What Is Claimed Is:

1. A method for processing dry microcarrier material in a microcarrier bioprocess package, the method comprising:

filling a bioprocess package with dry microcarrier material, the bioprocess package comprising:

a 2D flexible container comprising an interior compartment, a height having an upper half and a lower half, an inlet and an outlet, the inlet and the outlet being disposed on the same half of the 2D flexible container; and

a channel-forming feature in the interior compartment of the container, the channel-forming feature being configured to maintain a fluid flow path that fluidly connects the interior compartment of the flexible container with the outlet;

sterilizing the dry microcarrier material in the bioprocess package;

hydrating the dry microcarrier material in the bioprocess package to form a hydrated microcarrier material;

washing the hydrated microcarrier material in the bioprocess package; and

aseptically transferring the hydrated microcarrier material from the bioprocess package to a cell culture vessel.

2. The method of claim 1, wherein filling a bioprocess package with dry microcarrier material comprises adding dry microcarrier material to the interior compartment of the bioprocess package.

3. The method of claim 1, wherein hydrating the dry microcarrier material in the bioprocess package comprises adding a hydrating fluid to the bioprocess package to contact the dry microcarrier material with the hydrating fluid.

4. The method of claim 3, wherein hydrating the dry microcarrier material in the bioprocess package further comprises forming at least two liquid phases having different densities and dispensing the less dense upper liquid phases from the bioprocess package.

5. The method of claim 1, wherein washing the hydrated microcarrier material comprises adding fluid and/or other components to the bioprocess package to contact the hydrated microcarrier material with the fluid and/or other components.

6. The method of claim 5, wherein washing the hydrated microcarrier material further comprises forming at least two liquid phases having different densities and dispensing the less dense upper liquid phases from the bioprocess package.

7. The method of claim 1, wherein aseptically transferring the hydrated microcarrier material comprises inverting the bioprocess package such that the half of the bioprocess package comprising the inlet and the outlet is positioned at the bottom of the bioprocess package such that gravity facilitates removal of the hydrated microcarrier material from the bioprocess package.

8. The method of claim 1, wherein aseptically transferring the hydrated microcarrier material comprises fluidly connecting the bioprocess package to the cell culture vessel through an aseptic connector.