(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 4 018 847 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
18.09.2024 Bulletin 2024/38

(21) Application number: **20216462.0**

(22) Date of filing: **22.12.2020**

(51) International Patent Classification (IPC):
A24B 13/00 *(2006.01)* ***A24B 15/28*** *(2006.01)*
A24B 15/38 *(2006.01)*

(52) Cooperative Patent Classification (CPC):
A24B 15/285; A24B 13/00; A24B 15/385

(54) **A POUCHED PRODUCT FOR ORAL USE**

BEUTELARTIGES PRODUKT ZUR ORALEN VERWENDUNG

PRODUIT À USAGE ORAL EN SACHET

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(43) Date of publication of application:
29.06.2022 Bulletin 2022/26

(73) Proprietor: **Swedish Match North Europe AB**
118 85 Stockholm (SE)

(72) Inventor: **Kindvall, Mårten**
415 24 Göteborg (SE)

(74) Representative: **Valea AB**
Box 1098
405 23 Göteborg (SE)

(56) References cited:
EP-A1- 2 730 181
WO-A1-2007/037962
WO-A1-2010/104464
WO-A1-2016/090075
WO-A1-2017/153718
WO-A2-2009/010884
US-A1- 2008 308 115
US-A1- 2010 300 464
US-A1- 2010 300 465
US-A1- 2011 083 680

EP 4 018 847 B1

Description

TECHNICAL FIELD

[0001] The present disclosure relates to a pouched product for oral use comprising a liquid permeable cover material and a portion sized amount of a filling material comprising a particulate material, the filling material being enclosed by the liquid permeable cover material.

BACKGROUND

[0002] An oral pouched product as disclosed herein, is intended for use in the oral cavity, such as by buccal placement e.g., by placing the pouched product between the upper or lower gum and the lip or cheek. A pouched smokeless tobacco product may also be referred to as a portion-packed smokeless tobacco product for oral use. The pouched product is normally sized and configured to fit comfortably and discreetly in a user's mouth between the upper or lower gum and the lip or cheek.

[0003] Traditionally, oral pouched products are used in the oral cavity of a consumer to provide a user with the benefits of an active substance such as nicotine, caffeine, and/or different flavors. A common type of nicotine containing oral pouched products is oral smokeless tobacco products. Such products generally comprise water, salt, pH adjuster(s) and additional components such as flavors and humectants. Commonly, these products are called snuff.

[0004] Oral pouched nicotine containing products comprising no tobacco, or only a small amount of tobacco are now becoming increasingly popular among consumers due to inter alia their appealing appearance, freshness and taste. Moreover, this kind of product allows a user to enjoy nicotine without being exposed to tobacco. The tobacco free or almost tobacco free oral pouched products are usually flavored compositions comprising a filling material which may e.g., comprise particles of microcrystalline cellulose or fiber material derived from plants other than tobacco.

[0005] Further types of oral pouched products are those which only deliver a flavor into the oral cavity and those which are designed for delivering active substances other than nicotine.

[0006] The tobacco free oral pouched products are generally relatively dry products, with a pre-use moisture content below 35% by weight of the filling material and often below 20% by weight of the filling material. Oral pouched products having even lower moisture content, in the order of 4-10 % by weight of the filling material are also known in the art.

[0007] Oral pouched products are typically used by a consumer by placing the pouch between the upper or lower gum and the lip and retaining it there for a limited period of time. The product is configured to fit comfortably and discreetly in the user's mouth. The pouch material holds the filling material in place allowing saliva to pass into the filling material and allowing flavors and active substances such as nicotine to diffuse from the filling material into the consumer's mouth.

[0008] WO 2017/153718 A1 relates to an oral tobacco product comprising a particulate material.

[0009] WO 2010/104464 A1 relates to moisture-soluble alginate particles carrying nicotine.

[0010] US 2011/083680 A1 relates to flavor beads formed by extrusion and spheronization.

[0011] US 2008/308115 A1, US 2010/300464 A1 and US 2010/300465 A1 relate to extruded tobacco beads.

[0012] EP 2 730 181 A1 relates to a smokeless tobacco product comprising an outer and an inner pouch, the inner pouch comprising aroma particles.

[0013] WO 2016/090075 A1 relates to a pouched product including a water permeable fabric pouch, a release agent possibly being present in an encapsulated form.

[0014] WO 2009/010884 A2 discloses flavor strips and flavor beads.

[0015] WO 2007/037962 A1 relates to granular particles of tobacco.

[0016] It has been found that oral pouched products having a filling material made up mainly of a powdery or particulate material may be perceived by users as giving a disagreeably dry and gritty mouth feeling especially in an initial phase of use of such products.

[0017] An objective with the disclosure herein is to offer an oral pouched product containing a filling material having improved properties, in particular regarding initial mouthfeel and user satisfaction.

SUMMARY

[0018] One or more of the above objects may be achieved with an oral pouched product according to claim 1. Variations of the disclosure are set out in the dependent claims and in the following description.

