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(54) **TOBACCO POUCH**

(57) The invention relates to a method for pasteurizing tobacco contained in a pouch. The method has the steps of: providing a pouch that includes a pocket, the pocket having a mouth for providing access to the interior of the pocket and having a closure extending along the mouth; filling the pocket with tobacco through the mouth; sealing the pocket such that there is an imperfect seal and pasteurizing the tobacco contained in the pocket of the pouch. The invention further relates to a pouch that contains tobacco, prepared by the present method.

EP 2 989 906 A1

Description

[0001] The present invention relates to a method of pasteurizing tobacco. The invention also provides a pouch containing tobacco which has been pasteurized.

[0002] Tobacco for roll-your-own or make-your-own smoking items is typically stored in a sealed pouch made from a metallised or non-metallised material. An example of such a pouch comprises a closure strip that seals the tobacco content for transport and which can be broken by a user to access the contents when necessary. A need exists to increase the shelf-life of the tobacco stored in a pouch. One way of extending the shelf life is to pasteurize the tobacco by way of heating before it goes to the consumer.

[0003] One problem arising when pasteurising tobacco contained in a completely sealed pouch is that the pouch is subject to so-called bulging caused by internal pressure during heating, which is undesirable because it causes the pouch to expand in an unpredictable way which may lead to its rupture, and also causes difficulties when packaging tobacco in pouches.

[0004] Therefore, there is a need to provide a method of manufacturing sealed pouches containing tobacco, which do not suffer from the problem of pouch bulging. Of course, it is also desirable for the production of such a pouch to be simple, reliable and cost-effective.

[0005] In order to solve the problems posed, the present invention provides, in a first aspect of the invention, a method for pasteurizing tobacco contained in a pouch, wherein the method comprises the steps of: providing a pouch comprising a pocket, the pocket having a mouth for providing access to the interior of the pocket and having a closure extending along the mouth; filling the pocket with tobacco via the mouth; sealing the pocket such that there is an imperfect seal; and pasteurizing the tobacco contained in the pocket of the pouch.

[0006] In a second aspect, the invention provides a pouch for containing tobacco, obtainable by the above-mentioned method.

[0007] The method according to the present invention can comprise a preliminary step of forming the pouch from a sheet of material. The pouch is conventionally formed from a rectangular sheet of material which is folded over itself and welded together at the edges to form a pocket where the tobacco is to be kept. A portion of the rectangular sheet extending beyond the mouth of the pocket forms a flap capable of folding over the pocket.

[0008] Once the pouch has been formed from the sheet of material, the pocket of the pouch is filled with tobacco via the mouth. After filling of the pouch with tobacco, the pocket of the pouch is sealed such that there is an imperfect seal.

[0009] The provision of an imperfect seal on sealing means that there is fluid communication between the interior and exterior of the pocket of the pouch. For example, to allow for the exchange of gases between the interior and exterior of the pocket of the pouch. This is advantageous when the subsequent pasteurization step is carried out because it renders the pouch less susceptible to so-called bulging.

[0010] An imperfect seal can be obtained in various ways. One way is to have the pocket of the pouch comprise at least one micro-perforation, which allows for fluid communication between the exterior and interior of the pouch. Alternatively, at least one micro-perforation may be pierced in the pocket of the pouch after the step of sealing to provide an imperfect seal. Preferably, the at least one micro-perforation has a cross-sectional area of less than 0.01 mm^2 which would limit ingress flow of gases after the pasteurisation step is carried out.

[0011] A second alternative is to have the closure comprise a closure strip, preferably comprising an adhesive, which is preferably a heat-activated adhesive such that when the closure strip is heated, the adhesive is activated thereby providing a seal. In this case, the imperfect seal is formed by sealing (preferably, heat sealing) the closure strip such that at least one channel is retained to allow for fluid communication between the interior and exterior of the pocket. Other ways of sealing can also be used such as ultrasonic welding of the two sheets of material or by applying pressure to pressure sensitive adhesives. The pocket of the pouch may also include at least one micro-perforation, as detailed above. In other words, the imperfect seal may be a combination of at least one micro-perforation and a channel which is retained when sealing the closure strip.

The channel can be from 0.1 mm to 10 mm of the closure strip, preferably from 5 mm to 7 mm.

