

CLAIMS

- 1) A process for making a portable beverage product, wherein the product is suitable for preparation of a beverage by infusion or solution of a first liquid ingredient with at least one second ingredient, the process comprising:
- 5 a) providing a portable container with an aperture;
- b) providing a separation device previously equipped with sealing means comprising at least one removable barrier;
- c) inserting an amount of the first ingredient into said container;
- 10 d) inserting said separation device into the container in a position, relative to the container, such that:
- the separation device and its sealing means delimitate, in a sealed manner, a first chamber of the container and a second chamber of the container, wherein the first chamber contains said amount of first ingredient and the separation device provides a connecting path for the first ingredient to flow from the first chamber into the second chamber,
- 15 said connecting path being closed by the removable barrier;
- e) inserting at least one second ingredient into said second chamber;
- f) closing the aperture of the container with a cover after the insertion of the separation device and of the second ingredient, to form said portable beverage product;
- 20 g) wherein the separation device is also positioned in such a way that the removable barrier can be removed in response to a user action on the portable beverage product, thus opening the above mentioned connecting path.
- 25 2) A process according to claim 1, including the steps of: the first liquid ingredient is introduced in the container; the separation device is placed

above the liquid level so that the second chamber is above the separation device; said separation device is placed at a suitable height relative to the walls of the container, said height being selected so that the second chamber has a volume equal to or greater than the volume of first ingredient contained in the first chamber.

- 5 3) A process according to claim 1 or 2, including the step of positioning a hollow filtering device inside the second chamber, wherein said filtering device contains, or is suitable to contain, said at least one second ingredient.
- 10 4) A process according to claim 3, including the step of loading the filtering device, before insertion into the container, with said at least one second ingredient, and loading the at least one second ingredient in a solid form which is soluble in the first ingredient or adapted to deliver an infusion process upon contact with the first ingredient.
- 15 5) A process according to claim 3, including the step of loading the filtering device, after insertion into the container, with said at least one second ingredient, and loading the at least one second ingredient in a solid form which is soluble in the first ingredient or adapted to deliver an infusion process upon contact with the first ingredient.
- 20 6) A process according to any of the previous claims, including laying said at least one second ingredient directly onto part of an upper surface of the separation device.
- 25 7) A process according to claim 6, including the step of wrapping said at least one second ingredient totally or partially by a filtering structure independent from the separation device.
- 8) A process according to any of the previous claims, including the step of selecting the at least one second ingredient in the form of a powder.
- 9) A process according to any of the previous claims, wherein step b) includes

providing the separation device with any of: a baffle, a septum, a frangible barrier.

- 10) A process according to any of the previous claims, comprising the step of:
providing the separation device with a frangible barrier and with perforation
5 means adapted to perforate said frangible barrier in order to open said
connecting path.
- 11) A 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
10 contain, said at least one first ingredient.
- 12) A 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
15 device.
- 13) A 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
20 device and closing said connecting path by said removable barrier.
- 14) A 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.
- 25 15) A process according to claim 14 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.

16) A process according to any of the previous claims, comprising the provision of a separation device including at least a first component and a second component, and the process also comprising:

5 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
10 the first chamber to the second chamber via said housing.

17) A process according to claim 16, including the step of: providing the second component in the form of a rod which is inserted into said connecting path.

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

19) A process according to any of the previous claims, wherein the step a) of providing the container includes a step of sterilization of the container, before the insertion of the separation device.

20) A process according to any of the previous claims, wherein the step a)
20 includes providing a can as the portable container.

21) A process according to claim 20, including the step of selecting a metal or aluminium can.

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

23) A process according to any of the previous claims, wherein the step c)
25 includes inserting water into the container.

- 24) A process according to any of the previous claims, including the step of purging air from the second chamber and introducing an inert gas in the second chamber, preferably nitrogen.
- 5 25) A process according to any of the previous claims, including the step of introducing a selected amount of a propeller gas in the first chamber.
- 26) A process according to claim 25, including the step of selecting nitrogen as propeller gas.
- 10 27) A process according to any of the previous claims, including: applying a piece containing a ferromagnetic material to the outside bottom of the container.
- 28) A process according to claim 27, including the step of selecting said piece containing ferromagnetic material in the form of an adhesive label.
- 15 29) A 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.
- 30) A process according to claim 29, including the step of: providing said one or more structural parts of the container with a weakened portion adapted to break in case of overpressure inside the container.
- 20 31) A 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.
- 32) A process according to any of the previous claims, including the step of selecting pure coffee or a coffee-containing powder as the second ingredient.
- 25 33) A production line for the production of beverage products according to the process of any of the previous claims, wherein the production line comprises at least:

- a filling head suitable for inserting an amount of said first liquid ingredient into a container,
- insertion means for inserting a separation device into the container, wherein the insertion means are controlled to place the separation device in a target position that defines a first chamber and a second chamber of the container, separated by a removable barrier,
- insertion means for inserting an amount of said second ingredient,
- closing means adapted for closing the container in a sealed manner, after the insertion of the separation device, to form a portable beverage product.

34) A production line according to claim 33, wherein the production line comprises insertion means for inserting at least one movable component adapted to perforate the removable barrier under action of the user.