[0019] The pouched product for oral use as disclosed herein comprises a liquid permeable cover material and a portion sized amount of a filling material comprising a particulate material, the filling material being enclosed by the liquid permeable cover material. The particulate material contains less than 0.5% of particles passing through a sieve having a mesh size of 250 μm. The filling material comprises one or more water soluble components.

[0020] A mesh size of 250 μm corresponds to a particle size in the order of a small to medium-sized grain of sand.

Such particles are extremely unpleasant if they escape out through the cover material into the oral cavity of a user as they give rise to a gritty and dry mouthfeel which may linger for a long time after the product has been placed in the oral cavity, especially if the particles are non-soluble particles.

[0021] Small particles and fines in a filling material may also cause problems with dusting during manufacturing of oral pouched products, as they may impair seal formation and may cause clogging of machine parts. It is also desirable to minimize the amount of dust from a health and hygiene perspective of the manufacturing process.

[0022] The filling material in the oral pouched products as disclosed herein may have a pre-use moisture content as determined by the method disclosed herein of from 1% by weight of the filling material to 30% by weight of the filling material, such as from 1% by weight of the filling material to 25% by weight of the filling material, such as from 1% by weight of the filling material to 15% by weight of the filling material, such as from 1% by weight of the filling material to 7% by weight of the filling material, such as from 5% by weight of the filling material to 30% by weight of the filling material, such as from 5% by weight of the filling material to 25% by weight of the filling material, such as from 5% by weight of the filling material to 15% by weight of the filling material, such as from 10% by weight of the filling material to 20% by weight of the filling material, such as from 10% by weight of the filling material to 15% by weight of the filling material.

[0023] A filling material in an oral pouched product as disclosed herein and having a relatively low pre-use moisture content is perceived by users to be fresh and agreeable to handle when taking it out of a user container and tucking it in, e.g. between the upper or lower lip and the gum of the user.

[0024] It may be preferred that the moisture content of the filling material in the oral pouched products as disclosed herein is less than 20% by weight.

[0025] The particulate material in the filling material comprise water insoluble particles. The water insoluble particles are particles of microcrystalline cellulose, water insoluble starch, silica or a mixture thereof.

[0026] The water insoluble particles may be relatively dense, non-porous particles having a particle density in the range of from 0.8 g/cm^3 to 1.7 g/cm^3, such as from 1.0 g/cm^3 to 1.5 g/cm^3, such as from 1.1 g/cm^3 to 1.4 g/cm^3.

[0027] The water insoluble particles may constitute 85% by dry weight to 98% by dry weight of the filling material or 95% by dry weight to 98% by dry weight of the filling material.

[0028] The particles of the particulate material in the filling material are preferably relatively large particles and may have an average particle size within the range of from 0.4 mm to 3.0 mm, such as from 0.5 mm to 2.5 mm, such as from 0.6 mm to 2.5 mm, such as from 0.7 mm to 2 mm, such as from 0.8 mm to 1.5 mm, such as from 0.85 mm to 1.2 mm.

[0029] The particles of the particulate material in the filling material may be of generally the same size, with a narrow particle size distribution profile.

[0030] The water permeable outer cover material of the oral pouched products as disclosed herein may have an air permeability of from 4,500 l/m^2/s to 10,000 l/m^2/s, when measured according to the test method WSP070.1.R3(12) specified by EDANA, i.e. the European Disposables and Nonwovens Association. The air permeability is associated with the porosity of the packaging material and hence also associated with its tendency to leak filling material. A cover material having an air permeability of more than 4,500 l/m^2/s is referred to herein as having a high air permeability.

[0031] The water permeable outer cover material may have a relatively low basis weight in the range of from 10 g/m^2 to 28 g/m^2, such as in the range of from 15 g/m^2 to 25 g/m^2. A low basis weight cover material having a high air permeability constitutes a minimal barrier to saliva transport into and out of the filling material in the oral pouched product. Such cover materials have also been found to offer sensory benefits, in particular when combined with particles having a relatively large particle size, as disclosed herein. Larger particles which are relatively freely movable inside the cover and which may be felt through a cover material may contribute to the particulate filling material in the oral pouched product being perceived as having a pleasantly fluid quality.

[0032] The particles of the particulate material in the filling material of the oral pouched products as disclosed herein may have a relatively large particle size in the range of from 0.3 mm to 3 mm, preferably from 0.4 to 3.0 mm, preferably from 0.5 mm to 3.0 mm, more preferred from 0.6 mm to 3.0 mm, and most preferred from 0.7 mm to 3 mm, in combination with a water permeable cover material having a relatively high porosity in the range of from 4,500 l/m^2/s to 10,000 l/m^2/s, when measured according to the EDANA test method WSP070.1.R3(12).

