CLAIMS

1. Container particularly of a bottle type for packaging under pressure of a filling product continuum, including (semi-)liquid fluids, resp. discontinuous filling product such as foam, pastes, cream, or powders, comprising a neck section (23) with a pouring opening (24) on its top side, an adjacent sheathing section (22) forming the a body of the container having a cut bottom end defining an aperture, and a removed bottom section, (21) of thewherein said container, which is essentially composed of a plastic polymer which and is closable on said top section (21) with a closure (5), characterised in thatwherein said sheathing section has a cut bottom end, said aperture the bottom section (21) disposed opposite said top section is closed by a separately added insert bottom (21) base piece of a size substantially the same as said aperture, wherein said separately added insert bottom base piece is attached to said body by means of a joint, thereby covering entirely said cut bottom end, said joint extending virtually peripherally on said sheathing section at its free bottom endwhich is attached to said body (22) by means of a joint (13), and in that said body (22) is provided with a set of reinforcements (30).

2. Packaging eContainer according to claim 1, characterised in thatwherein the containerit further comprises an inner container (2), which is completely enclosed in said container (1) and is subjected to its own an internal pressure p_2, which is different from a lower, counter-pressure p_1 to which said container (1) is subjected, wherein $p_2 > p_1$, and wherein at least p_2 > atmospheric pressure, yielding a residual pressure Δp on the inner container, the residual pressure being (2) which is the a positive difference between the p_2 and p_1. higher pressure of the inner container (2) and a lower counter-pressure of said container (1),

3. Container for packaging under pressure of continuum filling productsaccording to claim 2, including fluids, resp. discontinuous filling products such as foam, pastes, cream, or powders, comprising a neck part (23) with a pouring opening (24) at its top, a sleeve part (22), which is adjacent thereto and which forms the body of said container (1), and a base part (21), which is essentially composed of a plastic polymer, characterized in that anwherein the inner container (2) under internal pressure p_2 is provided therein (1), which is completely enclosed in said container (1) under a pressure p_1, and which is attached to the bottom base piece(21) thereof (1), thereby forming a double container system (12) wherein the inner container (2) is supported additionally by said container (1).

4. Container according to claim 3, characterized in that the inner container (2) is subject to an own pressure p_2, which is different from that p_1 to which said container (1) is subject, wherein the inner container (2) is under a higher pressure than said container (1), wherein at least said pressure p_2 is higher than atmospheric pressure, and the residual pressure Δp on the inner container (2) is equal to the positive difference between the higher pressure of the inner container (2) and the lower counter-pressure of said container (1).

54. Container according to one of the claims 2 to 4or 3, characterized in thatwherein the inner container (2) has a smaller wall thickness than said container (1), yet resisting to the higher pressure

p_2 characteristic for the inner container ~~(2)~~, wherein said double container system ~~(12)~~ thus acts as a buffer with an internally compensated pressure.

~~6~~5. Container according to any one of ~~the~~ claims ~~3~~2 to ~~5~~4, ~~characterized in that said double container system (12)~~the container and inner container constitutes a pressure regulator, in particular of the PCD type.

~~7~~6. ~~Pressure c~~Container according to any one of the preceding claims, characterized by a packaging under pressure which is able to withstand pressures of up to about 20 bar, in particular up to 100 bar, and more.

~~8~~7. Container according to one of the preceding claims, ~~characterized in that~~wherein ~~it~~ the container is provided with a set of physical or mechanical reinforcements. ~~(30; 31, 32; 8'; 9, 9'; 10'),~~

~~9~~8. Container according to the preceding claim, ~~characterized in that~~wherein said reinforcement is formed by an inner container ~~(2)~~ which is attached to the bottom ~~(21)~~ with a connection, wherein said container ~~(1)~~ provides additional support to the inner container ~~(2)~~ that is under said internal pressure p_2 condition.

~~10~~9. Container according to one of both preceding claims, ~~characterized in that~~wherein a set of reinforcement elements ~~(31, resp. 32)~~ is provided at a mutual distance ~~(d_i)~~ on the inner and/or outer side of the pressure container ~~(1) or (1')~~.

~~11~~10. Container according to one of the claims ~~8~~7 to ~~10~~9, ~~characterized in that~~wherein the said reinforcement elements ~~(31, resp. 32)~~ are provided peripherally, in particular with a substantially constant cross-section, more in particular with a rotationally symmetrical profile.

~~12~~11. Container according to the preceding claim, ~~characterized in that~~wherein said reinforcement elements ~~(31, resp. 32)~~ have a rounded profile, in particular with a substantially semi-circular cross section with externally oriented top.

~~13~~12. Container according to one of the claims ~~10~~9 to ~~12~~11, ~~characterized in that~~wherein said distance ~~(d_i)~~ between mutually adjacent reinforcement elements ~~(31, 32)~~ decreases from the longitudinal body ends to the longitudinal mid-section thereof ~~(22)~~, in particular with a uniform decrease with regard to said middle section.

