

(19)



(11)

EP 3 351 121 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

25.07.2018 Bulletin 2018/30

(51) Int Cl.:

A24B 15/00 (2006.01)

A24F 1/30 (2006.01)

A24B 15/16 (2006.01)

(21) Application number: **17154835.7**

(22) Date of filing: **06.02.2017**

(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**

Designated Extension States:

BA ME

Designated Validation States:

MA MD

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(30) Priority: **18.01.2017 US 201715409194**

(54) **TOBACCO FREE HOOKAH SMOKING GEL**

(57) A tobacco-free absorbent dry gel that delivers flavored smoke and/or nicotine when heated or burned is disclosed. The dry gel formulation includes a binder compound to which flavors and/or nicotine can be added. The dry gel is suitable for use in a hookah smoking apparatus.

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Description

BACKGROUND

[0001] Hookahs have been used to smoke tobacco for at least four centuries. Hookah terminology varies upon region. Hookahs can be referred to as a waterpipe, huqqa or huqqa, argilah or argileh, lula or lulava, shisha or shee-sha, narguile or nargile, qalyan, mada'a, chillim, jajeer, guduguda, hitboo, marra pipe, or cachimba. Hookahs come in various colors, materials, shapes, and sizes.

[0002] The basic hookah apparatus includes a head or bowl that holds the charcoal and tobacco during the smoking session, a body, a water bowl, a hose, and a mouth piece. A hookah apparatus also can include a windscreen that covers the bowl area, a purge valve, a plate or ashtray to catch ashes falling from the coals, grommets for sealing joints between the connected parts of the hookah apparatus, a diffuser, and consumable items, such as coal or charcoal, flavored hookah tobacco or mu'assel, and non-tobacco based mu'assel.

[0003] Traditionally, tobacco has been the smoking material of choice for hookahs. The types of tobacco used, as well as casings and flavors added, can vary. Generally, hookah tobacco is highly flavored. When tobacco is smoked in a hookah, however, the smoker is subjected to a number of potentially unhealthy components that are inherent to tobacco-based products.

[0004] The consumption of tobacco-based products, such as cigarettes, has been decreasing in recent years due to the increased awareness of the health risks associated with tobacco use. Accordingly, alternatives to tobacco are of interest to consumers. As an example, electronic cigarettes have been shown to be a viable alternative for nicotine delivery, as well as a way for tobacco consumers to quit their tobacco smoking habit.

[0005] Non-tobacco based smoking materials also are available for hookahs including, but not limited to, fruit-based shisha, herbal shisha, tea-based herbal shisha, nicotine-free herbal molasses, tobacco- and nicotine-free vapor or steam stones, and shisha gels. Fruit-based shisha and shisha gels, however, are very moist and, as a result, are difficult for the hookah smoker to manipulate in the smoking apparatus.

SUMMARY

[0006] The presently disclosed subject matter provides a tobacco-free hookah smoking gel. In particular aspects, the tobacco-free hookah smoking gel comprises a dry gel flavor formulation comprising: (a) from about 55% to about 99% of a syrup comprising from about 1% to about 99% of one or more humectants and from about 1% to about 99% of at least one source of sugar; (b) from about 1.0% to about 45% of one or more flavors; and (c) from about 5.0% to about 60% wt/wt of one or more binder agents relative to the wt of the syrup comprising the one or more flavors.

[0007] In some aspects, the presently disclosed dry gel flavor formulation further comprises nicotine or a tobacco extract. In yet other aspects, the dry gel flavor further comprises a salt, for example, sodium chloride. In further aspects, the dry gel flavor further comprises one or more preservatives. In yet other aspects, the dry gel flavor formulation comprises one or more coloring agents or dyes. In other aspects, the dry gel flavor formulation further comprises one or more bleaching agents.

[0008] In particular aspects, the presently disclosed subject matter provides a dry gel flavor formulation comprising: (a) from about 55% to about 99% of a syrup comprising from about 1% to about 99% of one or more humectants and from about 1% to about 99% of at least one source of sugar; (b) from about 1.0% to about 45% of one or more flavors; (c) from about 5.0% to about 60% wt/wt of one or more binder agents relative to the wt of the syrup comprising the one or more flavors; (d) optionally from about 0.5% to about 2.0% wt/wt of one or more preservatives; (e) optionally from about 0.01% to about 10.0% wt/wt of one or more ingredients selected from the group consisting of a dye, a coloring agent, a preservative, and combinations thereof; and (f) optionally one or more of nicotine, a nicotine salt, a nicotine solution, and a tobacco extract.