[0033] Highly permeable cover materials may be preferred as they allow saliva to readily pass into and out of the filling material and may contribute to a high release rate for active components, flavours, sweeteners etc. from the filling material enclosed by the cover material. A drawback with highly porous cover material may be that there is a risk that also non-soluble substrate materials such as water insoluble particles and powder as well as fibres in the filling material may escape through the pores in the cover material and into the oral cavity of a user of the oral pouched product. By selecting large particles in combination with highly porous cover materials, the risk of escaping particles may be considerably reduced or even eliminated.

[0034] The liquid permeable cover material of the oral pouched product may be a nonwoven material.

[0035] The particles of the particulate material in the filling material may have a sphericity within the range of from 0.7 to 1.0, such as from 0.8 to 1.0 and a diameter of from 0.3 mm to 3 mm, such as from 0.4 mm to 3 mm, such as from 0.7 mm to 3 mm.

[0036] Sphericity and particle size may be determined with the aid of a QicPic image analysis instrument from 2012, Sympatec GmbH, ID No. 290-D, with Rodos/L dispersion line ID NO 214D and Vibri/L sample feeding ID NO 273, or equivalent equipment. A well dispersed particle flow is led through the image plane of the instrument. The particles are separated from each other by a transportation fluid and overlapping particles are avoided. A high number of particles per image frame may be captured.

[0037] The filling material of the oral pouched product as disclosed herein comprises nicotine.

[0038] The nicotine may be derived from a nicotine source being a nicotine base and/or being selected from the group consisting of nicotine hydrochloride, nicotine dihydrochloride, nicotine monotartrate, nicotine bitartrate, nicotine bitartrate dihydrate, nicotine sulphate, nicotine zinc chloride monohydrate and nicotine salicylate, nicotine benzoate, nicotine polacrilex and any combination thereof.

[0039] The filling material of the oral pouched product as disclosed herein may comprise tobacco material in an amount within the range of from 0.05 wt% to 10 wt%, such as from 0.2 wt% to 1 wt%, based on the total weight of said filling material. In such case the tobacco material may be a nicotine source. The tobacco material may be the only nicotine source or may be a nicotine source in addition to one or more of the nicotine sourced disclosed herein.

[0040] The filling material of the oral pouched product as disclosed herein may comprise an additive selected from the group consisting of a flavouring agent, a sweetener, a humectant, and any mixture thereof.

[0041] The additive may comprise or consists of a flavouring agent, such as a flavour oil, such as a hydrophobic flavour oil, such as a synthetic flavour, such as a nature-identical flavour.

[0042] The filling material of the oral pouched product as disclosed herein may be free from tobacco material. A tobacco free filling material may contain material derived from other plant sources such as coffee, tea, herbs, etc., and/or any suitable flavouring agent, sweetener, etc., as known in the art.

[0043] In the pouched product disclosed herein, at least one of the one or more water soluble components may be present on an outer surface of at least some of the particles of the particulate material in the filling material, such as on 20% to 100% of the particles, or 50% to 100% of the particles, or 80% to 100% of the particles.

[0044] In the pouched product disclosed herein, at least one of the one or more water soluble components may be present in interstices between the particles of the particulate material in the filling material.

[0045] At least one of the one or more water soluble components may be present both on an outer surface of at least some of the particles in the filling material and in interstices between the particles in the filling material.

[0046] The filling material of the oral pouched product as disclosed herein may comprise more than one type of particles. A first type of particles, may be water insoluble particles and a second type of particles may be water insoluble particles or fully or partially water soluble particles.

DEFINITIONS

[0047] The terms *"oral"* and *"oral use"* refer to a use of a product in contact with mucous membranes in the oral cavity of a human being, such as buccal placement of the product in the oral cavity. The products for oral use as disclosed herein are intended to be placed in their entirety in the oral cavity and are not intended to be swallowed.

[0048] As used herein the terms *"pouched product for oral use"* or *"oral pouched product"* refer to a portion of a smokeless composition containing saliva extractables and being packed in a saliva-permeable pouch material.

[0049] A *"particle"* as used herein is a three-dimensional piece of material having a maximum dimension of less than 5 mm and an aspect ratio of from 0.3 to 1. The *"aspect ratio",* AR, as used herein, is calculated as the width, w, of the particle divided by the length l, of the particle where the length is determined as the largest dimension of the particle and the width is determined as the largest dimension orthogonal to the length: A_R = l / w. A particle having an aspect ratio of 1 may e.g., be a perfect sphere or cube. The particles which are useful as the particulate material in the filling material of the oral pouched products disclosed herein may have a regular shape such as a spherical shape, a cubic shape, a cylindrical shape, etc., or may have an irregular shape with regular or near-regular shapes being generally preferred. The particles may have generally smooth outer surfaces or may have small aberrations in the outer surfaces.

