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GIBSON et al.(10) **Pub. No.: US 2025/0127206 A1**(43) **Pub. Date: Apr. 24, 2025**(54) **A CONSUMABLE FOR USE WITH AN
AEROSOL PROVISION DEVICE***A24F 40/20* (2020.01)*A24F 40/465* (2020.01)(71) Applicant: **NICOVENTURES TRADING
LIMITED**, London (GB)(52) **U.S. CL.**CPC *A24C 5/01* (2020.01); *A24D 1/20*
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40/465 (2020.01)(72) Inventors: **Paul GIBSON**, London (GB); **Andrew
Jonathan BRAY**, London (GB)(21) Appl. No.: **18/681,164**

(57)

ABSTRACT(22) PCT Filed: **Aug. 4, 2022**(86) PCT No.: **PCT/EP2022/071996**

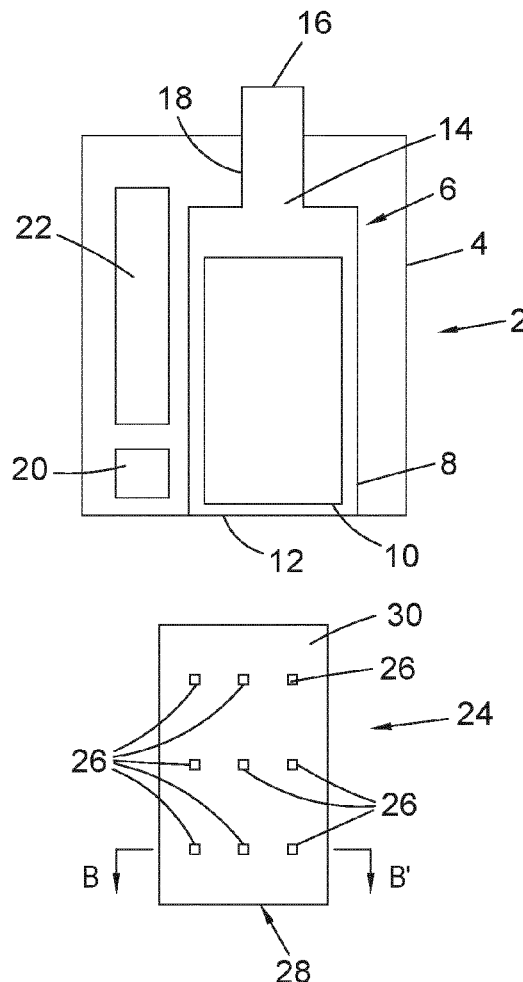
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A method of manufacture of an article is provided, in which the article comprises a support and aerosol generating material. The method includes the steps of: (a) providing a mold body; (b) forming one or more mold recesses extending into a first surface) of the mold body; (c) applying at least one discrete portion of aerosol generating material to the first surface of the mold body, in which each mold recess extends into the first surface of the mold body, at least one discrete portion of aerosol generating material at least partially overlies a mold recess, or at least one discrete portion of aerosol generating material at least partially overlies the position where a mold recess will be formed in step (b).



