

## BEVERAGE SACHET

The present invention relates to a beverage sachet.

In German (Fed. Rep.) patent specification (Offenlegungsschrift) No. 22 34 933 there is disclosed a beverage sachet of laminate material with a liquid-tight inner layer of thermoplastic (weldable) plastics material and an intermediate layer impermeable by aromatic substances. The sachet consists of two oblong film webs connected with each other by longitudinal welding seams extending along their longer edges and of an inserted base piece, folded inwardly in V-shape in the region of two adjacent shorter edges of the webs and welded to each web by means of a respective U-shaped welded seam.

In another known beverage sachet of this kind, which is described in German (Fed. Rep.) patent specification No. 12 81 140, the side walls of the sachet and the base piece are integrally formed from a single web of film. In this sachet, the base part is folded inwardly in V-shape in the region of one of the shorter sides of the sachet, thus between the web portions forming the side walls, and these portions are connected with each other along their longer edges by longitudinal welded seams, which in the region of the base part join four overlying web layers.

In order to ensure that the known sachet is leak-proof and has a desired degree of stability, additional angled welded seams are required between the lower edges of the sachet and the outer longitudinal seams in the region of the inner folded edge of the base part, and also supporting seams along the lower edges of the sachet, these additional seams each connecting a web portion and the base part.

together. The angled seams and the supporting seams are also necessary in the known sachet in order to promote unfolding of the base part and transition thereof into an approximately rhomboid shape during filling of the sachet.

According to the present invention there is provided a beverage sachet of laminate sheet material with a layer of thermoplastic plastic material facing inwardly of the sachet and an adjacent layer of vapour-impermeable material, the sachet comprising two oblong wall panels connected together at their longer edges by welded lateral edge seams and a base panel folded to project between the wall panels in the region of two adjacent shorter edges thereof and connected to each of the wall panels at said longer and shorter edges by a respective substantially U-shaped welded seam, which is of greater width than either of the lateral edge seams and which comprises a base section extending along said shorter edge of the respective wall panel and two arm sections extending parallel to the lateral edge seams and terminating in the region of the fold of the base panel in tapered portions connecting with the lateral edge seams.

In a beverage sachet construction embodying the present invention, the angled seams and supporting seams typical of the known beverage sachets are redundant. The unfolding of the base panel during filling and stability of the sachet are achieved by the form of the U-shaped seams connecting the base panel to the wall panels, whereby the arm sections of these seams extend parallel to the lateral edge seams, are substantially wider than the lateral edge seams, have tapered portions in the region of gussets formed by

the inside fold edge of the inserted base panel, and connect to, at the ends of these tapered portions, the inside edges of the lateral edge seams. Due to the width of the base sections of the U-shaped seams being greater than that of the lateral edge seams, it is ensured that the sachet has excellent security against leakage and substantial stiffness in its base region, which is synonymous with good stability. The provision of tapered end portions of the arm sections of the U-shaped seams in the proximity of the inside fold edge of the base panel facilitates unfolding of the base panel during filling of the sachet, yet, due to the manner of welding-in of base panel, sagging of the middle part of the base panel below the support surface formed by the lower sachet edges is effectively prevented.

An embodiment of the invention will now be more particularly described by way of example with reference to the accompanying drawings, in which:

Fig. 1 is a schematic elevation from one flat side of a beverage sachet according to the said embodiment, before filling of the sachet,

Fig. 2 is a schematic longitudinal sectional view of the base region of the sachet along the line II-II of Fig. 1,

Fig. 3 is a detailed view, to an enlarged scale, of the area III of Fig. 2, showing a transverse welded seam connecting a base panel of the sachet with a wall panel thereof,

Fig. 4 is a schematic perspective view of the sachet, filled with a beverage and sealed, and

Fig. 5 is an end view partly in section on the line V-V of Fig. 4, of the filled sachet.

Referring now to the drawings, there is shown a beverage

sachet 10 made of laminate film material and consisting of two oblong wall panels 11 and 12 and a base panel 13. The base panel 13 is welded in place at the lower end of the sachet, in the region of two adjacent shorter edges 21 of the wall panels 11 and 12, and is folded inwardly in a V-shape, thus between the wall panels 11 and 12. The laminate material forming the wall panels 11 and 12 and base panel 13 comprises an inwardly disposed, liquid-tight layer 14 of a weldable plastics material of neutral taste, for example polyethylene, a middle layer 15 of metal foil impermeable by aromatic substances, the layer 15 thus acting as a vapour barrier, and an outer layer 16 in the form of a protective coating, for example a coating of plastics enamel.