~~14~~13. Container according to the preceding claim, ~~characterized in that~~wherein an odd number of reinforcement elements, notably rings ~~(31, 32)~~ is provided, including the middle one whereof is disposed at about said middle section.

~~15~~14. Container according to one of the claims ~~10~~9 to ~~14~~13, ~~characterized in that~~wherein said reinforcement elements ~~(32)~~ consist of a set of thickenings resp. reinforcement ribs ~~(9)~~, in particular integrally in one piece ~~(9')~~ directly into the material of the pressure container ~~(1)~~.

~~16~~15. Container according to one of the claims ~~10~~9 to ~~15~~14, ~~characterized in that~~wherein said reinforcement elements ~~(31)~~ consist of a set of inner support rings ~~(31) and (8')~~, and/or resp, a set of outer support rings ~~(32) and (10')~~, which are connected with the pressure container ~~(1)~~.

~~17~~16. Container according to the preceding claim, ~~characterized in that~~wherein the reinforcements respectively rings are connected with the container ~~(1)~~ by means of glue or welding material.

~~18~~17. Container according to claim ~~16~~15, ~~characterized in that~~wherein the reinforcements respectively rings are solid with the container ~~(1)~~ without material link, particularly mechanically by clamp or shrinkage thereof, or the like.

~~19~~18. Container according to any one of the preceding claims, ~~characterized in that~~wherein said reinforcement elements ~~(32)~~ consist of a shrinked foil around the container ~~(1)~~, a mesh and/or a grid and/or a shrink film, wherein the grid is incorporated yet.

~~20~~19. Container according to any one of ~~both~~the preceding claims, ~~characterized in that~~wherein said reinforcement elements consist in windings around the container wall ~~(22)~~, in particular consisting of glass fibers, composite, or glass wire.

~~21~~20. Container according to one of the claims ~~10~~ 9 to ~~20~~19, ~~characterized in that~~wherein said inner support rings ~~(31)~~ are composed of plastics and/or in that said outer support rings ~~(32)~~ are composed of plastic and/or metal.

~~22~~21. Container according to one of the claims ~~10~~ 9 to ~~21~~ 20, ~~characterized in that~~wherein ~~it~~ the container includes chemical reinforcements, in particular in the container wall ~~(22)~~ thereof ~~(1)~~.

~~23~~22. Container according to any one of the preceding claims, in particular the preceding one, ~~characterized in that~~wherein ~~it~~ the container is transparent, in particular on the container body wall, more particularly at least over a part thereof.

~~24~~23. Container according to one of the preceding claims, ~~characterized in that~~wherein said plastic material from which it is made consists of a biaxially stretchable material, in particular PET (polyethylene terephthalate).

~~25~~24. Container according to one of the preceding claims, ~~characterized in that~~wherein it consists of another plastic material, notably polyolefins, in particular polypropylene or polyethylene, polystyrene, polyesters, in particular PETG or PBT, polycarbonate, polyamides, or copolymers thereof or blends thereof, more in particular with another polyester resistant to higher heat, even more in particular according to an extremely low level thereof, still more in particular wherein said polyester is formed by a polyethylene naphthalate, a polytrimethyiene naphthalate; or by the plastic material known as PETN type-5 400 105.

~~26~~25. Container according to one of the preceding claims, ~~characterized in that~~wherein said plastic consists of a so-called "Polymer bio-aggregate", In particular with the incorporation therein of a barrier, more particularly a chemical, resp. gas or even light barrier.

~~27~~26. Container according to one of the preceding claims, in particular the preceding one, ~~characterized in that~~ wherein said container is coated in and/or out, in particular with acrylates.

~~28~~27. Container according to one of the claims 1 to ~~27~~26, ~~characterized in that it (1)~~wherein the container is closed at said bottom side by a full cover ~~(28)~~ that is fixedly attached to the container by means of a fixed connection.

~~29~~28. Container according to the preceding claim, ~~characterized in that~~wherein said compound is formed by a welded joint ~~(13)~~, in particular by a laser, induction, respectively ultrasonic compound, or a glue joint.

3029. Container according to one of claims 1 to 54, characterized in thatwherein it (1)the container is provided with a bottom (21) with a semi-spherical profile in order to allow in the container (1) even more pressure, wherein a bottom holder (25) is provided.

3130. Pressurized cContainer according to any one of the preceding claims, characterized in that wherein a valve is included in the added base (21').

3231. Pressure cContainer according to any one of the preceding claims, characterized in thatwherein it (1)the pressure container is formed by a multi-chamber system consisting of at least one chamber (51), in particular two (52), wherein the pressure container (1) is closed at the bottom, and a chamber partition (59) is provided between the various chambers in the container.

3332. Pressure cContainer according to the preceding claim, characterized in thatwherein the chamber partition (59) is provided with at least one pressure control valve (50), resp. gassing valve as closure.

3433. Pressure cContainer according to the preceding claim, characterized in thatwherein said closure is adjustable indirectly from outside in an open or closed position by means of a pressure control valve (50), so that the contents of the chamber (51) is able to come into contact with the chamber (52), whether or not the chambers are under pressure.