[0009] In other aspects, the presently disclosed subject matter provides a method for preparing a dry gel flavor composition, the method comprising: (a) preparing a syrup by mixing 1% to about 99% of one or more humectants and from about 1% to about 99% of at least one source of sugar; (b) adding from about 1.0% to about 45% of one or more flavors to the syrup with stirring to form a flavored syrup; (c) adding from about 5.0% to about 60% wt/wt of one or more binder agents to the flavored syrup with stirring to form a viscous material; (d) adding water to the viscous material with stirring; and (e) placing the viscous material in a mold for a period of time at about 5 °C. The material can then be cut into fine pieces and used as a tobacco-free hookah smoking gel.

[0010] Certain aspects of the presently disclosed subject matter having been stated hereinabove, which are addressed in whole or in part by the presently disclosed subject matter, other aspects will become evident as the description proceeds when taken in connection with the accompanying Examples as best described herein below.

DETAILED DESCRIPTION

[0011] The presently disclosed subject matter may be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will satisfy applicable legal requirements. Indeed, many modifications and other embodiments of the presently disclosed subject matter set forth herein will come to mind to one skilled in the art to which the presently disclosed subject matter pertains having the benefit of

the teachings presented in the foregoing descriptions. Therefore, it is to be understood that the presently disclosed subject matter is not to be limited to the specific embodiments disclosed and that modifications and other embodiments are intended to be included within the scope of the appended claims.

I. TOBACCO FREE HOOKAH SMOKING GEL

[0012]

A. Representative Embodiments of the Presently Disclosed Tobacco Free Hookah Smoking Gel. It is an object of the presently disclosed subject matter to provide a smoking material that allows hookah smokers to mimic the experience they have with tobacco, but with an alternative tobacco-free gel product. Accordingly, the presently disclosed subject matter provides a hookah smoking gel that is tobacco free while delivering a good flavor and smoking experience. Other tobacco-free hookah smoking materials already exist in the market, such as fruit-based smoking materials (e.g., pieces of fruit soaked with molasses and flavors) and wet gel products (e.g., gel capsules soaked in syrup). One advantage of the presently disclosed tobacco-free smoking gel is that it is completely dry, making it easier for the end user to manipulate it in the hookah smoking apparatus.

[0013] In some embodiments, the presently disclosed tobacco-free smoking gel formulation comprises a combination of binders, humectants, and flavor agents. In certain embodiments, the formulation further comprises nicotine.

[0014] Accordingly, the presently disclosed subject matter provides a dry gel flavor formulation comprising: (a) from about 55% to about 99% of a syrup comprising from about 1% to about 99% of one or more humectants, including from about 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, and 99% or one or more humectants, and from about 1% to about 99% of at least one source of sugar, including from about 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, and 99% of at least one source of sugar; (b) from about 1.0% to about 45% of one or more flavors, including from about 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30,

31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45% of one or more flavors; and (c) from about 5.0% to about 60% wt/wt, including 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45% wt/wt, of one or more binder agents relative to the wt of the syrup comprising the one or more flavors.

[0015] In some embodiments, the one or more humectants is selected from the group consisting of glycerol, propylene glycol, triacetin, a glucose ester, a sucrose ester, an ethyl ester of lactic acid, sorbitol, mannitol, magnesium sulfate, polydextrose, invert sugar, and combinations thereof.

[0016] In some embodiments, the at least one source of sugar is selected from the group consisting of honey, molasses, corn syrup, invert sugar, maple syrup, sucrose, glucose, and combinations thereof.

[0017] In some embodiments, the one or more binder agents is selected from the group consisting of poly(lactic) acid, poly(malic) acid, starch, and non-starch hydrocolloids.

[0018] In some embodiments, the non-starch hydrocolloids are selected from the group consisting of acacia gum, gum Arabic, xanthan gum, guar gum, taar gum, carob (LBG), pectins, jellies, agar-agar, alginates, cartagenanas, carboxymethylcellulose (CMC), hydroxypropylcellulose (HPC), microcrystalline cellulose (MCC), and combinations thereof.

[0019] In some embodiments, the starch is selected from the group consisting of starches, modified starches, maize, wheat, rice, manioc, and combinations thereof.