[0050] A *"water insoluble particle"* as referred to herein is a particle which does not dissolve when subjected to saliva in the oral cavity of a user and which retains or substantially retains its shape when incorporated in a pouched product for oral use. The water insolubility also means that the particle size of the water insoluble particles as referred to herein does not diminish or at least does not diminish by more than 1% during use of an oral pouched product incorporating the water insoluble particles. The shape and the size of the water insoluble particles may remain substantially unaffected during use. However, a certain amount of swelling of the water insoluble particles may be permitted or even desired. The swelling should preferably be less than 30 % of the pre-use bulk volume of the water insoluble particles and more preferably less than 20 % of the pre-use bulk volume of the water insoluble particles.

[0051] As used herein, the term *"moisture content"* refers to the percent by weight, wt%, of oven volatile substances, such as water and other oven volatiles (e.g. propylene glycol) which is present in a component material, a composition or a product and is determined according to the Loss-On-Drying (LOD) method disclosed herein.

[0052] The *"dry weight"* of a material, a composition, or a product is calculated by detracting the amount of moisture from the total weight of the material, composition or product, the moisture content being determined by the Loss-On-Drying (LOD) method as disclosed herein.

[0053] As used herein, the term *"water content"* refers to the percent by weight, wt%, of water in a component material, a composition, or a product. The water content may be determined by using a standardized method for water analysis, such as Karl Fischer titration or gas chromatography, GC.

[0054] The term *"additional component"* refers to any component except water, which is present in addition to the particles of the particulate material in the filling material as disclosed herein, such as salts (e.g. sodium chloride, potassium chloride, magnesium chloride, calcium chloride and any combinations thereof), pH adjusters (e.g. sodium hydroxide, potassium hydroxide, potassium carbonate, sodium carbonate or sodium bicarbonate), flavouring agents, sweeteners, colorants, humectants (e.g. propylene glycol or glycerol), antioxidants, preservatives (e.g. potassium sorbate), binders, tobacco and non-tobacco plant material. The water-soluble component or water-soluble components which are part of the filling material in the oral pouched products as disclosed herein constitute one or more additional components.

[0055] The terms *"flavour" or "flavouring agent"* are used herein for substances used to influence the aroma and/or taste of the oral pouched product. The flavours may be any food-grade natural or synthetic flavour as known in the art and may include without limitation, essential oils, single flavour compounds, compounded flavourings, and extracts.

[0056] By *"tobacco"* or *"tobacco material"* is meant any part, e.g., leaves, stems, stalks, and flowers, of any member of the genus Nicotiana.

[0057] By a *"cover material"* as used herein is implied any suitable saliva permeable packaging material as known in the art. The cover material may also be referred to as *"pouch material"* and may be a nonwoven material, a material made by conventional textile production methods such as weaving or knitting or may be an apertured plastic film or netting. A nonwoven material suitable for use as cover material may be a nonwoven material comprising staple fibres, such as staple fibres of regenerated cellulose e.g., viscose rayon staple fibres and a binder, such as a polyacrylate binder. Alternatively, the nonwoven material may comprise fibres which are formed into a nonwoven web by spunbonding, hydroentangling, meltblowing, etc. The fibres used in such processes are generally thermoplastic fibres which are thermally bonded to form a coherent nonwoven web. The covering material may optionally comprise additional components such as flavouring agents and/or colorants.

[0058] A common way of making a pouched product having a generally rectangular pillow-like shape, is either to provide the cover material as a seamless endless tube or to form a flat web of cover material into an endless tube which is provided with a continuous seal in the longitudinal direction of the endless tube. The endless tube is subsequently intermittently sealed in the transverse direction of the endless tube while filling the endless tube with filling material into pockets which are created between the transverse seals. Individual pouched products are severed from the filled and sealed tube of cover material and are usually packed in user containers. Sealing of the cover material may be made with any suitable method or combination of methods, such as by means of adhesive, heat sealing, ultrasonic welding, needling, etc. Heat sealing and ultrasonic welding require the cover material to contain at least a functional amount of thermoplastic material, such as thermoplastic fibres or thermoplastic binders.

[0059] Pouched products for oral use are normally sized and configured to fit comfortably and discreetly in a user's mouth between the upper or lower gum and the lip. In general, pouched products for oral use have a generally rectangular shape. Some typical shapes (length x width) of commercially available pouched products for oral use are, for instance, 35 mm x 20 mm, 34/35 mm x 14 mm, 33/34 mm x 18 mm, 27/28 mm x 14 mm, 34 mm x 10 mm and 38 x 14 mm. Typical pouched products for oral use may have a maximum length within the range of from 25 mm to 40 mm along the longitudinal direction of the product and a maximum width within the range of from 5 mm to 20 mm along the transverse direction of the product. The pre-use thickness of the pouched product is normally within the range of from 2 mm to 8 mm. The total weight of commercially available pouched products for oral use is typically within the range from about 0.3 g to about 3.5 g, such as from about 0.5 g to 1.7 g, per pouched product. The volume of a portion of filling material in a pouch may be in the range of from 0.5 cm^3 to 1.5 cm^3, depending on the size of the pouch.

