Summary of the invention

The present invention solves the above mentioned technical problem with an adapting device for adapting at least one so-called “non-native” capsule or pod into the capsule holder of a food preparation machine being adapted to receive a capsule or pod holder which is configured to receive and hold at least one capsule or pod of a first kind, and comprising a fluid injection element which can be moved relative to the capsule or pod holder, for circulating a fluid under pressure through the capsule or pod internal chamber to a discharge opening of said capsule or pod, wherein said non-native capsule or pod is smaller than so-called “native” capsules or pods originally designed for insertion into said capsule holder, said adapting device comprising~~a food preparation machine for preparing a food product out of a capsule or pod, said machine being adapted to receive a capsule or pod holder which is configured to receive and hold at least one capsule or pod of a first kind, and comprising a fluid injection element which can be moved relative to the capsule or pod holder, for circulating a fluid through the capsule or pod internal chamber to a discharge opening of said capsule or pod, characterized in that said machine further comprises at least one adapting device for adapting at least one capsule or pod of a second kind into the capsule holder, said capsules or pods of the second kind being smaller than said capsules or pods of the first kind, said device comprising~~:

- a holding portion for holding at least a portion of said capsule or pod, wherein the holding portion contacts and holds the entire surface of the capsule or pod side walls – and also preferably bottom walls –, at least at the time a fluid circulates through said capsule or pod under pressure, and
- sealing means for circumferentially adapting to the capsule holder and/or to the fluid injection element of the machine, and/or to the capsule outside surface, in a leak-tight manner so that the fluid flow is directed solely from the fluid injection element through the capsule or pod internal chamber, to a discharge opening of said capsule or pod.

The present invention allows a consumer to use a different kind of capsules or pods, than the kind of capsules or pods natively (i.e. initially) developed for use with the beverage preparation machine and its capsule holder, whatever this machine and holder, when these different capsules or pods are smaller than the capsules or pods originally designed to function with the machine and its capsule holder.

The holding portion of the adapting device contacts and holds the entire surface of the capsule or pod body, at least at the time the fluid circulates through said capsule or pod. In such a way, the invention solves the problem of high pressure generated within the capsule or pod: due to the high pressure inside the capsule or pod during the food preparation, the capsule walls must be held against the internal walls of the capsule holder. In case a user uses a different type of capsule or pod, i.e. a capsule or pod having a different size and/or shape such that the said capsule or pod is smaller in volume than the capsule or pod natively developed for use with the capsule or pod of the machine, then the walls of said “non-native” capsule or pod will not be held against the capsule holder’s internal walls as it should normally be. As a result, there is a risk of explosion or damage to the capsule or pod, as a result of the pressure build-up during preparation. As it can be now understood, the present invention solves this issue by proposing a food preparation machine comprising an adapting device which can be used by the consumer to prevent damage to a different kind of

Claims

~~1. A food preparation machine for preparing a food product, said machine being adapted to receive a capsule or pod holder which is itself configured to receive and hold at least one capsule or pod of a first kind, and comprising a fluid injection element (11) which can be moved relative to the capsule or pod holder, for circulating a fluid through the capsule or pod internal chamber to a discharge opening of said capsule or pod, characterized in that said machine further comprises at least one adapting device (6) for adapting at least one capsule or pod (100) of a second kind into the capsule holder (7), said capsules or pods of the second kind being smaller than said capsules or pods of the first kind, said device comprising:~~

- ~~a holding portion for holding at least a portion of said capsule or pod of the second kind, wherein the holding portion contacts and holds the entire surface of the capsule or pod side walls, at least at the time the fluid circulates through said capsule or pod, and~~
- ~~sealing means (16, 17, 32) for circumferentially adapting to the capsule holder and/or to the fluid injection element, and/or to the capsule outside surface, in a leak-tight manner so that the fluid flow is directed solely from the fluid injection element (11) through the capsule or pod internal chamber, to the discharge opening of said capsule or pod.~~

~~2. A food preparation machine according to claim 1, wherein the holding portion contacts and holds the entire surface of the capsule or pod side and bottom walls, at least at the time the fluid circulates through said capsule or pod.~~