[0020] In some embodiments, the dry gel flavor formulation further comprises nicotine. In certain embodiments, the nicotine is selected from the group consisting of natural nicotine, synthetic nicotine, and solutions or salts thereof.

[0021] In some embodiments, the dry gel flavor formulation further comprises one or more tobacco extracts. In certain embodiments, the one or more tobacco extracts are selected from the group consisting of Arapiraca tobacco, Oriental tobacco, Turkish tobacco, Virginia tobacco, Bright Leaf tobacco, and combinations thereof.

[0022] In some embodiments, the dry gel flavor formulation further comprises a salt. In certain embodiments, the salt comprises sodium chloride.

[0023] In some embodiments, the dry gel flavor formulation further comprises one or more preservatives. In certain embodiments, the one or more preservatives is selected from the group consisting of propionic acid, propionates, potassium sorbate, lactic acid, acetic acid, citric acid, sodium benzoate, parabens, and combinations thereof.

[0024] In some embodiments, the dry gel flavor formulation further comprises one or more coloring agents. In other embodiments, the dry gel flavor formulation further comprises one or more dyes. In yet other embodiments, the dry gel flavor formulation further comprises one or more bleaching agents.

[0025] In yet other embodiments, the presently disclosed dry gel flavor formulation comprises: (a) from about 55% to about 99% of a syrup comprising from about 1% to about 99% of one or more humectants and from about 1% to about 99% of at least one source of sugar; (b) from about 1.0% to about 45% of one or more flavors; (c) from about 5.0% to about 60% wt/wt of one or more binder agents relative to the wt of the syrup comprising the one or more flavors; (d) optionally from about 0.5% to about 2.0% wt/wt of one or more preservatives, including from about 0.5, 1.0, 1.5, and 2.0% wt/wt of one or more preservatives; (e) optionally from about 0.01% to about 10.0% wt/wt of one or more ingredients selected from the group consisting of a dye, a coloring agent, a preservative, and combinations thereof, including from about 0.01, 0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10% wt/wt of one or more ingredients selected from the group consisting of a dye, a coloring agent, a preservative, and combinations thereof; and (f) optionally one or more of nicotine, a nicotine salt, a nicotine solution, and a tobacco extract.

[0026] In some embodiments, the presently disclosed dry gel flavor formulation comprises a tobacco substitute for use in a Hookah apparatus.

B. Methods of Preparing the Presently Disclosed Tobacco-Free Smoking Gel

[0027] In some embodiments, the presently disclosed tobacco-free smoking gel can be prepared as follows:

The first step is the preparation of a syrup to be used to disperse the flavorings and/or nicotine in the proper concentration. The syrup is a mixture of humectant agents (from about 1% to about 99%, including 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, and 99% humectant agents) and a source of sugar (from about 1% to about 99%, including 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, and 99% source of sugar). Humectants play a key role in the presently disclosed formulation, since they are used not only to keep the residual humidity in the system, but also because the final dry gel material will benefit from their known capacity to act as plasticizers.

[0028] The mixture of the humectant and the source

of sugar are stirred for about 5 minutes to about 50 minutes with a mechanical stirrer at from about 100 rpm to about 1,500 rpm speed, depending on the volume that is being prepared. For example, when preparing a volume of about 100 mL of syrup, components are added in the desired concentration and stirred using a low speed rate, but when the volume reaches about 10L, the speed must be increased. In most cases, the mixture is made at room temperature, e.g., between about 10 °C to about 25 °C, including 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, and 25 °C.

[0029] The second step comprises the addition of flavors and/or nicotine to the syrup. Once the syrup is ready, the flavor (or aroma) is added to the syrup and stirred at room temperature for about 5 minutes using a mechanical stirrer (speed of about 100 rpm to about 1,500 rpm depending on the volume that is being prepared).

[0030] The flavor(s) and syrup concentrations may vary as follows: syrup (about 55% to about 99%, including about 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, and 99% syrup) and flavor(s) (about 1.0% to about 45%, including 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45% flavor(s)). Different types of flavors can be added to the syrup. In general, these flavors are complex mixtures of flavor chemicals and/or natural ingredients.

[0031] The addition of nicotine to the gel may be performed by adding pure nicotine (natural or synthetic), its solutions or salts. As an alternative, extracts of different types of tobacco, such as: Arapiraca, Oriental tobacco (Turkish tobacco), Virginia tobacco (Bright Leaf tobacco), and the like, also can be used in place of or together with nicotine. The same procedure used for the addition of flavor(s) can be followed for the addition of nicotine.