[0060] A *"user container"* typically contains in the range of 10-30 pouched products, such as in the range of 20-25 pouched products. The pouched products may be placed randomly in the user container or in a pattern, for instance as described in WO 2012/069505 A1. The user container as disclosed herein is a consumer package having a shape and a size adapted for conveniently carrying the consumer package in a pocket or in a handbag and may be used for packaging any known type of pouched product for oral use. The user container may include a disposal compartment for storage of used oral pouched products. The disposal compartment is separated from the compartment in the container where the fresh oral pouched products are stored up until use.

EXAMPLES AND DESCRIPTION OF TEST METHODS

Method for determining moisture content, Loss On Drying, LOD

[0061] The moisture content as referred to herein may be determined by using a method based on literature references Federal Register/ vol.74, no. 4/712-719/Wednesday, January 7, 2009/Notices "Total moisture determination" and AOAC (Association of Official Analytical Chemics), Official Methods of Analysis 966.02: "Moisture in Tobacco" (1990), Fifth Edition, K. Helrich (ed). In this method, the moisture content is determined gravimetrically by taking 2.5±0.25 g sample and weighing the sample at ambient conditions, herein defined as being at a temperature of 22°C and a relative humidity of 60%, before evaporation of moisture and after completion of dehydration. Mettler Toledo's Moisture Analyzer HB43, a balance with halogen heating technology, is used (instead of an oven and a balance as in the mentioned literature references) in the experiments described herein. The sample is heated to 105°C (instead of 99.5±0.5°C as in the mentioned literature references). The measurement is stopped when the weight change is less than 1 mg during a 90 seconds time frame. The moisture content as weight percent of the sample is then calculated automatically by the Moisture Analyzer HB43.

Comparative Example

[0062]

Sample 1 - A filling material constituted by approximately 78% by weight of particles of microcrystalline cellulose having an average particle size of 945μm, a particle density of 1.3 g/cm^3 and a bulk density of 0.78 g/cm^3, and approximately 9% by weight of additional components based on the total weight of the filling material. The moisture content in the filling material was 13% of the total weight of the filling material.
Reference 1 - Shiro Sweet Mint supplied by AG Snus.
Reference 2 - YOYO Havana Mojito Slim supplied by Nordic Noir Holding.

Preparation of Reference samples:

[0063] Oral pouched products of Reference 1 and Reference 2 were cut up and a sufficient amount of each filling material was gathered for performing the test.

Test procedure:

[0064] The tests were performed on a *Retsch IAS 200 control* vibrating sieve with a mesh size of 250 μm.
[0065] 10 g of filling material from each of Sample 1, Reference 1 and Reference 2 was used for the test. Each sample was placed on the sieve and vibrated for 1 minute with an amplitude of 1 mm.
[0066] The weight of the upper fraction and the lower fraction was measured for each sample and the measured values are shown in Table 1.
[0067] The moisture content of each of Sample 1, Reference 1 and Reference 2 was measured according to the LOD method and the measured values are shown in Table 2.

Table 1

Result	**Weight of material >250μm**	**Weight of material <250μm**	Control = 10g
Sample 1	9.92	0.01	9.93
Reference 1	8.19	1.73	9.92
Reference 2	5.34	4.38	9.72

Table 2

Filling material	**Moisture content LOD (%)**
Sample 1	12,99

(continued)

Filling material	Moisture content LOD (%)
Reference 1	23,22
Reference 2	25,2

[0068] From Table 1 and Table 2, it can be seen that both of the reference samples Reference 1 and Reference 2 had a considerably greater proportion of smaller particles or dust than the filling material of Sample 1, despite the fact that both references had a moisture content which was almost double that of Sample 1.

[0069] The discrepancy between the initially loaded amount of 10g of filling material and the sum of the upper and lower fractions of the samples may be explained by a small amount of particles sticking to the sieve and by evaporation of volatiles. The loss of material is approximately the same for Sample 1 and Reference 1 and slightly greater for Reference 2, containing a large amount of small particles.

Claims

1. A pouched product for oral use comprising a liquid permeable cover material and a portion sized amount of a filling material comprising nicotine, the filling material comprising a particulate material, wherein the particulate material comprises water insoluble particles of microcrystalline cellulose, water insoluble starch, silica or a mixture thereof, the filling material being enclosed by the liquid permeable cover material, **characterized in that** the water insoluble particles constitute 75% by dry weight to 99% by dry weight of the filling material, the particles of the particulate material have an average particle size within the range of from 0.3 mm to 3.0 mm and the particulate material contains less than 0.5% of particles passing through a sieve having a mesh size of 250 μm, the filling material comprising one or more water soluble components.

2. A pouched product according to claim 1, wherein the filling material has a pre-use moisture content of from 1% by weight of the filling material to 35% by weight of the filling material.

3. A pouched product according to claim 1 or 2, wherein the water insoluble particles constitute 85% by dry weight to 98% by dry weight of the filling material.