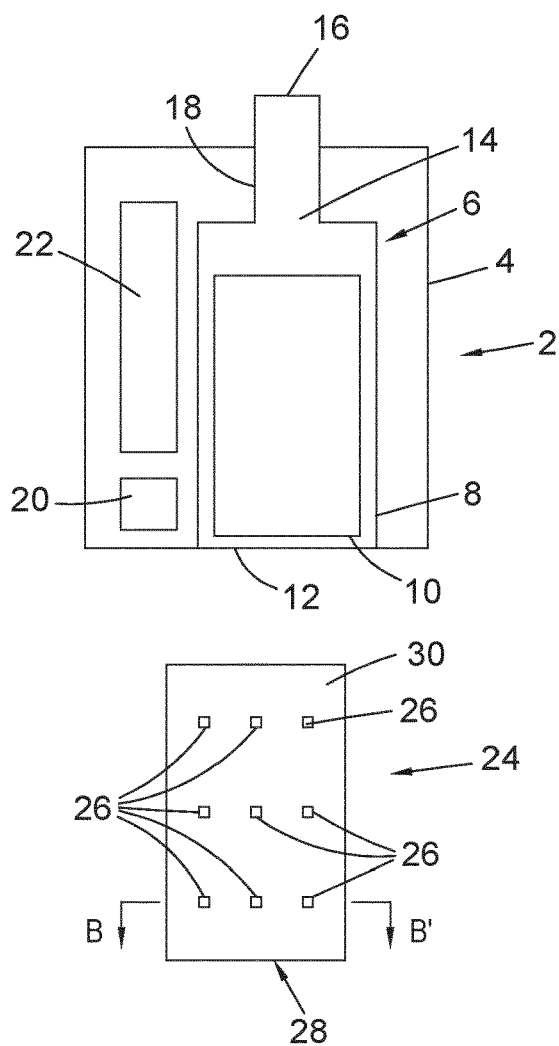


FIG. 1

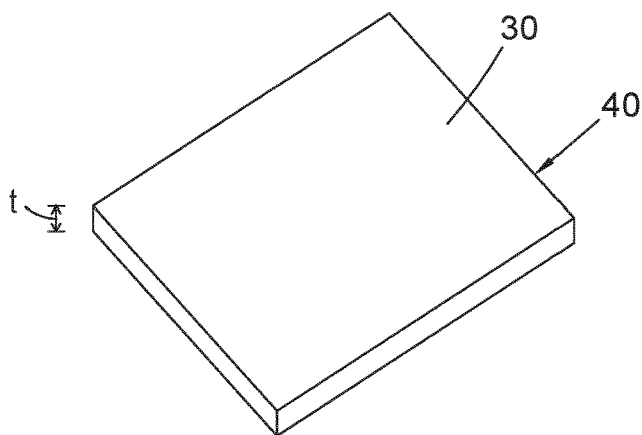


FIG. 2

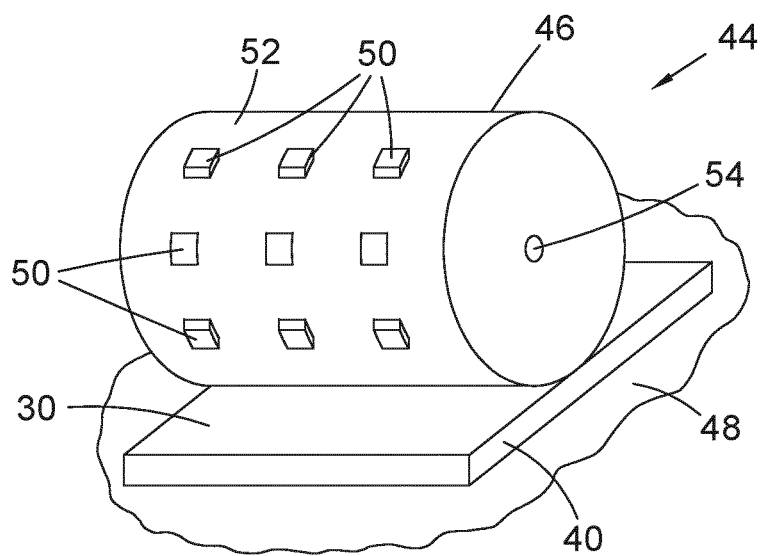


FIG. 3

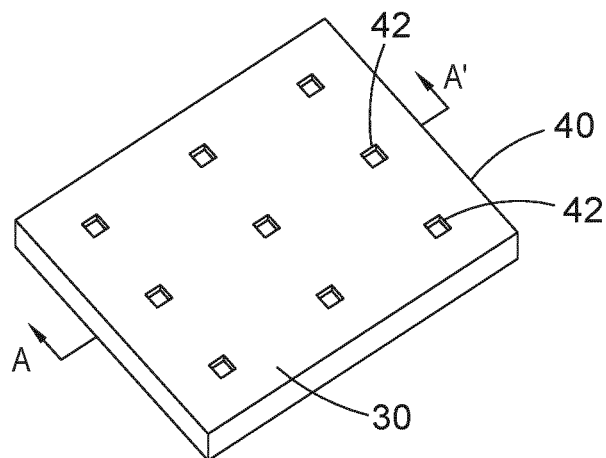


FIG. 4

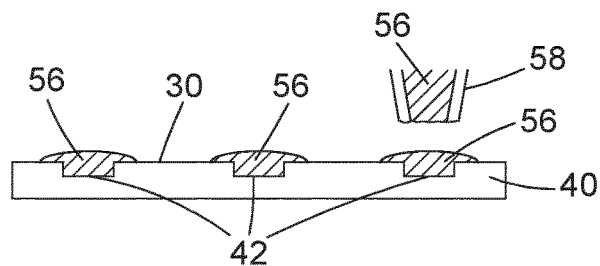


FIG. 5

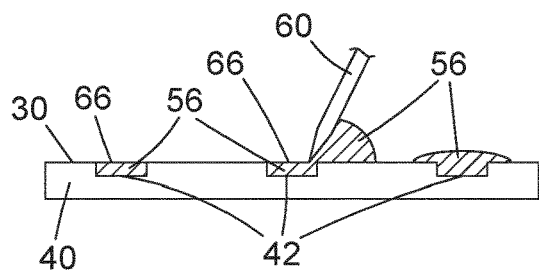


FIG. 6

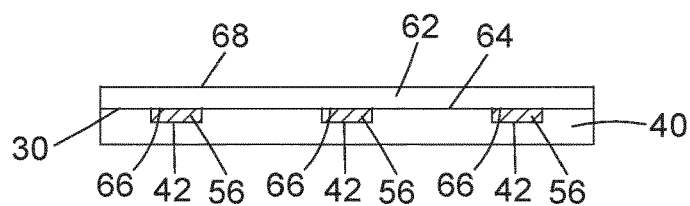


FIG. 7

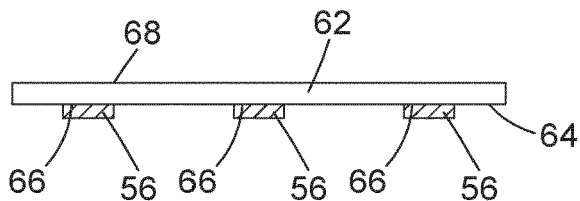


FIG. 8

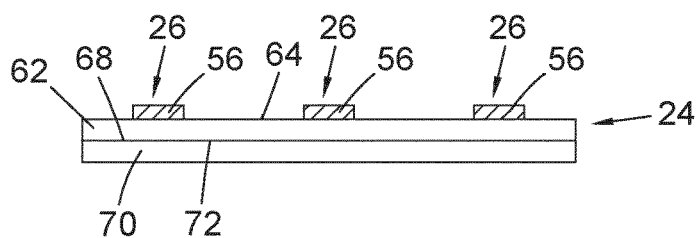


FIG. 9

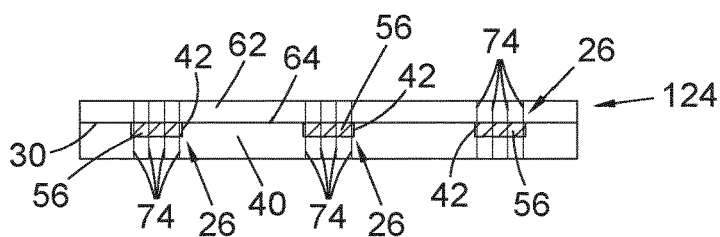


FIG. 10

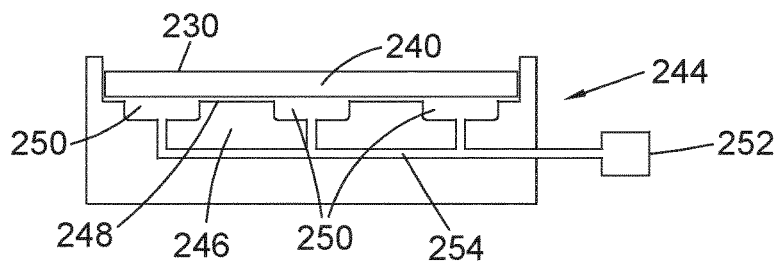


FIG. 11

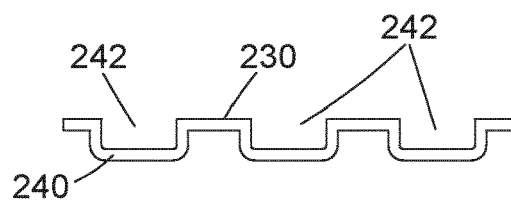


FIG. 12

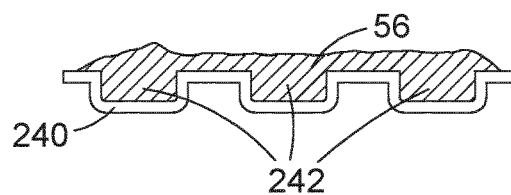


FIG. 13

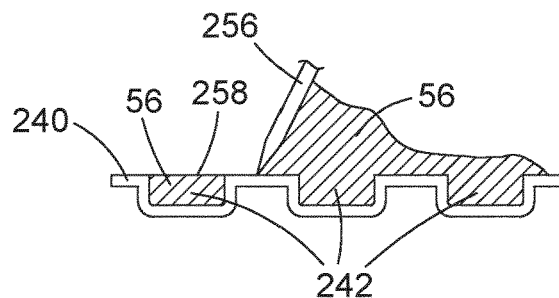


FIG. 14

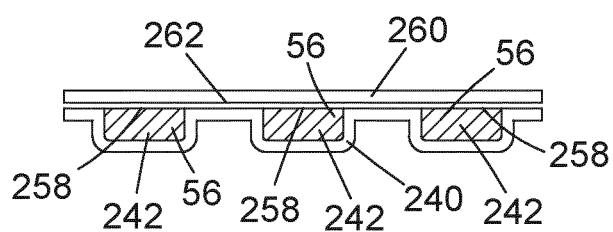


FIG. 15