~~3.~~1. An adapting device (6) for adapting at least one capsule or pod (100) into the capsule holder (7) of a food preparation machine according to claims 1 or 2, for preparing a food product, said machine being adapted to receive a capsule or pod holder which is itself configured to receive and hold at least one capsule or pod of a first kind, and comprising a fluid injection element (11) which can be moved relative to the capsule or pod holder, for circulating a fluid under pressure through the capsule or pod internal chamber to a discharge opening of said capsule or pod, wherein said capsule or pod (100) is smaller than capsules

or pods originally designed for insertion into said capsule holder, said adapting device ~~comprising~~ characterized in that:

- a holding portion for holding at least a portion of said capsule or pod, wherein the holding portion contacts and holds the entire surface of

the capsule or pod side walls, at least at the time a fluid circulates through said capsule or pod under pressure, and

- sealing means (16, 17, 32) for circumferentially adapting to the capsule holder and/or to the fluid injection element of the machine, and/or to the capsule outside surface, in a leak-tight manner so that the fluid flow is directed solely from the fluid injection element (11) through the capsule or pod internal chamber, to a discharge opening of said capsule or pod.

4.2. An adapting device (6) according to claim ~~3~~1, wherein the holding portion contacts and holds the entire surface of the capsule or pod side and bottom walls, at least at the time the fluid circulates through said capsule or pod.

5.3. An adapting device (6) according to claims ~~3~~1 or ~~4~~2, which comprises a ring-like device body, whose external shape and size are adapted to fit at least partially the internal shape and size of the capsule holder (7), and whose internal shape and size are adapted to fit at least partially the external surface of at least one capsule (1) or pod (20).

6.4. An adapting device (6) according to claims ~~3~~1 or ~~4~~2, which comprises a generally cup-like device body, whose external shape and size are adapted to fit at least partially the internal shape and size of the capsule holder (7), and whose internal shape and size are adapted to fit at least partially the external surface of at least one capsule (1) or pod (20), said cup-like body comprising at least one outlet opening (14, 24) in its lower portion for circulating the food product produced from the circulation of the fluid through said capsule or pod.

7.5. An adapting device (6) according to claims ~~5~~3 or ~~6~~4, which further comprises a closing lid (9) for closing the cup-like, or ring-like, device body, said lid (9) comprising an opening (10) disposed in correspondence to the fluid injection element (11), so as to let said fluid through said lid into the capsule (1) or pod (20).

8.6. An adapting device (6) according to claim 75, wherein the lid (9) comprises a duct system (12) comprising at least one duct in fluid communication with the lid opening (10), said at least one duct being in fluid

communication with at least one outlet opening (13) disposed in the vicinity of, or in contact with, the capsule (1) or pod (20) body.

~~9.~~7. An adapting device (6) according to claim ~~8~~6, wherein the closing lid (9) further comprises sealing means (16) to ensure that the contact surface between said device body (8) and said lid (9) is leak-tight.

~~10.~~8. An adapting device (6) according to claim ~~9~~7, wherein said sealing means (16) is a circular O-ring rubber seal.

~~11.~~9. An adapting device (6) according to any of the preceding claims ~~3~~1 to ~~10~~8, which internal shape is adapted to enclose a capsule having substantially rigid walls with a generally cylindrical, discoid, or frustoconical shape.

~~12.~~10. An adapting device (6) according to any of the preceding claims ~~3~~1 to ~~11~~9, whose internal shape is adapted to enclose a soft pod having substantially flexible walls with a generally discoid shape.

~~13.~~11. An adapting device (6) according to claim ~~3~~1, which comprises two cup-like complementary shells adapted to engage in a leak-tight manner so as to define together an internal chamber for enclosing at least one capsule or pod, the upper shell being connected to the fluid injection element in a fluid-tight manner, and the lower shell comprising an outlet opening for circulating the food product produced from the circulation of the fluid through said capsule or pod.

~~14.~~12. An adapting device (6) according to any of the preceding claims ~~3~~1 to ~~13~~11, which comprises a lower portion in the shape of a hopper (14), said hopper having a shape and size such that the hopper lower outlet opening fits within the capsule holder lower dispensing opening (15), so that the food product flowing from the capsule or pod is directed through the hopper, out of the said hopper, without contacting said capsule holder.

~~15.~~13. An adapting device (6) according to any of the preceding claims ~~3~~1 to ~~14~~12, which further comprises opening means (26, 31) disposed on at least a portion of its inner surface, said opening means being suitable for opening at least a

portion of the capsule or pod so as to create at least one fluid inlet and/or product dispensing outlet opening through said capsule or pod.

~~16.~~14. An adapting device (6) according to any of the preceding claims ~~3~~1 to ~~15~~13, which is single-use and disposable.