Support provided with a number of stacked layers of plastic bags filled with butter

Support (5) provided with a number of stacked layers of plastic bags (1) which are filled with a butter-like product and are closed in a substantially airtight manner, which bags (1) each contain at least 15 kg of said butter-like product, are substantially self-supporting and are stacked substantially without lateral supports.
Description

[0001] The present invention relates firstly to a support provided with a number of stacked layers of plastic bags which are filled with a butter-like product and are closed in a substantially airtight manner, which bags each contain at least 15 kilograms of said butter-like product.

[0002] A support of this type is known in the prior art and described, for example, in US-A-4,874,621.

[0003] According to this American patent, the plastic bags which are filled with butter and are closed in a substantially airtight manner are firstly packaged in boxes before these are stacked on a support. In other words, before the butter-like product can be used the plastic bags have to be removed from the boxes, opened and emptied. In practice, this entails a relatively large number of operations, which is undesirable.

[0004] Moreover, cardboard boxes are still sensitive to the action of moisture from the environment. Mould and the like is formed quickly and the inherent strength of the boxes decreases rapidly. Furthermore, over the course of time cardboard boxes have been found to release dust, which is highly undesirable in particular when the butter-like product is used in a preparation area, such as a bakery or the like. Finally, the use of cardboard is not environmentally friendly.

[0005] Therefore, in the prior art there is a demand for a new means of storing a butter-like product. Moreover, a butter-like product is considered to be a product which is sensitive to external influences.

[0006] It is an object of the present invention to satisfy this demand, and to this end the invention provides a support of the type described in the introduction which is characterized in that the bags are substantially self-supporting and are stacked substantially without lateral supports. Surprisingly, it has been found that, if plastic bags filled with a butter-like product are stacked on top of one another, they can be used very effectively without lateral support and without there being a risk of the stack falling over or collapsing. Bags which have been stacked in this way are able to withstand the conventional operations of freezing and thawing to which a butter-like product is subjected during storage. Compared to standard processes with cardboard outer boxes, these operations will proceed more efficiently.

[0007] In the present application, the term butter-like product is intended to mean, inter alia, margarine, low-fat margarine, baking and concentrated butter, butter, etc.

[0008] In practice, it is possible to use supports, such as cover sheets, which extend parallel to the support. However, this is not imperative.

[0009] In particular, the bags are stacked directly on top of one another. In other words, it is preferable for the bags to be stacked on top of one another on the support, without any intervening support.

[0010] Advantageously, the bags are stacked at least 8-high on the support. In the present description, the term support is understood as meaning any supporting means which is known in this specialist field and could be used for this purpose. In other words, the support may be a fixed base but may also be a portable support, such as a pallet.

[0011] The bags may be made from numerous different types of materials, among which consideration may be given to single-layer or multilayer films comprising PE, PP, HPDE, EVOH, PA, etc. In particular, the bags are so-called vertical-form-fill bags, preferably so-called polygal bags, provided that the projecting parts of these polygal bags, in use, do not cause damage to other bags. These bags can simply be filled in line and, on account of their cushion shape, can easily be stacked.

[0012] Polygal bags are bags which are substantially cushion-shaped, a projecting flap being present along at least one side. The cushion shape is often elongate. The projecting flap is usually situated on a long side. Furthermore, the flap may be provided with one or more cutouts, so that the bag is easy to handle.

[0013] Polygal bags also comprise a spout with a stop, which spout may be made from flexible material and/or is present in the vicinity of a side edge, so that the spout cannot damage other bags.

[0014] When polygal bags are being filled with a butter-like product, the polygal bags are in practice first of all positioned, then the stop is removed automatically, the bag is connected to a supply of butter-like product, a vacuum is applied to the bag by suction, and then the bag is filled with said butter-like product, and finally the stop is attached again. Polygal bags have the significant advantage that they can easily be sampled.

[0015] According to the invention, the bag must be at least substantially airtight. It is generally a bag which is heat-sealed on all sides. In other words, the bags are preferably never folded closed, but rather are always heat-sealed, adhesively bonded closed or the like.

[0016] The bag is advantageously also lightproof. This can be achieved, for example, by applying a light-proof layer (for example of carbon or aluminium), if appropriate in combination with a suitable printing.

[0017] The bags are preferably composed of a plurality of layers and preferably comprise polyethylene. In particular, the film material of the bags is at least 70 micrometres thick.

[0018] In particular, the outer surface of the bags is processed in such a manner that it has non-slip properties, or a non-slip adhesive/layer is applied.

[0019] In particular, the bags contain butter.

[0020] In the prior art, there is opposition to placing butter under elevated pressure. One difference compared to the current packaging method using a cardboard outer box is that a considerably higher pressure is applied to the butter-like product itself with the packaging according to the invention. This may have adverse effects for the structure and therefore reduce the usa-
bility of the products. However, it has been found that this is by no means the case, and that the supports according to the invention provided with layers of plastic bags filled with a butter-like product, and even with butter, can be stacked up to 5-high after freezing.