[0032] The third step is the formation of the gel product. Different binder agents, as disclosed hereinabove, can be used in this step. The binder is added at a ratio of about 5.0% to about 60.0 % mass/mass over the weight of the flavored (with or without nicotine) syrup, including from about 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60% mass/mass. The viscosity control can be improved by the use of a salt, such as sodium chloride.

[0033] In other embodiments, preservatives, as disclosed hereinabove, can be added at a concentration of about 0.5% to about 2.0% mass/mass, including about 0.5, 1.0, 1.5, and 2.0% mass/mass. In further embodiments, dyes and/or bleaching agents also can be present in a concentration between about 0.01% to about 10.0% mass/mass, including about 0.01, 0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10% mass/mass. The binder agent and/or other auxiliaries (such as preservatives and coloring agents) are added to the flavored syrup

solution under continuous stirring, kept for between about 5 to about 50 minutes (mechanical stirrer at a speed of about 1,000 rpm to about 3,000 rpm depending on the volume that is being prepared).

[0034] Accordingly, the presently disclosed subject matter provides method for preparing a dry gel flavor composition, the method comprising: (a) preparing a syrup by mixing 1% to about 99% of one or more humectants and from about 1% to about 99% of at least one source of sugar; (b) adding from about 1.0% to about 45% of one or more flavors to the syrup with stirring to form a flavored syrup; (c) adding from about 5.0% to about 60% wt/wt of one or more binder agents to the flavored syrup with stirring to form a viscous material; (d) adding water to the viscous material with stirring; and (e) placing the viscous material in a mold for a period of time at about 5 °C. The molded material can then be cut into fine pieces for use as a tobacco substitute in a hookah apparatus.

[0035] Following long-standing patent law convention, the terms "a," "an," and "the" refer to "one or more" when used in this application, including the claims. Thus, for example, reference to "a subject" includes a plurality of subjects, unless the context clearly is to the contrary (e.g., a plurality of subjects), and so forth.

[0036] Throughout this specification and the claims, the terms "comprise," "comprises," and "comprising" are used in a non-exclusive sense, except where the context requires otherwise. Likewise, the term "include" and its grammatical variants are intended to be non-limiting, such that recitation of items in a list is not to the exclusion of other like items that can be substituted or added to the listed items.

[0037] For the purposes of this specification and appended claims, unless otherwise indicated, all numbers expressing amounts, sizes, dimensions, proportions, shapes, formulations, parameters, percentages, quantities, characteristics, and other numerical values used in the specification and claims, are to be understood as being modified in all instances by the term "about" even though the term "about" may not expressly appear with the value, amount or range. Accordingly, unless indicated to the contrary, the numerical parameters set forth in the following specification and attached claims are not and need not be exact, but may be approximate and/or larger or smaller as desired, reflecting tolerances, conversion factors, rounding off, measurement error and the like, and other factors known to those of skill in the art depending on the desired properties sought to be obtained by the presently disclosed subject matter. For example, the term "about," when referring to a value can be meant to encompass variations of, in some embodiments, $\pm 100\%$ in some embodiments $\pm 50\%$, in some embodiments $\pm 20\%$, in some embodiments $\pm 10\%$, in some embodiments $\pm 5\%$, in some embodiments $\pm 1\%$, in some embodiments $\pm 0.5\%$, and in some embodiments $\pm 0.1\%$ from the specified amount, as such variations are appropriate to perform the disclosed methods or employ the disclosed compositions.

[0038] Further, the term "about" when used in connection with one or more numbers or numerical ranges, should be understood to refer to all such numbers, including all numbers in a range and modifies that range by extending the boundaries above and below the numerical values set forth. The recitation of numerical ranges by endpoints includes all numbers, e.g., whole integers, including fractions thereof, subsumed within that range (for example, the recitation of 1 to 5 includes 1, 2, 3, 4, and 5, as well as fractions thereof, e.g., 1.5, 2.25, 3.75, 4.1, and the like) and any range within that range.

EXAMPLES

[0039] The following Examples have been included to provide guidance to one of ordinary skill in the art for practicing representative embodiments of the presently disclosed subject matter. In light of the present disclosure and the general level of skill in the art, those of skill can appreciate that the following Examples are intended to be exemplary only and that numerous changes, modifications, and alterations can be employed without departing from the scope of the presently disclosed subject matter. The synthetic descriptions and specific examples that follow are only intended for the purposes of illustration, and are not to be construed as limiting in any manner to make compounds of the disclosure by other methods.