4. A pouched product according to any one of the preceding claims, wherein the water insoluble particles have a particle density in the range of from 0.8 g/cm^3 to 1.7 g/cm^3.

5. A pouched product according to any one of the preceding claims, wherein the particles of the particulate material have an average particle size within the range of from 0.4 mm to 3.0 mm.

6. A pouched product according to any one of the preceding claims, wherein the water permeable outer cover material has an air permeability of from 4,500 $l/m^2/s$ to 10,000 $l/m^2/s$, when measured according to the EDANA test method WSP070.1.R3(12).

7. A pouched product according to any one of the preceding claims, wherein the water permeable outer cover material has a basis weight in the range of from 10 g/m^2 to 28 g/m^2.

8. A pouched product according to any one of the preceding claims, wherein the particles of the particulate material have an average particle size in the range of from 0.3 mm to 3 mm, preferably from 0.4 mm to 3.0 mm, in combination with a water permeable cover material having a relatively high porosity in the range of from 4,500 $l/m^2/s$ to 10,000 $l/m^2/s$, when measured according to the EDANA test method WSP070.1.R3(12).

9. A pouched product according to any one of the preceding claims, wherein the liquid permeable cover material is a nonwoven material.

10. A snuff product according to any one of the preceding claims, wherein the particles of the particulate material have a sphericity within the range of from 0.7 to 1.0, such as from 0.8 to 1.0 and a diameter of from 0.3 mm to 3 mm, such as from 0.7 mm to 3 mm.

11. A pouched product according to any one of the preceding claims, wherein nicotine is derived from a nicotine source being a nicotine base and/or being selected from the group consisting of nicotine hydrochloride, nicotine dihydrochloride, nicotine monotartrate, nicotine bitartrate, nicotine bitartrate dihydrate, nicotine sulphate, nicotine zinc chloride monohydrate and nicotine salicylate, nicotine benzoate, nicotine polacrilex and any combination thereof.

12. A pouched product according to any one of the preceding claims, wherein the filling material comprises an additive selected from the group consisting of a flavouring agent, a sweetener, a humectant, and any mixture thereof.

13. A pouched product according to claim 12, wherein the additive comprises or consists of a flavouring agent, such as a flavour oil, such as a hydrophobic flavour oil, such as a synthetic flavour, such as a nature-identical flavour.

14. A pouched product according to any one of the preceding claims, wherein the filling material is free from tobacco material.

15. A pouched product according to any one of the preceding claims, wherein at least one of the one or more water soluble components is present on an outer surface of at least some of the particles of the particulate material, such as on 20% to 100 % of the particles of the particulate material, or 50% to 100% of the particles of the particulate material, or 80% to 100% of the particles of the particulate material.

16. A pouched product according to any one of the preceding claims, wherein at least one of the one or more water soluble components is present in interstices between the particles of the particulate material.

Patentansprüche

1. Beutelartiges Produkt zur oralen Verwendung, umfassend ein flüssigkeitsdurchlässiges Abdeckmaterial und eine portionierte Menge eines Füllmaterials, umfassend Nikotin, wobei das Füllmaterial ein Partikelmaterial umfasst, wobei das Partikelmaterial wasserunlösliche Partikel aus mikrokristalliner Zellulose, wasserunlöslicher Stärke, Kieselsäure oder einer Mischung davon umfasst, wobei das Füllmaterial von dem flüssigkeitsdurchlässigen Abdeckmaterial umschlossen ist, **dadurch gekennzeichnet, dass** die wasserunlöslichen Partikel 75 % des Trockengewichts bis 99 % des Trockengewichts des Füllmaterials darstellen, die Partikel des Partikelmaterials eine durchschnittliche Partikelgröße im Bereich von 0,3 mm bis 3,0 mm aufweisen und das Partikelmaterial weniger als 0,5 % Partikel enthält, die durch ein Sieb, das eine Maschenweite von 250 μm aufweist, hindurchgehen, wobei das Füllmaterial einen oder mehrere wasserlösliche Bestandteile umfasst.

2. Beutelartiges Produkt nach Anspruch 1, wobei das Füllmaterial einen Feuchtigkeitsgehalt vor Verwendung von 1 Gewichtsprozent des Füllmaterials bis 35 Gewichtsprozent des Füllmaterials aufweist.

3. Beutelartiges Produkt nach Anspruch 1 oder 2, wobei die wasserunlöslichen Partikel 85 % des Trockengewichts bis 98 % des Trockengewichts des Füllmaterials darstellen.

4. Beutelartiges Produkt nach einem der vorstehenden Ansprüche, wobei die wasserunlöslichen Partikel eine Partikeldichte im Bereich von 0,8 g/cm^3 bis 1,7 g/cm^3 aufweisen.

5. Beutelartiges Produkt nach einem der vorstehenden Ansprüche, wobei die Partikel des Partikelmaterials eine durchschnittliche Partikelgröße im Bereich von 0,4 mm bis 3,0 mm aufweisen.