The wall panels 11 and 12 of the sachet are firmly connected with one another by longitudinal welded seams 19 and 20 extending along their longer edges 17 and 18. The base panel 13 is welded to each of the wall panels by means of a respective U-shaped welded seam 22 or 23, the width of which is greater than that of either of the seams 19 and 20. The seam 22 or 23 securing the base panel consists of a transverse base section 24 or 25, which extends over the entire width of the sachet at the lower end of the sachet along the shorter edge 21 of the respective one of the wall panels, and two arm sections 26, 26' or 27, 27', which extend parallel to the seams 19 and 20 connecting the wall panels together and which, apart from their greater width compared with the seams 19 and 20, terminate in the region of the gussets formed by an inner fold edge 28 of the base panel 13 in outwardly directed tapering projections 29, 29' or 30, 30' at the inside edges of the seams 19 and 20.

The seams 19 and 20 thus extend beyond the edge 28 of the

base panel 13, there being four portions of the laminate film material in the region of the base panel. Of these film material portions, those of the folded base panel are each welded to the outwardly disposed film portion of the neighbouring wall panel and the seams 19 and 20 pass over the tapered projections 29, 29' or 30, 30' into the parallelly extending seam arm sections 26, 26' or 27, 27'. Cut-outs 31 and 32 in the film portions forming the base panel are provided in alignment with the seams 19 and 20 and the thermoplastic inside layers of the film portions forming the wall panels are welded to each other in the region of these cut-outs so that the longitudinal edges of the wall panels below the fold edge 28 are prevented from splaying apart.

Identification of the welded seams is facilitated by shading in Figs. 1, 4 and 5.

Before filling of the sachet, the film portions forming the wall panels lie flatly against each other, as do portions of the inwardly folded base panel. During filling of the sachet, the wall panels 11 and 12, which are held together at their longitudinal edges by the seams 19 and 20, splay apart and the base panel 13 unfolds along the fold edge 28. The unfolding of the base panel is promoted during filling by the arrangement of the seam sections 26, 26' or 27, 27' connecting with the seams 19 and 20 by tapered projections 29, 29' or 30, 30' in the region of the gussets formed by the fold edge 28. This is shown by Figs. 4 and 5.

The film portions forming the sachet wall panels and base panel have relatively little stiffness so that in the case of the present embodiment there is provided a beverage sachet with flexible walls of low inherent stiffness. Due to the fact that the seams

welding the base panel in place are considerably wider than the seams 19 and 20 connecting the wall panels together, the sachet in its entirety receives a stiffening which promotes its stability and prevents sagging of the middle part of the base panel below the support surface formed by the lower sachet edge. Fig. 5 illustrates a filled beverage sachet closed off by a welded seam 33 extending across the shorter edges of the wall panels remote from the base panel 13 and shows the formation of a pronounced support foot by the seam base sections 24 and 25 at the lower edges of the wall panels.



CLAIMS

1. A beverage sachet of laminate sheet material with a layer of thermoplastic plastics material facing inwardly of the sachet and an adjacent layer of vapour-impermeable material, the sachet comprising two oblong wall panels connected together at their longer edges by welded lateral edge seams and a base panel folded to project between the wall panels in the region of two adjacent shorter edges thereof and connected to each of the wall panels at said longer and shorter edges by a respective substantially U-shaped welded seam, which is of greater width than either of the lateral edge seams and which comprises a base section extending along said shorter edge of the respective wall panel and two arm sections extending parallel to the lateral edge seams and terminating in the region of the fold of the base panel in tapered portions connecting with the lateral edge seams.
2. A sachet as claimed in claim 1, wherein the laminate material comprises a protective coating applied to the layer of vapour-impermeable material.
3. A sachet as claimed in either claim 1 or claim 2, wherein the thermoplastic plastics material is polyethylene.
4. A sachet as claimed in any one of the preceding claims, wherein the vapour-impermeable material is metal foil.
5. A sachet as claimed in any one of the preceding claims, the sachet containing a beverage and the wallpanels being connected together at their other two adjacent shorter sides by a welded seam.
6. A beverage sachet substantially as hereinbefore described with reference to and as illustrated by the accompanying drawings.