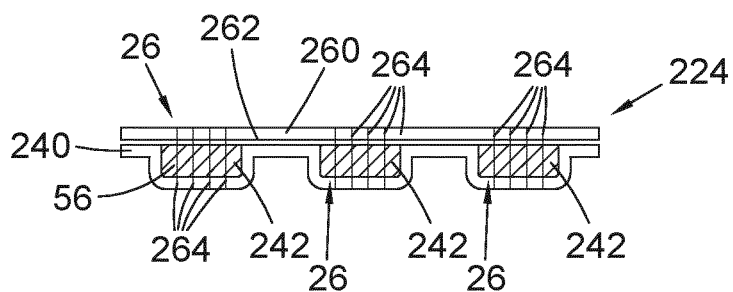


FIG. 16

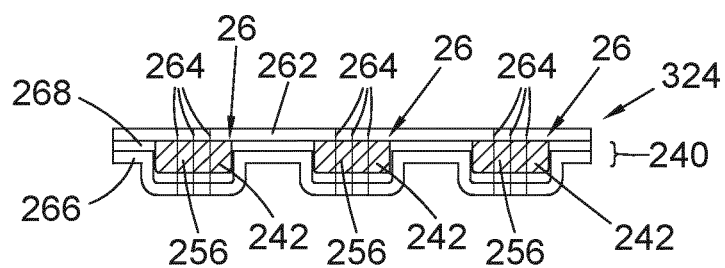


FIG. 17

A CONSUMABLE FOR USE WITH AN AEROSOL PROVISION DEVICE

RELATED APPLICATIONS

[0001] The present application is a National Phase entry of PCT Application PCT/EP2022/071996 filed Aug. 4, 2022, which claims priority to GB Application 2111276.8 filed Aug. 4, 2021, each of which is hereby incorporated by reference in their entirety.

TECHNICAL FIELD

[0002] This disclosure relates to the field of non-combustible aerosol provision systems, in particular to consumables for use with an aerosol provision device, a method for manufacturing consumables for use with an aerosol provision device, and an aerosol provision system including a consumable and an aerosol provision device.

