CLAIMS

1) A process for the manufacturing of portable beverage products suitable for preparation of a beverage by infusion or solution of a first ingredient, which is liquid, with at least one second ingredient, said first ingredient and second ingredient being contained in the portable beverage product,

wherein the process is performed in a production line and the process comprises:

a) inserting an amount of said first liquid ingredient into a portable container by means of a filling head of said production line,

b) inserting a separation device into said container by using first insertion means of said production line, the separation device including sealing means comprising at least one removable barrier, and controlling said first insertion means to place the separation device in a target position;

c) inserting an amount of said at least one second ingredient into the second chamber by using second insertion means of said production line,

d) closing the container with closing means of said production line, after the insertion of the separation device and the insertion of said at least one second ingredient, to form the portable beverage product,

e) wherein the first insertion means are controlled to select the target position of the separation device so that:

e1) the separation device defines a first chamber and a second chamber of the container, wherein the first chamber contains the first ingredient;

e2) the separation device is placed above the liquid level of the first ingredient so that the second chamber is above the separation device and said separation device is placed at a suitable height relative to the walls of the container so that the second chamber

has a volume equal to or greater than the volume of first ingredient previously introduced in the first chamber;

e3) the separation device provides a connecting path for the first ingredient to flow from the first chamber into the second chamber, said connecting path being closed by said removable barrier

e4) the removable barrier is removable by a user to open the above mentioned connecting path and to put the first ingredient into contact with said at least one second ingredient.

2) The process according to claim 1, including the step of using said second insertion means to position a hollow filtering device inside the second chamber, wherein said hollow filtering device contains said at least one second ingredient, which is in a solid form.

3) The process according to claim 1 or 2 including the step of selecting the at least one second ingredient in the form of a powder.

4) The process according to any of the previous claims including the step of providing the separation device with a frangible barrier and with perforation means adapted to perforate said frangible barrier in order to open said connecting path.

5) The process according to any of the previous claims, including the step of: providing the separation device with a housing and placing a filtering device in said housing, wherein said filtering device contains, or is suitable to contain, said at least one second ingredient.

6) The process according to any of the previous claims, including the step of: giving a hollow shape to the separation device or to a part of the same, such that said separation device or said part of the separation device can be loaded with said at least one second ingredient and act as a filtering device.

7) The process according to any of the previous claims, including the step of providing the separation device with a housing in the form of a through hole, fixing a connecting path through said hole in a sealed manner so that said connecting path becomes part of the separation device and closing said connecting path by said removable barrier.

8) The process according to any of the previous claims including the step of adopting more than one pieces to form the separation device and connecting said pieces in a sealed manner so to perform a unique separation device structure.

9) The process according to claim 8 including the step of shaping in the form of a tube at least one of said pieces to be connected and inserting said tube in a sealed manner in a housing of the separation device wherein said housing is realized in the form of a through hole, one end of said tube being closed by said removable barrier.

10) The process according to any one of claims 5, 7 and 9, comprising the provision of the separation device including at least a first component and a second component, and the process also comprising:

positioning said first component to provide a frangible seal between the first chamber and the second chamber;

positioning the second component in a position, relative to the first component, wherein the second component can be operated by the user to break said frangible seal and open said connecting path from the first chamber to the second chamber via said housing.

11) The process according to any of the previous claims, including the step of positioning the separation device such that the second chamber is above the first chamber.

12) The process according to any of the previous claims, including the step of selecting a container made of a material suitable for microwave heating.

13) The process according to any of the previous claims, including at least one of: a step of purging air from the second chamber and introducing an inert gas in the second chamber; a step of introducing a selected amount of a propellant gas in the first chamber.

14) The process according to any of the previous claims, including: applying a piece containing a ferromagnetic material to the outside bottom of the container.

15) The process according to any of the previous claims, including the step of providing one or more structural parts of the container with safety means adapted to avoid overpressure of the container.

16) The process according to any of the previous claims, including the step of providing at least one surface of the container with a thermo-insulating layer or with a thermo-insulating element.

17) The process according to claim 10, wherein the second component is provided in the form of a rod which is inserted into said connecting path.

18) The process according to claim 13, wherein said inert gas is nitrogen.

19) The process according to claim 13, wherein said propellant gas in the first chamber is nitrogen.

20) The process according to claim 14, wherein said piece containing a ferromagnetic material is selected in the form of an adhesive label.

21) The process according to claim 15, wherein said one or more structural parts of the container are provided with a weakened portion adapted to break in case of overpressure inside the container.