[0012] Preferably, the length of the closure strip is from 65 mm to 145 mm. Most preferably, the length of the closure strip is from 70 mm to 80 mm, from 110 mm to 120 mm or from 130 mm to 140 mm.

[0013] The closure strip comprising the heat activatable glue can be heated using a metal heater bar in which, when pressed against the closure strip, activates the glue. In a preferred embodiment, the closure strip is not resealable once it has been opened by a consumer.

[0014] The heater bar comprises a recess such that when pressed against the closure strip, a portion of the closure strip comprising the heat activatable glue is not heated. This portion which is not (or less) heated gives rise to a channel allowing for fluid communication between the interior and exterior of the pouch. For example, if a channel of 5 mm of the closure strip is required, the recess will be 5 mm in width. In an alternative embodiment, the heater bar may comprise more than one recess if more than one channel is required.

[0015] After sealing the pocket of the pouch such that there is an imperfect seal, the pouch is subjected to pasteurization and/or sterilisation or more generally to a step in which tobacco is cured in such a way so as to significantly reduce or completely remove microorganisms.

[0016] The pasteurisation step can be carried out as described in patent application WO2013/127528.

[0017] Preferably, the heating is carried out for about

30 seconds to about 30 minutes, more preferably for about 2 minutes and about 7 minutes.

[0018] Preferably, during the heating step, the tobacco is heated at a temperature of about 55 to 120 °C, preferably about 60 to about 85 °C.

[0019] Preferably, the heating is carried out by subjecting the package to a heating medium, in particular water, steam, air or an inert gas.

[0020] Alternatively, the tobacco may be heated by means of microwave radiation which is able to quickly heat up the tobacco comprising significant moisture content.

[0021] After heating, the pouch may be further transported to a cooling station, in which a cooling step is carried out. For the cooling step, ambient or cold air is used to cool the product down to ambient temperature or to a temperature below ambient temperature.

[0022] Preferably, after pasteurization of the tobacco in the pocket of the pouch, the pouch is sealed such that there is a perfect seal to avoid ingress of any microorganisms. Therefore, all throughout storage before the pouch is provided to a consumer, the pouch is completely sealed. If the imperfect seal is obtained by way of a closure strip, in this further sealing step, either the original, first channel in the closure strip is completely sealed so that the channel no longer exists along the strip. Alternatively another full, second closure strip is formed beside the original closure strip which is subsequently sealed. In other words, a second closure strip is placed across the mouth region of the pocket, and sealed completely, thereby providing a perfect seal. If the imperfect seal is obtained by way of one or more microperforations, then the microperforations are closed or obstructed (i.e. sealed), either by a sealant material or by applying a sticker over the at least one microperforation.

[0023] Alternatively, the channel in the closure strip may not be sealed completely after pasteurization, such that a channel allowing for fluid communication between the interior and exterior of the pocket is present in a pouch to be used by a consumer. In this case, the channel should be carefully designed to reduce ingress of gas from the exterior while at the same time be of size that allows gas to come out of the pouch to expel gas that is formed by the tobacco during storage.

[0024] It has been found that a channel of a length of less than 12.5 % (i.e., of from 0.01% to 12.5%) of the length of the closure strip, preferably from 1.0 % to 9.0 %, most preferably from 3.5 % to 7.0 % are suitable. When the closure strip comprises at least two (or more) channels, the total channel opening shall be the same or less than the above mentioned values.

[0025] The pouch may further comprise a flap which extends from the mouth and is capable of folding over the pocket. When the pouch is closed, the flap is turned over against the pocket of the pouch. The flap may be detachably connected with an adhesive.

[0026] The pouch may be formed from a sheet or film of a thermoplastic material such as a polyolefin, e.g. polyethylene. However, the pouch is preferably made of a metallised material comprising oriented polypropylene (OPP), polyethylene terephthalate (PET), metallised polyethylene terephthalate (MPET), polyethylene (PE) or any combination thereof. Preferably, the pouch is made of a material comprising OPP, MPET and PE or PET, MPET and PE. The advantage associated with using a metallised material over a non-metallised material is that the tobacco is kept moist for longer periods of time.