BACKGROUND

[0003] Smoking articles such as cigarettes, cigars and the like burn tobacco during use to create tobacco smoke. Alternatives to these types of articles release an inhalable aerosol or vapor by releasing compounds from a substrate material by heating without burning. These may be referred to as non-combustible smoking articles, aerosol generating assemblies, or aerosol provision devices.

[0004] One example of such a product is a heating device which release compounds by heating, but not burning, an aerosolizable material which may be referred to as a solid aerosol-generating material. This solid aerosol-generating material may, in some cases, contain a tobacco material. The heating volatilizes at least one component of the material, typically forming an inhalable aerosol. These products may be referred to as heat-not-burn devices, tobacco heating devices or tobacco heating products. Various different arrangements for volatilizing at least one component of the solid aerosol-generating material are known.

[0005] As another example, there are hybrid devices. These hybrid devices contain a liquid source (which may or may not contain nicotine) which is vaporized by heating to produce an inhalable vapor or aerosol. The device additionally contains a solid aerosol-generating material (which may or may not contain a tobacco material) and components of this material are entrained in the inhalable vapor or aerosol to produce the inhaled medium.

SUMMARY

[0006] According to a first aspect of the present disclosure there is provided a method of manufacture of an article, in which the article comprises a support and aerosol generating material, in which the method comprises the steps of

[0007] (a) providing a mold body,

[0008] (b) forming one or more mold recesses extending into a first surface of the mold body,

[0009] (c) applying at least one discrete portion of aerosol generating material to the first surface of the mold body, in which

[0010] each mold recess extends into the first surface of the mold body,

[0011] at least one discrete portion of aerosol generating material at least partially overlies a mold recess, or at least one discrete portion of aerosol generating material

at least partially overlies the position where a mold recess will be formed in step (b).

[0012] According to a second aspect of the present disclosure there is provided a consumable for use with an apparatus for heating an aerosol generating material comprising a support and aerosol generating material, in which the consumable is manufactured according to the method of the first aspect of the present disclosure.

[0013] According to a third aspect of the present disclosure there is provided an aerosol provision system comprising an aerosol provision device and a consumable according to the second aspect of the present disclosure.

[0014] According to a fourth aspect of the present disclosure there is provided a method of generating aerosol from a consumable according to the second aspect of the present disclosure using an aerosol-generating device with at least one aerosol generator disposed to heat, but not burn, the consumable in use.

[0015] According to a fifth aspect of the present disclosure there is provided an aerosol provision device for use with a consumable according to the second aspect of the present disclosure, in which the device comprises an aerosol generator configured to heat at least a portion of the aerosol generating material supported on the consumable.

[0016] Further features and advantages of the present disclosure will become apparent from the following description of embodiments of the disclosure given by way of example and with reference to the accompanying drawings.

DRAWINGS

[0017] FIG. 1 shows a schematic view of an embodiment of an aerosol provision device and an embodiment of a consumable made according to an embodiment of the method according to the present disclosure;

[0018] FIG. 2 shows a view of an embodiment of a mold body to be used according to a first embodiment of the method according to the present disclosure;

[0019] FIG. 3 shows a schematic view of an debossing apparatus to be used according to the first embodiment of the method according to the present disclosure;

[0020] FIG. 4 shows a view of the mold body of FIG. 2 once debossed;

[0021] FIG. 5 shows a section along the line A-A' of FIG. 4 after the application of aerosol generating material;

[0022] FIG. 6 shows a section along the line A-A' of FIG. 4 whilst excess aerosol generating material is removed from the mold body;

[0023] FIG. 7 shows a section along the line A-A' of FIG. 4 after a sheet material has been placed over a first surface of the mold body;

[0024] FIG. 8 shows a section of the sheet material of FIG. 7 once it has been removed from the mold body;

[0025] FIG. 9 shows a section of the consumable of FIG. 1 manufactured using the first embodiment of the method according to the present disclosure along the line B-B';

[0026] FIG. 10 shows a section of an alternative embodiment of a consumable of FIG. 1 manufactured using the first embodiment of the method according to the present disclosure along the line B-B';

[0027] FIG. 11 shows a schematic view of a vacuum blister former to be used according to a second embodiment of the method according to the present disclosure;

[0028] FIG. 12 shows an embodiment of a section equivalent to that along the line A-A' of FIG. 4 after the mold body

to be used according to the second embodiment of the method according to the present disclosure has been treated using the vacuum blister former of FIG. 11;

[0029] FIG. 13 shows the section of the embodiment of the mold body of FIG. 12 after the application of aerosol generating material;

[0030] FIG. 14 shows the section of the embodiment of the mold body of FIG. 12 whilst excess aerosol generating material is removed from the mold body; and

[0031] FIG. 15 shows the section of the consumable of FIG. 1 manufactured using the second embodiment of the method according to the present disclosure along the line B-B'.

DETAILED DESCRIPTION

[0032] The consumable of the present description may be alternatively referred to as an article.

[0033] In some embodiments, the consumable comprises aerosol-generating material. The consumable may comprise an aerosol-generating material storage area, an aerosol-generating material transfer component, an aerosol generator, an aerosol generation area, a housing, a wrapper, an aerosol-modifying agent, one or more active constituents, one or more flavors, one or more aerosol-former materials, and/or one or more other functional materials.

[0034] The apparatus for heating the aerosol-generating material with which the consumable is to be used is a part of a non-combustible aerosol provision system. Non-combustible aerosol provision systems release compounds from an aerosol-generating material without combusting the aerosol-generating material, such as electronic cigarettes, tobacco heating products, and hybrid systems to generate aerosol using a combination of aerosol-generating materials.

