CLAIMS

What is claimed is:

~~1. A bottle comprising:~~

~~a) a poly(ethylene furandicarboxylate)/poly(ethylene terephthalate) (PEF/PET) blend, wherein the amount of PEF is in a range from 0.1% to 40% by weight based on the total weight of the blend, wherein the blend bottle has an improved shelf life as compared to the shelf life of a standard PET bottle.~~

~~2. The bottle of claim 1, wherein a section (top, panel and/or base) of the blend bottle has less than 25% variation in target weight compared to corresponding sections of a standard PET bottle (page 13, line 6 of published PCT application).~~

~~3. The bottle of claim 1, wherein the poly(ethylene furandicarboxylate) is an unmodified poly(ethylene furandicarboxylate) derived from ethylene glycol and furan dicarboxylate or a derivative thereof (page 8, lines 30-33 of published PCT application).~~

~~4. The bottle of claim 1, wherein the PEF/PET blend bottle has an areal stretch ratio in the range of 2–30.~~

~~5. The bottle of claim 1, wherein the blend bottle is a size selected from the groups consisting of an 8 oz bottle, 10 oz bottle, a 12 oz bottle, 16 oz bottle, a 500 mL bottle, a 750 mL bottle, a 1 L bottle and a 2 L bottle (page 13, lines 13-20 of published PCT application).~~

~~6. The bottle of claim 1, wherein the PEF/PET blend comprises some amount of recycled PET (page 10, line 8 of published PCT application).~~

~~7. The bottle of claim 1, wherein the bottle is a monolayer bottle or multi-layer bottle (page 25, lines 8 & 9 of the published PCT application).~~

1. A method of making a bottle comprising the steps of:
   a) making a poly(ethylene furandicarboxylate)/poly(ethylene terephthalate) (PEF/PET) blend, wherein the amount of PEF ranges from 0.1% to 40% by weight based on the total weight of the blend;
   b) injection molding the PEF/PET blend of step a) to form a blend preform under substantially similar processing conditions as used to make a standard PET preform;
   c) stretch blow molding the blend preform of step b) in a standard PET mold to form a blend bottle under substantially similar processing conditions as used to make a standard PET bottle from the standard PET preform,

   wherein the blend bottle made in step c) has improved shelf life as compared to the shelf life of a standard PET bottle.

2. The method of claim 1, wherein the amount of PEF ranges from 10% to 40% by weight based on the total weight of the blend.

3. The method of claim 1 or claim 2, wherein:

   said substantially similar processing conditions in step b) involve injection molding through a barrel having one or more temperature zones at a temperature in the range of 230° to 325°C; and

   said substantially similar processing conditions in step c) involve heating the preform to a temperature in the range of 75-125°C prior to stretch blow molding.

4. The method of claim 1, wherein each section (top, panel and base) of the blend bottle has less than 25% variation in target weight compared to corresponding sections of a standard PET bottle.

5. The method of claim 1, wherein poly(ethylene furandicarboxylate) is an unmodified poly(ethylene furandicarboxylate) derived from ethylene glycol and furan dicarboxylate or a derivative thereof.

6. The method of claim 1 wherein the step b) of injection molding the PEF/PET blend of step a) to form a blend preform comprises processing the PEF/PET blend through a barrel having one or more temperature zones at a temperature in the range of 260 °C to 300 °C.

7. The method of claim 1 wherein the PEF/PET blend bottle has an areal stretch ratio in the range of 2–30.

8. The method of claim 1 wherein the step c) of stretch blow molding the blend preform of step b) in a standard PET mold comprises using a standard PET mold for a bottle having a volume in the range of 59 milliliter to 2 liter.

9. The method of claim 5, wherein the blend bottle made is selected from the group consisting of an 8 oz (about 236.6 ml) bottle, 10 oz (about 295.7 ml) bottle, a 12 oz (about 354.9 ml) bottle, 16 oz (about 473.2 ml) bottle, a 500 mL bottle, a 750 mL bottle, a 1 L bottle and a 2 L bottle.

10. The method of claim 1, wherein steps b) and c) are performed in an integrated injection-stretch blow molding machine or separately in an injection molding machine and in a stretch-blow molding machine.

11. A method of claim 1, wherein the PEF/PET bottle has an oxygen permeation rate, a carbon dioxide permeation rate and/or a water vapor permeation rate that is less than or equal to an identically

shaped bottle consisting of polyethylene terephthalate polymer and weighing 1.05 to 1.54 times the weight of the PEF/PET bottle.

12. A method of improving shelf life of a carbonated beverage stored in a bottle comprising packaging the carbonated beverage in a bottle made from a PEF/PET blend, wherein the amount of PEF is in the range of 0.1–40% by weight, based on the total weight of the blend.