6. Beutelartiges Produkt nach einem der vorstehenden Ansprüche, wobei das wasserdurchlässige äußere Abdeckmaterial eine Luftdurchlässigkeit von 4.500 l/m^2/s bis 10.000 l/m^2/s aufweist, gemessen nach dem EDANA-Testverfahren WSP070.1.R3(12).

7. Beutelartiges Produkt nach einem der vorstehenden Ansprüche, wobei das wasserdurchlässige äußere Abdeckmaterial ein Flächengewicht im Bereich von 10 g/m^2 bis 28 g/m^2 aufweist.

8. Beutelartiges Produkt nach einem der vorstehenden Ansprüche, wobei die Partikel des Partikelmaterials eine durchschnittliche Partikelgröße im Bereich von 0,3 mm bis 3 mm, vorzugsweise von 0,4 mm bis 3,0 mm, aufweisen, in Kombination mit einem wasserdurchlässigen Abdeckmaterial, das eine relativ hohe Porosität im Bereich von 4.500 l/m^2/s bis 10.000 l/m^2/s, gemessen nach dem EDANA-Testverfahren WSP070.1.R3(12), aufweist.

9. Beutelartiges Produkt nach einem der vorstehenden Ansprüche, wobei das flüssigkeitsdurchlässige Abdeckmaterial ein Vliesmaterial ist.

10. Schnupfprodukt nach einem der vorstehenden Ansprüche, wobei die Partikel des Partikelmaterials eine Sphärizität im Bereich von 0,7 bis 1,0, wie beispielsweise von 0,8 bis 1,0, und einen Durchmesser von 0,3 mm bis 3 mm, wie beispielsweise von 0,7 mm bis 3 mm, aufweisen.

11. Beutelartiges Produkt nach einem der vorstehenden Ansprüche, wobei Nikotin von einer Nikotinquelle stammt, die eine Nikotinbase ist und/oder ausgewählt ist aus der Gruppe bestehend aus Nikotinhydrochlorid, Nikotindihydrochlorid, Nikotinmonotartrat, Nikotinbitartrat, Nikotinbitartratdihydrat, Nikotinsulfat, Nikotinzinkchloridmonohydrat und Nikotinsalicylat, Nikotinbenzoat, Nikotinpolacrilex und einer beliebigen Kombination davon.

12. Beutelartiges Produkt nach einem der vorstehenden Ansprüche, wobei das Füllmaterial einen Zusatzstoff umfasst, der ausgewählt ist aus der Gruppe bestehend aus einem Aromastoff, einem Süßstoff, einem Feuchthaltemittel und einer beliebigen Mischung davon.

13. Beutelartiges Produkt nach Anspruch 12, wobei der Zusatzstoff einen Aromastoff, wie beispielsweise ein Aromaöl, wie beispielsweise ein hydrophobes Aromaöl, wie beispielsweise ein synthetisches Aroma, wie beispielsweise ein naturidentisches Aroma, umfasst oder daraus besteht.

14. Beutelartiges Produkt nach einem der vorstehenden Ansprüche, wobei das Füllmaterial frei von Tabakmaterial ist.

15. Beutelartiges Produkt nach einem der vorstehenden Ansprüche, wobei mindestens einer des einen oder der mehreren wasserlöslichen Bestandteile auf einer Außenfläche von mindestens einigen der Partikel des Partikelmaterials vorhanden ist, wie beispielsweise auf 20 % bis 100 % der Partikel des Partikelmaterials oder 50 % bis 100 % der Partikel des Partikelmaterials oder 80 % bis 100 % der Partikel des Partikelmaterials.

16. Beutelartiges Produkt nach einem der vorstehenden Ansprüche, wobei mindestens einer des einen oder der mehreren wasserlöslichen Bestandteile in Zwischenräumen zwischen den Partikeln des Partikelmaterials vorhanden ist.

Revendications

1. Produit en sachet à usage oral comprenant un matériau de protection perméable aux liquides et une quantité en portion d'un matériau de remplissage comprenant de la nicotine, le matériau de remplissage comprenant un matériau à particules, dans lequel le matériau à particules comprend des particules insolubles dans l'eau de cellulose microcristalline, de l'amidon insoluble dans l'eau, de la silice ou un mélange de ceux-ci, le matériau de remplissage étant entouré par le matériau de protection perméable aux liquides, **caractérisé en ce que** les particules insolubles dans l'eau constituent 75 % en poids sec à 99 % en poids sec du matériau de remplissage, les particules du matériau à particules présentent une taille moyenne de particules dans la plage de 0,3 mm à 3,0 mm et le matériau à particules contient moins de 0,5 % de particules passant à travers un tamis présentant une ouverture de maille de 250 μm, le matériau de remplissage comprenant un ou plusieurs composants solubles dans l'eau.