The invention therefore also provides an assembly of a plurality of stacked supports according to the invention.

The invention also provides a plastic bag filled with at least 15 kilograms of a butter-like product, which is closed in a substantially airtight manner and can be used with a support according to the invention. The bag is advantageously substantially free of projecting parts.

Plastics bags of this type are not known in the prior art.

Although US-A-4,874,621 has disclosed butter-filled plastic bags, these bags comprise a projecting filling spout, which makes it difficult if not impossible for the bags to be stacked directly on top of one another. The said projecting spout may cause damage to or tear adjoining plastic bags.

However, according to the invention it is possible to use polygal bags which have been adapted in such a manner that they do not cause any damage to other bags. For this purpose, the polygal bag may be provided with a sealable spout in the vicinity of one of the short sides, for example, thus preventing damage to the bags during stacking. The advantage of the polygal bag is that it is provided with a side flap on one of the long sides, so that the bag can easily be lifted using gripper means.

Finally, the invention provides a method for packaging, storing and transporting a butter-like product, which method is characterized in that the butter-like product is accommodated in bags according to the invention. In particular, a so-called vertical-form-fill device is used for this purpose.

Advantageously, the bags are stacked on a support according to the invention.

The invention is suitable for packaging both summer butter and winter butter.

The invention will be explained in more detail below with reference to the appended drawing, in which:

- Fig. 1 shows a perspective view of a plastic bag according to the invention which is filled with butter; and
- Fig. 2 shows a perspective view of a pallet provided with a number of layers of filled plastic bags according to the invention.

Fig. 1 shows a polyethylene bag which is filled with 25 kilograms of butter. The polyethylene bag has a wall thickness of 120 micrometres.

In practice, the dimensions of the bag are, for example, for a butter content of 25 kg: width 35 cm, length 60 cm and thickness 15 cm. If a modified polygal bag is used, a side flap with a width of, for example, approx. 5-6 cm will also be present on one of the long sides.

The bag shown is filled with the aid of the vertical-form-fill method, which is generally known in the prior art and is described, for example, in US-A-5,231,817. In this method, a web of plastic film is folded over in the longitudinal direction and is heat-sealed (seam 2), after which a transverse closure seam (seam 3) is applied to the flexible tube formed in this way, and then butter is introduced and a second closure seam (seam 4) is made. Bags which have been formed in this way and contain butter can, for example, be separated from one another by cutting. The heat-sealing may involve hot-melt welding, but also adhesive bonding, etc.

The bags according to the invention can be stacked on a support, such as a wooden pallet, as indicated in Fig. 2. The pallet is denoted by 5.

A plurality of pallets 5 of this type can be stacked on top of one another up to 5-high. In this event, by way of example a cover sheet will generally be laid on top of the assembly, in order to prevent damage to a plastic bag on top of the stack from a pallet laid on top of it.

Immediately after its preparation, butter has a consistency which varies from a thick liquid to a paste. Over the course of time, the butter will solidify further as a result of crystallization. The butter is generally introduced into the bags at approximately 14°C.

The method according to the invention can be carried out in line with the customary preparation of butter. A highly efficient method is obtained if a vertical-form-fill device is used.

Claims

1. Support (5) provided with a number of stacked layers of plastic bags (1) which are filled with a butter-like product and are closed in a substantially airtight manner, which bags (1) each contain at least 15 kg of said butter-like product, characterized in that the bags (1) are substantially self-supporting and are stacked substantially without lateral supports.

2. Support according to claim 1, characterized in that the bags (1) are stacked directly on top of one another.

3. Support according to claim 1 or 2, characterized in that the bags (1) are stacked at least 8-high on the support (5).

4. Support according to one or more of the preceding claims, characterized in that the bags (1) are so-called vertical-form-fill bags.

5. Support according to one or more of the preceding claims, characterized in that the bags (1) are...
made from polyethylene.

6. Support according to one or more of the preceding claims, characterized in that the bags contain butter.

7. Assembly of a plurality of stacked supports (5) according to one or more of the preceding claims.

8. Plastic bag (1) filled with at least 15 kg of a butter-like product and closed in a substantially airtight manner, which can be used with a support according to one or more of claims 1 to 6.

9. Method for packaging, storing and transporting butter, characterized in that the butter-like product is accommodated in plastic bags (1) according to claim 8.

10. Method according to claim 9, characterized in that the bags (1) are stacked on a support (5) according to one or more of claims 1-6.
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The present search report has been drawn up for all claims.

Place of search: THE HAGUE  
Date of completion of the search: 8 August 2001  
Examiner: SERRANO GALARRAGA, J

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