EXAMPLE 1

Preparation of a Gel Material with a Star Fruit Refreshing Flavor, Without Nicotine, for Use as Tobacco Substitute in Hookahs

[0040] 10.0 grams of syrup (50% of glycerin and 50% of invert sugar) was mixed in a 100.0 mL beaker. 0.10 grams of peppermint flavor, 2.0 grams of star fruit flavor and 0.20 grams of ethyl maltol/ethyl vanillin 10% solution in propylene glycol were added to the syrup. The solution was stirred for 15 minutes at 300 rpm. After stirring, 3.0 grams of xanthan gum was added to it. The product was stirred for another 5 minutes at 1,000 rpm. The solution became viscous. To obtain a product with solid characteristics, 3.0 gram of water was added and the solution was stirred for 5 minutes at 1,000 rpm. After stirring, the gel material was placed in a mold and left for 24 hours at 5 °C.

[0041] After 24 hours, a star fruit slightly refreshing flavored gel material was obtained. The product with characteristics of a dry gel also was cut in fine pieces and used as a substitute of tobacco in hookahs.

EXAMPLE 2

Preparation of a Slightly Refreshing "Cupuaçu" Flavored Gel with Nicotine (0.5% Nicotine Concentration) For Use in Hookahs

[0042] 10.0 grams of syrup (propylene glycol 60% and cane sugar molasses 40%) was added to a 100.0 mL beaker. 0.10 grams of peppermint flavor, 2.0 grams of "cupuaçu" flavor, 0.20 grams of a 10% methylcyclopentenolone solution in PG and 5.0 grams of 10% nicotine solution in glycerin were added to this beaker. The solution was stirred for 20 minutes at 300 rpm. After stirring, 4.2 grams of guar gum was added to the beaker and stirring continued for another 20 minutes at 500 rpm. The solution became viscous. 6.0 gram of water was added and stirred for 5 minutes at 1,000 rpm. After stirring, the dry gel material was cut in fine pieces and used as a substitute of tobacco in hookahs.

EXAMPLE 3

Preparation of "Açai" Flavored Gel with Nicotine using Tobacco Extract for Use in Hookahs

[0043] 10.0 grams of syrup (propylene glycol 40% and cane sugar molasses 60%) was added to a 100.0 mL beaker. 2.0 grams of "açai" flavor, 0.20 grams of 10% vanillin solution in propylene glycol and 3.0 grams of Oriental tobacco extract solution (50% in propylene glycol) were added to this beaker. The solution was stirred for 5 minutes at 300 rpm. After stirring, 5.0 grams of carboxymethylcellulose was added to the beaker and stirring continued for another 5 minutes at 500 rpm. The solution became viscous. 1.0 gram of water was added to the beaker and the solution was stirred for 5 minutes at 1,000 rpm. After 24 hours, the "açai" flavored material with nicotine (naturally obtained from the Oriental tobacco extract) was obtained. The product with characteristics of a solid dry gel was cut in fine pieces and used as a tobacco substitute in hookahs.

EXAMPLE 4

Preparation of Grape Flavored Transparent Gel for use in Hookahs

[0044] 10.0 grams of syrup (propylene glycol 44% and sucrose 56% solution, made at 60°C) was added to a 100.0 mL beaker. 0.5 grams of agar-agar was added to the beaker and kept under stirring (1,000 rpm) at 60°C for 35 minutes. The solution was let to cool down to 40°C and 0.10-0.15 grams of grape flavor were added to the solution which was stirred at 1,000 rpm for 10 minutes. After cooling to room temperature, a clear dry gel product was obtained. It was cut into a droplet shape and a small square shape, and used as a tobacco substitute in hookahs.

REFERENCES

[0045] All publications, patent applications, patents, and other references mentioned in the specification are indicative of the level of those skilled in the art to which the presently disclosed subject matter pertains. All publications, patent applications, patents, and other references are herein incorporated by reference to the same extent as if each individual publication, patent application, patent, and other reference was specifically and individually indicated to be incorporated by reference. It will be understood that, although a number of patent applications, patents, and other references are referred to herein, such reference does not constitute an admission that any of these documents forms part of the common general knowledge in the art.

