

TITLE: A BASE CONFIGURATION FOR BIAXIAL STRETCHED BLOW
MOLDED PET CONTAINER

This invention relates to a base configuration for biaxial stretched blow molded PET containers.

5 There are a variety of base configurations for biaxial stretched blow molded PET containers on the market. These include configurations, for example as described in U.S. Pat. Nos. 3,935,955 and 4,785,949. The former (see FIGS. 5 and 6) comprises a central concave dome portion and a plurality of triangular foot portions. However, stress cracks or even rupture is initiated in such base configuration when the applied pressure exceeds a certain critical level. The latter (see FIGS. 7 and 8) comprises a central convex portion and five radiating legs and is characterized in that the legs and feet are generally of the same outline of ribs and legs in a base configuration having six legs and feet thereby rendering the ribs a greater width. Although this base configuration may increase the cross sectional area of the rib, it is inevitable to use concave corner to connect the leg with

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the rib thus easily resulting in cracking in the concave corner portions.

Therefore, it is an object of the present invention to provide a base configuration for biaxial stretched
5 blow molded PET containers which may obviate and mitigate the above-mentioned drawbacks.

This invention relates to an improved base configuration for biaxial stretched blow molded PET containers, as set out in Claim 1.

10 It is the primary object of the present invention to provide a base configuration for biaxial stretched blow molded PET containers which is of high internal pressure resistance.

It is another object of the present invention to
15 provide a base configuration for biaxial stretched blow molded PET containers which is possessed of high drop impact resistance.

It is still another object of the present invention to provide a base configuration for biaxial stretched blow
20 molded PET containers which is of good standing

stability.

It is still another object of the present invention to provide a baes configuration for biaxial stretched blow molded PET containers which is of high blow moldability
5 and strength to resist cracking.

It is a further object of the present invention to provide a base configuration for biaxial stretched blow molded PET containers which has larger volume.

Other objects and merits and a fuller understanding
10 of the present invention will be obtained by those having ordinary skill in the art when the following detailed description is read in conjunction with the accompanying drawings.

FIG. 1 is a front view of the present invention;
15 FIG. 2 is a bottom view of the present invention;
FIG. 3 is a sectional view taken along line B-B of FIG. 1;
FIG. 4 is a sectional view taken along line C-C of FIG. 2;
20 FIG. 5 is a front view of a prior art PET container;

FIG. 6 is a bottom view of FIG. 5;

FIG. 7 is a front view of another prior art PET container; and

FIG. 8 is a bottom view of FIG. 7.

5 Before explaining the present invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other
10 embodiments and of being practiced or carried out in various ways. Also it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

 With reference to the drawings and in particular to
15 FIG. 1 thereof, the numeral 100 denotes a plastic container 100 which is characterized in the base configuration 200. The container 100 is made of PET, such as PET, which is biaxial stretched blow molded from a prefor

20 As shown in FIGS. 2, 3 and 4, the base configuration

200 is provided with a generally spherical surface on the center of which there is a concave spherical portion 1 designed to provide greater strength and improve the thermal stability so as to prevent the base 200 from stress cracking and increase the flexibility thereof.

Around the concave spherical portion 1 there is an annular groove 2 thereby forming a protruded circular member 11 on circumferential edge of the concave spherical portion 1 and therefore providing greater strength and preventing the base 200 from stress cracking.

Five legs 3 extend radially and outwardly from the annular groove 2, each of which comprises an inner side 31, a lower side 32, a left side 33, a right side 33, and an outer side 34. The inner side 31 is an inclined surface extending radially and outwardly with respect to the annular groove 2. The lower side 32 is a horizontal surface or an inclined surface extending radially and inwardly with respect to the annular groove 2. The left and right sides 33 are inclined surfaces. The outer surface 34 is a curved surface extending downwardly from

the body of the container 100. The left side and right side 33 of each leg 3 define an angle X (shown in Fig 3) of 40 degrees to 72 degrees. In this preferred embodiment, the two sides 33 subtend an angle of 72 degrees.

5 Between every two legs 3 there is a curved rib 4 which has sides that define an angle Y (shown in Fig 3) of 32 degrees - 0 degree. In the preferred embodiment (not shown) and angle of 0 degrees is defined by the sides of the curved rib 4.

10 As shown in Fig 2 a base configuration 200 according to the present invention has a concave spherical portion 1, an annular groove 2, a rib 4, and legs 3, the left side and right side of each leg, together defining an angle of 72 degrees subtended by the outer surface 34. Hence, the present invention can be clearly distinguished from the prior
15 arts as shown in Figs 6 and 7. Further, according to the principle of biaxial stretched blow molded technique and numerous experiments, the present invention is possessed of higher strength than those prior arts.

20 Although the present invention has been described with a certain degree of particularity, it is understood

that the present disclosure is made by way of example only
and that numerous changes in the detail of construction
and the combination and arrangement of parts may be
resorted to without departing from the spirit and scope of
5 the invention as hereinafter claimed.



CLAIMS

1. A base configuration for a biaxial stretched blow molded PET container comprising:
 - 5 a concave spherical portion provided at a central part of said base configuration;
an annular groove around said concave spherical portion;
five legs extending radially and outwardly from said annular groove, each of said legs including an inner side, a lower side, a left side,
10 a right side, and an outer side, the left and right sides defining therebetween an angle of 40 to 70 degrees, with the outer side subtending the angle; and a curved rib formed between every two of said legs and having a left side and a right side which define therebetween an angle of 32 - 0 degrees.
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2. The base configuration for a biaxial stretched blow molded PET container as claimed in Claim 1, wherein said inner side is an inclined surface extending radially and outwardly with respect to said annular groove, said lower side is a generally horizontal surface, said left and
20 right sides are inclined surfaces, and said outer side is a curved surface extending downwardly from body of said container.
3. The base configuration for a biaxial stretched blow molded PET container as claimed in Claim 1, wherein said lower side is an inclined
25 surface extending upwardly and inwardly with respect to said annular groove.
4. A base configuration substantially as herein described with reference to Figures 1 to 4.