3534. Pressure cContainer according to the preceding claim, characterized in thatwherein both bottom and top sides (21, resp. 23) are closed by means of a single closing piece, in particular a shut-off valve (58).

3635. Pressure cContainer according to the preceding claim, characterized in thatwherein said shut-off valve (58) is made from a dosage valve (57), or a screw cap resp.

3736. Pressure Ccontainer according to any one of the preceding claims, characterized in thatwherein it the container comprises physical reinforcements, particularly foils, reinforcement rings and/or ribs, internal and/or external slots; and/or chemical reinforcements notably by an increased crystallinity, glass transition temperature, polymer blends, including the use of PEN and increasing crystallinity; and/or chemical resistance, particularly by means of blends, coatings, including internal coating; and/or particular forms, particularly a pressurised container of the construction type 'bottle in bottle' as reinforcement, respectively a "bag in bottle ', a one/two-chamber system, or also a " spherical bottom with base-cup'.

3837. Method for manufacturing a container of the pressure container packaging type according to any one of the preceding claims, characterised in that wherein a container body profile (90) with a longitudinal axis (l) is first formed with subsequent cutting hereof (90) to form a tubular element (91) to the required longitudinal dimension (L), characterized in thatwherein pressure means are arranged herein therein to pressurise the container packaging (1) with the a filled product, i.e. to pressure particularly equal to or greater than atmospheric pressureranging from atmosphere to approx. 100 bar, and more, by gassing, particularly wherein the latter (1) is formed by means of the container body (91) formed by the extrusion process, more particularly wherein the container head (11) or body top section (22') is closed with a cover (5), even more particularly wherein this cover is a dosing valve (17), a screw cap or another closure.

~~39~~38. Method, according to the preceding claim, for manufacturing a pressure container particularly as defined in one of the claims 1 to ~~37~~36, wherein it is formed by means of an extruded tube ~~(3)~~ which is cut through at least once, in particular twice, wherein both open ends of the body ~~(22')~~ thus formed are sealed by a single piece, valve or cover ~~(5)~~.

~~40~~39. Method according to one of both preceding claims, ~~characterized in that~~wherein said top section is sealed with a container head ~~(11)~~ which is fixed by means of a connection ~~(12)~~ to the pressurized container ~~(1)~~.

~~41~~40. Method according to any one of the claims ~~38~~ 37 to ~~40~~39, ~~characterized in that~~wherein said connections ~~(12)~~ are performed by means of gluing, crimping or welding, in particular laser welding, more particularly by laser, induction, or ultrasonic welding.

~~42~~41. Method according to claim ~~46~~37, ~~characterized in that~~ wherein ~~the fixations of~~ the rings are fixed by glu~~inged~~ or welded~~ing together~~.

~~43~~42. Method according to any one of the claims ~~38~~ 37 to ~~42~~41, ~~characterized in that~~ wherein said outer support rings ~~(10)~~ are incorporated directly when blowing the container.

~~44~~43. Method according to any one of the claims ~~38~~ 37 to ~~43~~42, ~~characterized in that~~wherein a flexible inner container ~~(16)~~ or bag is inserted into the container for preventing the filling product to come in contact both with the outer wall, and with the pressure gas consisting of air or other gases.

~~45~~44. Method according to the preceding claim, ~~characterized in that~~wherein a flexible inner container ~~(16)~~ is introduced by blowing into the container ~~(1)~~ which acts as main container.

~~46~~45. Method according to any one of claims ~~38~~ 37 to ~~45~~44, for manufacturing a ~~pressurized~~ container ~~packaging~~ according to any one of the claims 1 to ~~37~~36, ~~characterized in that~~wherein the production process of the pressurized container is performed as follows:

in a first step (A), a preform is extruded as a semi-finished product by injection molding, wherein plastic granules are dried, melted in an extruder and subsequently driven in an injection mold;

in a subsequent step (B), said semi-finished product is blown in a blow mold to a bottle shape, in particular tubular ~~(3)~~, as a further intermediate product ~~(3)~~;

in a further next step (C) between the bottom of said additional intermediate product ~~(3)~~ is cut at a certain length, whereby a separately added injection molding base ~~(21)~~ is then incorporated in said additional intermediate product, ~~(3)~~,

~~47~~46. Method according to the preceding claim, ~~characterized in that~~wherein the pressurization of filling product in said container ~~(1)~~ is done via the lockable bottom valve via an opening ~~(43)~~ that is self- closable by the seal ~~(44)~~, wherein the seal ~~(44)~~ consists of a tubular element that is made out of a flexible plastic,

~~48~~47. Method according to the preceding claim, ~~characterized in that~~wherein the pressurizing therein ~~(1)~~ is done via the sealable top valve ~~(47)~~, in particular through a self-locking element, in particular a so-called "umbrella plug" ~~(46)~~, or via a two-step element, in particular a so-called two-step "Nicholson plug" ~~(47)~~.

~~49~~48. Use of a container according to any one of the claims 1 to ~~37~~ 36 for oval containers or bottles such as used for sauces and ketchup with a so-called hot fill process.