U.S. Patent No. 7,836,896 for "Tobacco-Less Smoking Material," to Nadimi et al., issued November 23, 2010;

U.S. Patent Application Publication No. 2014/0069446 A1 for "Tobacco Free Hookah Smoking System," to Haddad, published March 13, 2014; U.S. Patent Application Publication No. 2011/0048438 A1 for "Tea Based Smoking Product," to Masri, published March 3, 2011;

DE102009060449A1 for Composition for Material Utilized as Smoking Material for Hookah, to Pertz, published June 30, 2011;

WO2012060784 for "Vegital Water Pipe (Nargile) Molasses with No Tobacco and Nicotine," to Gunay, et al., published May 10, 2012;

IN02476MUM2013 A for "Process for Preparing Flavour for Smoking in Hookah," to Rangoonwala;

U.S. Patent Application Publication No. US20160255875 for "Method of Preparation the Smoking Composition without Tobacco for the Hookah," to Churakov et al., published September 8, 2016;

IN00405DEL2015A

WO2016046208 for "Tobacco Substitute, Use and Method for Production Thereof," to Rath, et al., published March 31, 2016;

EP2957183 A1 for "Tobacco Material, Tobacco Product to Which Tobacco Material is Added, and Method for Producing Tobacco Material," to Chida et al., published December 23, 2015;

IN00592MU2005 for "A Novel Smoking Composition," to Fazlani.

[0046] Although the foregoing subject matter has been described in some detail by way of illustration and example for purposes of clarity of understanding, it will be understood by those skilled in the art that certain changes and modifications can be practiced within the scope of the appended claims.

Claims**1.** A dry gel flavor formulation comprising:

(a) from about 55% to about 99% of a syrup comprising from about 1% to about 99% of one or more humectants and from about 1% to about 99% of at least one source of sugar;

(b) from about 1.0% to about 45% of one or more flavors; and

(c) from about 5.0% to about 60% wt/wt of one or more binder agents relative to the wt of the syrup comprising the one or more flavors.

2. The dry gel flavor formulation of claim 1, wherein the one or more humectants is selected from the group consisting of glycerol, propylene glycol, triacetin, a glucose ester, a sucrose ester, an ethyl ester of lactic acid, sorbitol, mannitol, magnesium sulfate, polydextrose, invert sugar, and combinations thereof.**3.** The dry gel flavor formulation of claim 1 or claim 2, wherein the at least one source of sugar is selected from the group consisting of honey, molasses, corn syrup, invert sugar, maple syrup, sucrose, glucose, and combinations thereof.**4.** The dry gel flavor formulation of any preceding claim, wherein the one or more binder agents is selected from the group consisting of poly(lactic) acid, poly(malic) acid, starch, and non-starch hydrocolloids.**5.** The dry gel flavor formulation of claim 4, wherein the non-starch hydrocolloids are selected from the group consisting of acacia gum, gum Arabic, xanthan gum, guar gum, taar gum, carob (LBG), pectins, jellies, agar-agar, alginates, cartagenanas, carboxymethylcellulose (CMC), hydroxypropylcellulose (HPC), microcrystalline cellulose (MCC), and combinations thereof.**6.** The dry gel flavor formulation of claim 4, wherein the starch is selected from the group consisting of starches, modified starches, maize, wheat, rice, manioc, and combinations thereof.**7.** The dry gel flavor formulation of any preceding claim, further comprising nicotine.**8.** The dry gel flavor formulation of claim 7, wherein the nicotine is selected from the group consisting of natural nicotine, synthetic nicotine, and solutions or salts thereof.**9.** The dry gel flavor formulation of any preceding claim, further comprising one or more tobacco extracts.**10.** The dry gel flavor formulation of claim 9, wherein the

one or more tobacco extracts are selected from the group consisting of Arapiraca tobacco, Oriental tobacco, Turkish tobacco, Virginia tobacco, Bright Leaf tobacco, and combinations thereof.