2. Produit en sachet selon la revendication 1, dans lequel le matériau de remplissage présente une teneur en humidité avant utilisation allant de 1 % en poids du matériau de remplissage à 35 % en poids du matériau de remplissage.

3. Produit en sachet selon la revendication 1 ou la revendication 2, dans lequel les particules insolubles dans l'eau constituent 85 % en poids sec à 98 % en poids sec du matériau de remplissage.

4. Produit en sachet selon l'une quelconque des revendications précédentes, dans lequel les particules insolubles dans l'eau présentent une densité de particules dans la plage de 0,8 g/cm^3 à 1,7 g/cm^3.

5. Produit en sachet selon l'une quelconque des revendications précédentes, dans lequel les particules du matériau à particules présentent une taille moyenne de particules dans la plage de 0,4 mm à 3,0 mm.

6. Produit en sachet selon l'une quelconque des revendications précédentes, dans lequel le matériau de protection extérieur perméable à l'eau présente une perméabilité à l'air de 4500 l/m^2/s à 10 000 l/m^2/s, telle que mesurée conformément à la méthode d'essai EDANA WSP070.1.R3(12).

7. Produit en sachet selon l'une quelconque des revendications précédentes, dans lequel le matériau de protection extérieur perméable à l'eau présente un poids de base dans la plage de 10 g/m^2 à 28 g/m^2.

8. Produit en sachet selon l'une quelconque des revendications précédentes, dans lequel les particules du matériau à particules présentent une taille moyenne de particules dans la plage de 0,3 mm à 3 mm, de préférence de 0,4 mm à 3,0 mm, en combinaison avec un matériau de protection perméable à l'eau présentant une porosité relativement élevée dans la plage de 4500 l/m^2/s à 10 000 l/m^2/s, telle que mesurée conformément à la méthode d'essai EDANA WSP070.1.R3(12).

9. Produit en sachet selon l'une quelconque des revendications précédentes, dans lequel le matériau de protection perméable aux liquides est un matériau non-tissé.

10. Produit à priser selon l'une quelconque des revendications précédentes, dans lequel les particules du matériau à particules présentent une sphéricité dans la plage de 0,7 à 1,0, telle que de 0,8 à 1,0 et un diamètre de 0,3 mm à 3 mm, tel que de 0,7 mm à 3 mm.

11. Produit en sachet selon l'une quelconque des revendications précédentes, dans lequel la nicotine est dérivée d'une source de nicotine qui est une base de nicotine et/ou qui est sélectionnée parmi le groupe constitué de chlorhydrate de nicotine, dichlorhydrate de nicotine, monotartrate de nicotine, bitartrate de nicotine, bitartrate de nicotine dihydraté, sulfate de nicotine, chlorure de zinc de nicotine monohydraté et salicylate de nicotine, benzoate de nicotine, polacrilex de nicotine et une combinaison quelconque de ceux-ci.

12. Produit en sachet selon l'une quelconque des revendications précédentes, dans lequel le matériau de remplissage comprend un additif sélectionné parmi le groupe constitué d'un agent aromatisant, d'un édulcorant, d'un humectant et d'un mélange quelconque de ceux-ci.

13. Produit en sachet selon la revendication 12, dans lequel l'additif comprend ou consiste en un agent aromatisant, telle qu'une huile aromatisée, telle qu'une huile aromatisée hydrophobe, tel qu'un arôme artificiel, tel qu'un arôme identique à la nature.

14. Produit en sachet selon l'une quelconque des revendications précédentes, dans lequel le matériau de remplissage est exempt de matériau de tabac.

15. Produit en sachet selon l'une quelconque des revendications précédentes, dans lequel au moins un des un ou plusieurs composants solubles dans l'eau est présent sur une surface extérieure d'au moins certaines des particules du matériau à particules, tel que sur 20 % à 100 % des particules du matériau à particules, ou 50 % à 100 % des particules du matériau à particules, ou 80 % à 100 % des particules du matériau à particules.

16. Produit en sachet selon l'une quelconque des revendications précédentes, dans lequel au moins un des un ou plusieurs composants solubles dans l'eau est présent dans des interstices entre les particules du matériau à particules.

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- WO 2017153718 A1 **[0008]**
- WO 2010104464 A1 **[0009]**
- US 2011083680 A1 **[0010]**
- US 2008308115 A1 **[0011]**
- US 2010300464 A1 **[0011]**
- US 2010300465 A1 **[0011]**
- EP 2730181 A1 **[0012]**
- WO 2016090075 A1 **[0013]**
- WO 2009010884 A2 **[0014]**
- WO 2007037962 A1 **[0015]**
- WO 2012069505 A1 **[0060]**

Non-patent literature cited in the description

- Total moisture determination. *Federal Register,* 07 January 2009, vol. 74 (4), 712-719 **[0061]**
- Moisture in Tobacco. Official Methods of Analysis. AOAC (Association of Official Analytical Chemics), 1990, vol. 966, 02 **[0061]**