[0035] According to the present disclosure, a “non-combustible” aerosol provision system is one where a constituent aerosol-generating material of the aerosol provision system (or component thereof) is not combusted or burned in order to facilitate delivery of at least one substance to a user.

[0036] In some embodiments, the delivery system is a non-combustible aerosol provision system, such as a powered non-combustible aerosol provision system.

[0037] In some embodiments, the non-combustible aerosol provision system is an electronic cigarette, also known as a vaping device or electronic nicotine delivery system (END), although it is noted that the presence of nicotine in the aerosol-generating material is not a requirement.

[0038] In some embodiments, the non-combustible aerosol provision system is an aerosol-generating material heating system, also known as a heat-not-burn system. An example of such a system is a tobacco heating system.

[0039] In some embodiments, the non-combustible aerosol provision system is a hybrid system to generate aerosol using a combination of aerosol-generating materials, one or a plurality of which may be heated. Each of the aerosol-generating materials may be, for example, in the form of a solid, liquid or gel and may or may not contain nicotine. In some embodiments, the hybrid system comprises a liquid or gel aerosol-generating material and a solid aerosol-generating material. The solid aerosol-generating material may comprise, for example, tobacco or a non-tobacco product.

[0040] Typically, the non-combustible aerosol provision system may comprise a non-combustible aerosol provision device and a consumable for use with the non-combustible aerosol provision device.

[0041] In some embodiments, the disclosure relates to consumables comprising aerosol-generating material and configured to be used with non-combustible aerosol provision devices. These consumables are sometimes referred to as articles throughout the disclosure.

[0042] In some embodiments, the non-combustible aerosol provision system, such as a non-combustible aerosol provision device thereof, may comprise a power source and a controller. The power source may, for example, be an electric power source or an exothermic power source. In some embodiments, the exothermic power source comprises a carbon substrate which may be energised so as to distribute power in the form of heat to an aerosol-generating material or to a heat transfer material in proximity to the exothermic power source.

[0043] In some embodiments, the non-combustible aerosol provision system may comprise an area for receiving the consumable, an aerosol generator, an aerosol generation area, a housing, a mouthpiece, a filter and/or an aerosol-modifying agent.

[0044] In some embodiments, the consumable for use with the non-combustible aerosol provision device may comprise aerosol-generating material, an aerosol-generating material storage area, an aerosol-generating material transfer component, an aerosol generator, an aerosol generation area, a housing, a wrapper, a filter, a mouthpiece, and/or an aerosol-modifying agent.

[0045] According to a first aspect of the present disclosure there is provided a method of manufacture of an article, in which the article comprises a support and aerosol generating material, in which the method comprises the steps of

[0046] (a) providing a mold body,

[0047] (b) forming one or more mold recesses extending into a first surface of the mold body,

[0048] (c) applying at least one discrete portion of aerosol generating material to the first surface of the mold body, in which

[0049] each mold recess extends into the first surface of the mold body,

[0050] at least one discrete portion of aerosol generating material at least partially overlies a mold recess, or at least one discrete portion of aerosol generating material at least partially overlies the position where a mold recess will be formed in step (b).

[0051] In some embodiments of the above embodiment the article is shaped and dimensioned for use as a consumable for use with an apparatus for heating an aerosol generating material to volatilize at least one component of the aerosol generating material.

[0052] In some alternative embodiments of the above embodiment the article is larger than is compatible for use with an apparatus for heating an aerosol generating material to volatilize at least one component of the aerosol generating material, in which the method further comprises a step of

[0053] (d) separating the article into two or more consumable portions, in which each consumable portion is shaped and dimensioned for use as a consumable for use with an apparatus for heating an aerosol generating material to volatilize at least one component of the aerosol generating material. In such embodiments the

article may be large and separable into a large number of consumable portions. This may have an advantage of manufacturing efficiency.

[0054] In some embodiments of any of the above embodiments the aerosol generating material applied to the first surface of the mold body in step (c) is an aerosol generating material slurry. An advantage of applying the aerosol generating material as an aerosol generating material slurry is that the slurry will readily adapt to any three dimensional aspects of the surface to which it is applied.

[0055] In some embodiments of any of the above embodiments the method comprises a further method step of

[0056] (e) allowing or causing the aerosol generating material slurry to set,

[0057] in which the aerosol generating slurry sets to form an aerosol generating material, and step (e) occurs after step (c).

[0058] In some embodiments of any of the above embodiments the aerosol generating material is an aerosol generating film.

[0059] Aerosol-generating material is a material that is capable of generating aerosol, for example when heated, irradiated or energized in any other way. Aerosol-generating material may, for example, be in the form of a solid, liquid or semi-solid (such as a gel) which may or may not contain an active substance and/or flavorants.

[0060] The aerosol-generating material may comprise one or more active substances and/or flavors, one or more aerosol-former materials, and optionally one or more other functional material.

[0061] The aerosol-generating material may comprise a binder, such as a gelling agent, and an aerosol former. Optionally, a substance to be delivered and/or filler may also be present. Optionally, a solvent, such as water, is also present and one or more other components of the aerosol-generating material may or may not be soluble in the solvent. In some embodiments, the aerosol-generating material is substantially free from botanical material. In particular, in some embodiments, the aerosol-generating material is substantially tobacco free.