11. The dry gel flavor formulation of any preceding claim, further comprising a salt.**12.** The dry gel flavor formulation of claim 11, wherein the salt comprises sodium chloride.**13.** The dry gel flavor formulation of any preceding claim, further comprising one or more preservatives.**14.** The dry gel flavor formulation of claim 13, wherein the one or more preservatives is selected from the group consisting of propionic acid, propionates, potassium sorbate, lactic acid, acetic acid, citric acid, sodium benzoate, parabens, and combinations thereof.**15.** The dry gel flavor formulation of any preceding claim, further comprising one or more coloring agents.**16.** The dry gel flavor formulation of any preceding claim, further comprising one or more dyes.**17.** The dry gel flavor formulation of any preceding claim, further comprising one or more bleaching agents.**18.** A dry gel flavor formulation comprising:

(a) from about 55% to about 99% of a syrup comprising from about 1% to about 99% of one or more humectants and from about 1% to about 99% of at least one source of sugar;

(b) from about 1.0% to about 45% of one or more flavors;

(c) from about 5.0% to about 60% wt/wt of one or more binder agents relative to the wt of the syrup comprising the one or more flavors;

(d) optionally from about 0.5% to about 2.0% wt/wt of one or more preservatives;

(e) optionally from about 0.01 % to about 10.0% wt/wt of one or more ingredients selected from the group consisting of a dye, a coloring agent, a preservative, and combinations thereof; and

(f) optionally one or more of nicotine, a nicotine salt, a nicotine solution, and a tobacco extract.

19. A tobacco substitute for use in a Hookah apparatus comprising the dry gel flavor formulation of any of claims 1 to 18.**20.** A method for preparing a dry gel flavor composition, the method comprising:

(a) preparing a syrup by mixing 1% to about 99%

of one or more humectants and from about 1% to about 99% of at least one source of sugar;
(b) adding from about 1.0% to about 45% of one or more flavors to the syrup with stirring to form a flavored syrup;
(c) adding from about 5.0% to about 60% wt/wt of one or more binder agents to the flavored syrup with stirring to form a viscous material;
(d) adding water to the viscous material with stirring; and
(e) placing the viscous material in a mold for a period of time at about 5 °C.

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**PARTIAL EUROPEAN SEARCH REPORT**

Application Number

under Rule 62a and/or 63 of the European Patent Convention.
This report shall be considered, for the purposes of
subsequent proceedings, as the European search report

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DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2009/133703 A1 (STRICKLAND JAMES A [US] ET AL) 28 May 2009 (2009-05-28) * paragraph [0048] - paragraph [0060]; examples L-M * * paragraph [0200] - paragraph [0227] * -----	1-20	INV. A24B15/00 A24F1/30 A24B15/16
X	US 5 845 649 A (SAITO YUTAKA [JP] ET AL) 8 December 1998 (1998-12-08) * claims 8,15; example 5 * -----	1,2,5,18	
A	EP 0 509 657 A1 (PHILIP MORRIS [US]) 21 October 1992 (1992-10-21) * column 9, line 16 - column 11, line 11; claim 1; examples 1-3 * -----	1-20	
A	WO 2016/133109 A1 (JAPAN TOBACCO INC [JP]) 25 August 2016 (2016-08-25) * claim 1 * -----	1-20	
A	DE 20 2016 005592 U1 (BOSCHHEINEN URSULA [DE]; MÜLLER HERMANN [DE]) 10 November 2016 (2016-11-10) * paragraph [0005] - paragraph [0007]; claims 1,3 * -----	1-20	
-/--			TECHNICAL FIELDS SEARCHED (IPC)
			A24B A24F

INCOMPLETE SEARCH

The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC so that only a partial search (R.62a, 63) has been carried out.

Claims searched completely :

Claims searched incompletely :

Claims not searched :

Reason for the limitation of the search:

see sheet C

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EPO FORM 1503 03.82 (P04E07)

Place of search	Date of completion of the search	Examiner
The Hague	15 September 2017	Villányi Kelemen, K
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document		



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DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	US 2014/224266 A1 (KARDACHIAN HRATCH A [US]) 14 August 2014 (2014-08-14) * paragraph [0015]; figures 1-2 *	1-20	
A	Anonymous: "Esolid, the gel/paste eliquid concentrate is back again E-Cigarette Forum", 9 April 2013 (2013-04-09), XP055391611, Retrieved from the Internet: URL:https://www.e-cigarette-forum.com/forum/threads/esolid-the-gel-paste-eliquid-concentrate-is-back-again.402858/ [retrieved on 2017-07-18] * page 3 - page 4 *	1-20	
A	EP 0 500 658 B1 (DAM ANDERS [DK]) 26 January 1994 (1994-01-26) * all examples; page 7, line 5 - line 17; claims 1,3,7,13 *	1-20	TECHNICAL FIELDS SEARCHED (IPC)

EPO FORM 1503 03.82 (P04C10) 3



INCOMPLETE SEARCH SHEET C

Application Number

EP 17 15 4835

Claim(s) searched incompletely:
1-20

Reason for the limitation of the search:

The initial phase of the search revealed a very large number of documents relevant to the issue of novelty. So many documents were retrieved that it was impossible to determine which parts of claims 1-15 may be said to define subject-matter for which protection might legitimately be sought (Article 84 EPC). For these reasons, a meaningful search of the whole claimed subject-matter of claims 1-15 could not be carried out (Rule 63 EPC).