[0027] The pouch material typically has an oxygen transmission rate (OTR) in the range of from 1 to 800 $cm^3/m^2/24h/1atm$, preferably from 1 to 400 $cm^3/m^2/24h/1atm$, most preferably from 1 to 200 $cm^3/m^2/24h/1atm$. OTR values can be calculated according to the standard method ASTM D3985. In addition, the pouch material typically has a water vapour transmission rate (WVTR) of from 0.1 to 4 $g/m^2/day$, preferably from 0.2 to 3.5 $g/m^2/day$. WVTR values can be calculated according to the standard method ASTM F1249.

Claims

1. A method for pasteurizing tobacco contained in a pouch, wherein the method comprises the steps of:

   providing a pouch comprising a pocket, the pocket having a mouth for providing access to the interior of the pocket and having a closure extending along the mouth;
   filling the pocket with tobacco via the mouth;
   sealing the pocket such that there is an imperfect seal ; and
   pasteurizing the tobacco contained in the pocket of the pouch.

2. The method according to claim 1, wherein the method further comprises the preliminary step of forming the pouch from a sheet of material.

3. The method according to claim 1 or 2, wherein the pocket of the pouch comprises at least one microperforation in the pocket of the pouch to allow for fluid communication between the interior and exterior of the pocket.

4. The method according to claim 3, wherein the at least one micro-perforation has a cross-sectional area of less than 0.01 mm^2.

5. The method according to any preceding claim, wherein the closure comprises a first closure strip.

6. The method according to claim 5, wherein the imperfect seal is formed by sealing the closure strip such that at least one channel is retained to allow for fluid communication between the interior and exterior of the pocket.

7. The method according to any one of the preceding claims, wherein the sealing is obtained by heat sealing a heat-activatable adhesive or by ultrasonic welding of the sheet of material or by pressure sealing a pressure sensitive adhesive.

8. The method according to any one of the preceding claims, wherein the method further comprises a step of sealing the pouch such that there is a perfect seal, after the step of pasteurization of the tobacco.

9. The method according to claim 8, wherein the step of sealing comprises sealing the channel in the first closure strip or the addition of a second closure strip, beside the first closure strip which is subsequently sealed.

10. The method according to claim 8, wherein the step of sealing comprises closing the at least one microperforation.

11. The method according to any of the preceding claims, wherein the step of pasteurisation includes applying microwave radiation to the pouch.

12. A pouch for containing tobacco, obtainable by the method according to any one of claims 1 to 11.

13. The pouch according to claim 12, wherein the pouch is made of material comprising oriented polypropylene (OPP), polyethylene terephthalate (PET), metallised polyethylene terephthalate (MPET), polyethylene (PE) or any combination thereof.

14. The pouch according to claim 12 or 13, wherein the pouch material has an oxygen transmission rate (OTR) value comprised between 1 and 800 $cm^3/m^2/24h/1atm$, preferably between 1 and 400 $cm^3/m^2/24h/1atm$.

15. The pouch according to any one of claims 12 to 14, wherein the pouch material has a water vapour transmission rate (WVTR) value comprised between 0.1 and 4 $g/m^2/day$, preferably between 0.2 and 3.5 $g/m^2/day$.

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EUROPEAN SEARCH REPORT

Application Number
EP 15 18 2969

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2008/016520 A2 (REYNOLDS TOBACCO CO R [US]; ROBINSON JOHN HOWARD [US]; PALMER LAYA KAT) 7 February 2008 (2008-02-07) * paragraphs [0037], [0039], [0040], [0052]; claim 1; figures 1-7 *	1-6,8,9, 12-15	INV. A24B15/18
X	WO 2013/127528 A1 (PHILIP MORRIS PROD [CH]) 6 September 2013 (2013-09-06) * page 6, line 7 - line 8; claims 1,6; figure 1 * * page 8, line 20 - line 29 *	1,2,5-12	
A	US 2008/156338 A1 (WINTERSON WARREN D [US] ET AL) 3 July 2008 (2008-07-03) * paragraph [0011] *	1-15	
A	GB 2 265 297 A (BROWN & WILLIAMSON TOBACCO [US]) 29 September 1993 (1993-09-29) * the whole document *	1-15	
A	US 2009/004329 A1 (GEDEVANISHVILI SHALVA [US] ET AL) 1 January 2009 (2009-01-01) * figures *	1-15	TECHNICAL FIELDS SEARCHED (IPC) A24B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	19 January 2016	Villányi Kelemen, K

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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L : document cited for other reasons

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