[0062] The aerosol-generating material may comprise or be in the form of an aerosol-generating film. The aerosol-generating film may comprise a binder, such as a gelling agent, and an aerosol former. Optionally, a substance to be delivered and/or filler may also be present. The aerosol-generating film may be substantially free from botanical material. In particular, in some embodiments, the aerosol-generating material is substantially tobacco free.

[0063] The aerosol-generating film may have a thickness of about 0.015 mm to about 1 mm. For example, the thickness may be in the range of about 0.05 mm, 0.1 mm or 0.15 mm to about 0.5 mm or 0.3 mm.

[0064] The aerosol-generating film may be formed by combining a binder, such as a gelling agent, with a solvent, such as water, an aerosol-former and one or more other components, such as one or more substances to be delivered, to form a slurry and then heating the slurry to volatilize at least some of the solvent to form the aerosol-generating film.

[0065] The slurry may be heated to remove at least about 60 wt %, 70 wt %, 80 wt %, 85 wt % or 90 wt % of the solvent.

[0066] The aerosol-generating material may comprise or be an "amorphous solid". In some embodiments, the aerosol-generating material comprises an aerosol-generating

film that is an amorphous solid. The amorphous solid may be a "monolithic solid". The amorphous solid may be substantially non-fibrous. In some embodiments, the amorphous solid may be a dried gel. The amorphous solid is a solid material that may retain some fluid, such as liquid, within it. In some embodiments, the amorphous solid may, for example, comprise from about 50 wt %, 60 wt % or 70 wt % of amorphous solid, to about 90 wt %, 95 wt % or 100 wt % of amorphous solid.

[0067] The amorphous solid may be substantially free from botanical material. The amorphous solid may be substantially tobacco free.

[0068] In some embodiments of the above embodiment the mold body may be a sheet material that may be deformed to form the mold recesses. In some embodiments the sheet material is less than 1.0 mm thick, less than 0.9 mm thick, less than 0.8 mm thick, less than 0.7 mm thick, less than 0.6 mm thick, less than 0.5 mm thick, less than 0.4 mm thick, less than 0.3 mm thick, less than 0.2 mm thick, or less than 0.1 mm thick. In such embodiments the mold recess may have the form of a depression in one of the main surfaces of the sheet material. The depression extends through the sheet material and forms a bump or upstanding portion in the other of the main surfaces of the sheet material. The deformation of the material to form the mold recesses may be permanent. Alternatively, the deformation may be temporary in that the formation of the mold recesses is an elastic deformation of the mold body, the mold recesses remain in existence for sufficient time for the method of the present disclosure to be completed, but ultimately the mold body returns to its original shape or to approximately its original shape.

[0069] In some embodiments of the above embodiment the mold recesses are formed by use of known debossing or embossing techniques. In other embodiments the mold recesses may be formed using known vacuum forming techniques. In some embodiments of the above embodiment other known techniques for the formation of the recesses may be employed.

[0070] In some other embodiments of the above embodiment the sheet material may be of a thickness sufficient for a mold recess to be formed within the mold body, that is without causing deformation of any of the outer surfaces of the mold body other than the surface in which the mold recess is formed. In such embodiments the thickness may be greater than 0.2 mm, greater than 0.3 mm, greater than 0.4 mm, greater than 0.5 mm, greater than 0.6 mm, greater than 0.7 mm, greater than 0.8 mm, greater than 0.9 mm, or greater than 1.0 mm.

[0071] In such embodiments the mold recess may be formed by compression of the material of the mold body, for by example using known embossing techniques, or by removal of part of the mold body, for example by use of known drilling or milling techniques.

[0072] In some other embodiments of the above embodiment the mold body is formed with mold recesses and as such steps (a) and (b) occur effectively simultaneously.

[0073] In some embodiments of any of the above embodiments steps (a) and (b) are performed before step (c).

[0074] In some embodiments of any of the above embodiments the steps (a) and (b) are performed as a separate process to step (c), and the product of steps (a) and (b) is stored and/or transported between different locations before step (c) is performed. Such an approach may have an advantage in that the mold body and mold recesses therein

may be created by a specialist manufacturer of such items and then transported to a party who will perform the rest of the method of the present disclosure. This is likely to result in efficiencies in the performance of the method of the present disclosure.

[0075] In some embodiments of any of the above embodiments step (c) is performed after step (a) and before step (b). This approach is advantageous when the mold recesses are to be formed using a vacuum blister former of the like the aerosol generating material is, in such circumstances, sucked into the blisters as the blisters are formed.

[0076] In some embodiments of any of the above embodiments the method comprises a further step of

[0077] (f) passing a scraper across at least part of the first surface of the mold body after step (c) has been performed. Step (f) may be performed before or after step (e) has been performed.

[0078] The performance of step (f) has an advantage that it ensures that the aerosol generating material is limited to the mold recesses. Alternatively expressed, the passing of the scraper across the first surface of the mold body ensures that the aerosol generating material is distributed on the mold body as one or more discrete regions of aerosol generating material. A further advantage is that the passing of the scraper across the first surface of the mold body may push any aerosol generating material deposited on the first surface of the mold body into a mold recess if that recess is not already full of aerosol generating material. This helps ensure that each mold recess is filled to capacity (thus ensuring that the intended quantity or volume of aerosol generating material is deposited in each mold recess) whilst also minimising the quantity of aerosol generating material used.

[0079] In some embodiments of any of the above embodiments the scraper may be a doctor blade.

