container releases from the obtained outer layer (22) upon introduction of a gas at a point of interface between said two layers; **characterized in that** both inner and outer layers consist of the same material, and wherein at least one of said inner and outer layers includes at least one additive allowing both inner and outer layers to reach their respective blow-moulding temperatures substantially simultaneously upon heating them together in a single infrared oven.

2. The preform according to claim 1, wherein the at least one additive is selected from the group of energy absorbing additives and colorants.

3. The preform according to claim 2, wherein the energy absorbing additive is a member being selected from the group consisting of carbon black, graphite, diamond dust, diazonium salts, sulphonium salts, sulfoxonium salts, and iodonium salts.

~~4. The preform according to any of the preceding claims, wherein the inner and outer layers consist of a different materials each selected from PET, PEN, PTT, PA, PP, PE, HDPE, EVOH, PGAc, PLA, and copolymers or blends thereof.~~

~~5.~~4. The preform according to any of claims 1 to 3, wherein the inner and outer layers consist of ~~a~~ the same material, ~~preferably~~ selected from PET, PEN, PTT, PA, PP, PE, HDPE, EVOH, PGAc, PLA, and copolymers or blends thereof.

~~6.~~5. The preform according to any of the preceding claims, wherein the at least one point of interface is a vent (3) in the shape of a wedge with the broad side at the level of the opening thereof and getting thinner as it penetrates deeper into the vessel, until the inner and outer layers meet to form an interface.

~~7.~~6. The preform according to any of the preceding claims, wherein more than one vent (3) is distributed around the lip of the preform's mouth (5).

~~8.~~7. The preform according to any of the preceding claims, wherein the inner and outer layers of the preform are connected by an interface (14) throughout substantially the whole inner surface of the outer layer.

~~9.~~8. The preform according to any of the preceding claims, wherein the inner and outer layers of the preform are separated over a substantial area of the preform's body by a gap containing air and which is in fluid communication with at least one interface vent (3).

~~10.~~9. The preform according to any of the preceding claims, consisting of an assembly of two separate inner and outer preforms fitted into one another.

~~11.~~10. The preform according to any of the preceding claims 1 to ~~9~~8, including an integral preform obtained by injection moulding one layer on top of the other.

~~12.~~11. A process for producing a bag-in-container comprising the following steps:

- providing a polymer preform having an inner layer (11) and an outer layer (12), wherein said preform forms a two layer container upon blow-moulding, and wherein the obtained inner layer (21) of said container releases from the obtained outer layer (22) upon introduction of a gas at a point of interface between said two layers; and

- at least one of said inner and outer layers includes at least one additive;

- heating said preform to blow-moulding temperature in a single oven; and

- blow-moulding the thus heated preform to form a bag-in-container;

characterized in that both inner and outer layers include the same material selected from PET, PEN, PTT, PA, PP, PE, HDPE, EVOH, PGAc, PLA, and copolymers or blends thereof, and wherein the type and amount of additives in at least one of the inner and outer layers of said preform are such that said two layers reach their respective blow-moulding temperatures substantially simultaneously in said single infrared oven.

~~13.~~12. The process according to claim ~~12~~11, wherein the at least one additive is selected from the group of energy absorbing additives and colorants.

~~14.~~13. The process according to claim ~~13~~12, wherein the energy absorbing additive is a member being selected from the group consisting of carbon

black, graphite, diamond dust, diazonium salts, sulphonium salts, sulfoxonium salts, and iodonium salts.

~~15. The process according to any of claims 12 to 14, wherein the inner and outer layers include the same or different materials each selected from PET, PEN, PTT, PA, PP, PE, HDPE, EVOH, PGAc, PLA, and copolymers or blends thereof.~~

~~16.~~14. The process according to any of claims ~~12~~11 to ~~15~~13, wherein the oven comprises infrared lamps.

~~17.~~15. A bag-in-container made by the process comprising:

- providing a polymer preform having an inner layer (11) and an outer layer (12), wherein said preform forms a two layer container upon blow-moulding, and wherein the obtained inner layer (21) of said container releases from the obtained outer layer (22) upon introduction of a gas at a point of interface between said two layers; and

- at least one of said inner and outer layers includes at least one additive;

- heating said preform to blow-moulding temperature in a single oven; and

- blow-moulding the thus heated preform to form a bag-in-container;

characterized in that both inner and outer layers include the same material selected from PET, PEN, PTT, PA, PP, PE, HDPE, EVOH, PGAc, PLA, and copolymers or blends thereof, and wherein the type and amount of additives in at least one of the inner and outer layers of said preform are such that said two layers reach their respective blow-moulding temperatures substantially simultaneously in said single infrared oven.

~~18.~~16. Use of energy absorbing additives or colorants for the substantially simultaneous heating to the respective blow-moulding temperatures of the inner (11) and outer (12) layers of a preform for blow-moulding a bag- in-container, wherein both inner and outer layers consist of the same material.