Ingredients listed in claim 1 are typical ingredients of food stuff, also the amounts are routinely applied in food stuff or tobacco products. Especially, because the syrup requires only a minimum of about 1wt% of sugar source and minimum of about 1wt% of humectant to be present. The term "dry gel" as well as "flavor formulation" used in claim 1 is vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers, since these do not have any well established meaning in the art. Thereby rendering the definition of the subject-matter of said claim unclear (Article 84 EPC).

Further, sugar itself can be considered a flavour material. In its broadest sense any kind of sugar or sweetener is considered a flavour. The term "sugar source" used in claim 1 is vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter of said claim unclear (Article 84 EPC).

The addition of nicotine or tobacco extracts is also known on the food field and common on the tobacco field.

In line with the reply of the applicant on the Invitation pursuant to Rule 63(1) the search has been restricted to tobacco products and tobacco substitutes.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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25

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35

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2009133703 A1	28-05-2009	AU 2004289248 A1	26-05-2005
		BR PI0415741 A	19-12-2006
		CN 102669810 A	19-09-2012
		CN 104397869 A	11-03-2015
		EP 1691631 A2	23-08-2006
		HK 1175963 A1	11-09-2015
		JP 4931596 B2	16-05-2012
		JP 5455131 B2	26-03-2014
		JP 2007515950 A	21-06-2007
		JP 2012085643 A	10-05-2012
		TW 1428093 B	01-03-2014
		US 2005244521 A1	03-11-2005
		US 2009133703 A1	28-05-2009
		US 2009133704 A1	28-05-2009
		US 2012199149 A1	09-08-2012
		WO 2005046363 A2	26-05-2005

US 5845649 A	08-12-1998	NONE	

EP 0509657 A1	21-10-1992	EP 0509657 A1	21-10-1992
		JP H05153946 A	22-06-1993
		US 5240016 A	31-08-1993

WO 2016133109 A1	25-08-2016	JP W02016133109 A1	31-08-2017
		TW 201708167 A	01-03-2017
		WO 2016133109 A1	25-08-2016

DE 202016005592 U1	10-11-2016	NONE	

US 2014224266 A1	14-08-2014	CN 105228659 A	06-01-2016
		EA 201591494 A1	30-12-2015
		EP 2956179 A1	23-12-2015
		US 2014224266 A1	14-08-2014
		WO 2014126985 A1	21-08-2014

EP 0500658 B1	26-01-1994	AT 100707 T	15-02-1994
		AU 648522 B2	28-04-1994
		BR 9007821 A	29-09-1992
		CA 2073055 A1	08-05-1991
		DE 69006363 D1	10-03-1994
		DE 69006363 T2	18-08-1994
		DK 615689 A	08-05-1991
		DK 0500658 T3	09-05-1994
		EP 0500658 A1	02-09-1992
		ES 2048510 T3	16-03-1994
		FI 922066 A	07-05-1992

EPO FORM P0459

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 17 15 4835

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

15-09-2017

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		IE 903995 A1	08-05-1991
		JP 2958663 B2	06-10-1999
		JP 3357618 B2	16-12-2002
		JP H05501880 A	08-04-1993
		JP H11315023 A	16-11-1999
		LV 10181 A	20-10-1994
		NO 921791 A	03-07-1992
		NZ 235988 A	28-04-1993
		PT 95813 A	13-09-1991
		WO 9106288 A1	16-05-1991

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 7836896 B, Nadimi **[0045]**
- US 20140069446 A1, Haddad **[0045]**
- US 20110048438 A1, Masri **[0045]**
- DE 102009060449 A1, Pertz **[0045]**
- WO 2012060784 A, Gunay **[0045]**
- IN 02476MUM2013 A **[0045]**
- US 20160255875 A, Churakov **[0045]**
- IN 00405DEL2015 A **[0045]**
- WO 2016046208 A, Rath **[0045]**
- EP 2957183 A1, Chida **[0045]**
- IN 00592MU2005, Fazlani **[0045]**