[0080] In some embodiments of any of the above embodiments step (c) comprises applying aerosol generating material to at least the portions of the first surface of the mold body that comprise a mold recess. In some alternative embodiments, step (c) comprises applying aerosol generating material to substantially all of the first surface of the mold body.

[0081] In some embodiments of any of the above embodiments the method comprises a further step of

[0082] (g) overlaying the first surface of the mold body with a layer of material.

[0083] In some embodiments of any of the above embodiments step (g) is performed after step (c) and after step (f) if step (f) is to be performed.

[0084] In some embodiments of any of the above embodiments the method comprises a further step of

[0085] (h) causing the aerosol generating material to bond to the layer of material, in which step (h) is performed after step (g).

[0086] In some embodiments of any of the above embodiments the method comprises the further steps of

[0087] (i) applying a release agent to the first surface of the mold body, and

[0088] (j) removing the layer of material with the aerosol generating material bonded thereto from the mold,

[0089] in which step (i) is performed before step (c), and step (j) is performed after step (h).

[0090] In some embodiments of any of the above embodiments the layer of material is attached to the support after step (j).

[0091] In some embodiments of any of the above embodiments the layer of material is attached to the support with the surface of the layer of material to which the aerosol generating material is bonded facing away from the support.

[0092] In some embodiments of any of the above embodiments the layer of material comprises a susceptor. In other embodiments the layer of material may be a material suitable for use in association with a resistance heater.

[0093] In some embodiments of any of the above embodiments the support comprises the layer of material.

[0094] In some embodiments of any of the above embodiments the support comprises the mold body or a part of the mold body.

[0095] In some embodiments of any of the above embodiments the support comprises a susceptor.

[0096] In some embodiments of any of the above embodiments the method comprises a further step of

[0097] (k) applying a layer of a susceptor to the first surface of the mold, in which step (k) is performed after step (b) and before step (d). In such embodiments the susceptor will be applied to the parts of the surface of the mold body that define the mold recesses.

[0098] The support may be formed of a material suitable to form a substrate. The support may, for example, be or comprise paper, card, paperboard, cardboard, reconstituted material, a plastics material, a ceramic material, a composite material, glass, a metal, or a metal alloy.

[0099] In some embodiments, the support comprises a susceptor. In some embodiments, the susceptor is embedded within the support. In some alternative embodiments, the susceptor is on or attached to one or either side or surface of the material of the support.

[0100] In some embodiments of any of the above embodiments the susceptor is a metal or metal alloy.

[0101] In some embodiments of any of the above embodiments the susceptor is a metallic foil or a metallic film. For example, aluminium foil or film.

[0102] In some embodiments of any of the above embodiments the method comprises a further step of

[0103] (m) perforating one or more of the mold body (when present), the aerosol generating material, the support (when present), the susceptor (when present), and the layer of material (when present).

[0104] In some embodiments of the above embodiment the perforations extend between two surfaces of the consumable. In some other embodiments of the above embodiment the perforations have one end that is open to the atmosphere surrounding the consumable, and one end that is blind. A blind end is closed by one of the mold body (when present), the aerosol generating material, the support (when present), the susceptor (when present), or the layer of material (when present).

[0105] In some embodiments of any of the above embodiments the perforations have a cross-sectional area of at least 0.01 mm², at least 0.05 mm², at least 0.1 mm², at least 0.5 mm², at least 1 mm², at least 2 mm², or at least 3 mm².

[0106] In some embodiments of the above embodiment at least one mold recess intersects with the first surface of the mold body with a shape that is one of longitudinally extending, rectangular, round or oval.

[0107] In some embodiments of the above embodiment step (c) comprises applying at least two discrete portions of aerosol generating material to the first surface of the mold body, in which those discrete portions of aerosol generating material have different compositions from each other.

[0108] Aerosol generators or aerosol-former materials may comprise one or more constituents capable of forming an aerosol. In some embodiments, the aerosol-former material may comprise one or more of glycerol, propylene glycol, diethylene glycol, triethylene glycol, tetraethylene glycol, 1,3-butylene glycol, erythritol, meso-Erythritol, ethyl vanillate, ethyl laurate, a diethyl suberate, triethyl citrate, triacetin, a diacetin mixture, benzyl benzoate, benzyl phenyl acetate, tributyrin, lauryl acetate, lauric acid, myristic acid, and propylene carbonate.

[0109] In some embodiments the support is a laminate, the laminate comprises at least a first and a second substrate. In some embodiments at least one substrate of the laminate may be present for structural purposes, in particular to provide the consumable with desired handling characteristics, for example to provide a degree of elastic resilience to deformation of the consumable, and/or to provide stiffness.

[0110] In some embodiments of any of the above embodiments a surface of the support is formed from an impermeable material.

[0111] In some embodiments of any of the above embodiments one of the surfaces of the support is formed from a susceptor.

[0112] In some embodiments of any of the above embodiments the support is a laminate comprising at least three substrates, and a substrate that does not form the first or the second surface of the support is a susceptor.

[0113] A susceptor is a material that is heatable by penetration with a varying magnetic field, such as an alternating magnetic field. The susceptor may be an electrically-conductive material, so that penetration thereof with a varying magnetic field causes induction heating of the susceptor by resistive heating as a result of electric eddy currents. The susceptor may be magnetic material, so that penetration thereof with a varying magnetic field causes magnetic hysteresis heating of the susceptor. The susceptor may be both electrically-conductive and magnetic, so that the susceptor is heatable by both heating mechanisms. The device that is configured to generate the varying magnetic field is referred to as a magnetic field generator.

