

a basin, surrounded in part by a first side wall, a second side wall, and an end wall, the end wall including a recessed portion forming a neck, and bulkheads extending outwards, away from the basin,

wherein the first side wall includes a first set of alternating extended and recessed sections and a first channel extending through at least a portion of the first set of alternating extended and recessed sections;

the second side wall includes a second set of alternating extended and recessed sections and a second channel extending through at least a portion of the second set of alternating extended and recessed portions;

the first set of alternating extended and recessed sections and the second set of alternating extended and recessed sections are offset from one another in the length

direction of the first side wall and the second side wall such that where the first set of alternating extended and recessed sections has an extended section, the second set of alternating extended and recessed sections has a recessed section, and where the first set of alternating extended and recessed sections has a recessed section, the second set of alternating extended and recessed sections has an extended section;

the bulkheads provide a space to accommodate tubes extending from the bioprocess bag located within the basin;

the basin comprises ribs projecting inwards towards the basin to secure and shape the bioprocess bag during freezing; and

forming a second bag tray, identical to the first.

10. The method of claim 9, wherein forming the first bag tray includes thermoforming a material.

11. The method of claim 9, wherein forming the first bag tray includes injection molding or compression molding.

12. The method of claim 9, wherein forming the first bag tray includes cast molding.

13. A method of freezing a bioprocess bag, comprising:

providing a first bag tray, the first bag tray including:

a basin, surrounded in part by a first side wall, a second side wall, and an end wall, the end wall including a recessed portion forming a neck; and

bulkheads extending outwards, away from the basin;

wherein the first side wall includes a first set of alternating extended and recessed sections and a first channel extending through at least a portion of the first set of alternating extended and recessed sections;

the second side wall includes a second set of alternating extended and recessed sections and a second channel extending through at least a portion of the second set of alternating extended and recessed portions;

the first set of alternating extended and recessed sections and the second set of alternating extended and recessed sections are offset from one another in the length direction of the first side wall and the second side wall such that where the first set of

alternating extended and recessed sections has an extended section, the second set of alternating extended and recessed sections has a recessed section, and where the first set of alternating extended and recessed sections has a recessed section, the second set of alternating extended and recessed sections has an extended section;

the bulkheads provide a space to accommodate tubes extending from the bioprocess bag located within the basin; and

the basin comprises ribs projecting inwards towards the basin to secure and shape the bioprocess bag during freezing;

placing the bioprocess bag in the basin of the first bag tray such that a neck of the bioprocess bag is located in a neck of the first bag tray;

providing a second bag tray, the second bag tray being identical to the first bag tray;

joining the second bag tray to the first bag tray;

filling the bioprocess bag; and

freezing the bioprocess bag.

14. The method of claim 13, wherein freezing the bioprocess bag includes placing the bioprocess bag and the bag support into a blast freezer.

15. The method of claim 13, wherein filling the bioprocess bag occurs prior to joining the second bag tray to the first bag tray.

16. The method of claim 13, wherein filling the bioprocess bag occurs prior to placing the bioprocess bag in the basin of the first bag tray such that a neck of the bioprocess bag is located in a neck of the first bag tray and prior to joining the second bag tray to the first bag tray.