[0114] The susceptor may comprise a ferromagnetic metal such as iron or an iron alloy such as steel or an iron nickel alloy. Some example ferromagnetic metals are a 400 series stainless steel such as grade 410 stainless steel, or grade 420 stainless steel, or grade 430 stainless steel, or stainless steel of similar grades. Alternatively, the susceptor may comprise a suitable non-magnetic, in particular paramagnetic, conductive material, such as aluminium. In a paramagnetic conductive material inductive heating occurs solely by resistive heating due to eddy currents. Alternatively, the susceptor may comprise a non-conductive ferrimagnetic material, such as a non-conductive ferrimagnetic ceramic. In that case, heat is only—generated by hysteresis losses. The susceptor may comprise a commercial alloy like Phytherm 230 (with a composition (in % by weight=wt %) with 50 wt % Ni, 10 wt % Cr and the rest Fe) or Phytherm 260 (with a composition with 50 wt % Ni, 9 wt % Cr and the rest Fe).

[0115] The susceptor may in some embodiments of any of the above embodiments be a metal foil or a metal film, optionally an aluminium foil or film or a ferrous foil or film.

[0116] Alternatively, the susceptor may in some embodiments of any of the above embodiments be any conductor that could be sprayed or vapor deposited on a material that forms the support, on the uncovered portion of aerosol generating material located in a mold recess, or on the surface of a mold recess.

[0117] A susceptor is required where the aerosol generating material is to be heated using magnetic induction techniques or a combination of magnetic induction and resistive heating techniques. Where the consumable is to be heated using only resistive heating techniques no susceptor needs to be provided but may be present.

[0118] In an embodiment of any of the above embodiments the support comprises a substrate of support material, and the support material comprises one or more of paper, card, paperboard, cardboard, reconstituted material, a plastics material, a ceramic material, a composite material, glass, a metal, or a metal alloy.

[0119] In an embodiment of any of the above embodiments the support comprises a plastics material which can withstand the temperatures typically encountered in a non-combustible aerosol provision device. In some embodiments the support comprises polyether ether ketone (PEEK). Such embodiments have the advantage that the support may be reused, and that the consumable is less affected by any condensation in the non-combustible aerosol provision device than consumables that comprise a support which includes use of a sorbent material for structural purposes.

[0120] In some embodiments of any of the above embodiments the aerosol-generating material is supported on a surface of the support that is not formed from a sorbent material. Such an arrangement has the effect that during the manufacture, subsequent storage and use of the consumable neither the aerosol-generating material or any components of the aerosol-generating material will be adsorbed/absorbed into the support.

[0121] According to a second aspect of the present disclosure there is provided a consumable for use with an aerosol provision device, in which the consumable comprises a support and aerosol-generating material in which the consumable is formed using a method according to the first aspect of the present disclosure.

[0122] In some embodiments of any of the above embodiments step (e) comprises the use of one or more of time, conducted heat, radiant heat, or air movement across the exposed surfaces of the aerosol-generating material.

[0123] In an embodiment of any of the above embodiments the aerosol-generating material comprises an active substance.

[0124] The active substance as used herein may be a physiologically active material, which is a material intended to achieve or enhance a physiological response. The active substance may for example be selected from nutraceuticals, nootropics, psychoactives. The active substance may be naturally occurring or synthetically obtained. The active substance may comprise for example nicotine, caffeine, taurine, terpenes of non-cannabinoid origin, theine, vitamins such as B6 or B12 or C, melatonin, cannabinoids, or constituents, derivatives, or combinations thereof. The

active substance may comprise one or more constituents, derivatives or extracts of tobacco, cannabis or another botanical.

[0125] The active substance may comprise one or more constituents, derivatives or extracts of cannabis, such as one or more cannabinoids or terpenes.

[0126] In some embodiments, the active substance comprises nicotine. In some embodiments, the active substance comprises caffeine, melatonin or vitamin B12.

[0127] The active substance may comprise or be derived from one or more botanicals or constituents, derivatives or extracts thereof. As used herein, the term “botanical” includes any material derived from plants including, but not limited to, extracts, leaves, bark, fibers, stems, roots, seeds, flowers, fruits, pollen, husk, shells or the like. Alternatively, the material may comprise an active compound naturally existing in a botanical, obtained synthetically. The material may be in the form of liquid, gas, solid, powder, dust, crushed particles, granules, pellets, shreds, strips, sheets, or the like. Example botanicals are tobacco, eucalyptus, star anise, hemp, cocoa, cannabis, fennel, lemongrass, peppermint, spearmint, rooibos, chamomile, flax, ginger, *Ginkgo biloba*, hazel, hibiscus, laurel, licorice (liquorice), matcha, mate, orange skin, papaya, rose, sage, tea such as green tea or black tea, thyme, clove, cinnamon, coffee, aniseed (anise), basil, bay leaves, cardamom, coriander, cumin, nutmeg, oregano, paprika, rosemary, saffron, lavender, lemon peel, mint, juniper, elderflower, vanilla, wintergreen, beefsteak plant, curcuma, turmeric, sandalwood, cilantro, bergamot, orange blossom, myrtle, cassis, valerian, pimento, mace, damien, marjoram, olive, lemon balm, lemon basil, chive, carvi, verbena, tarragon, geranium, mulberry, ginseng, theanine, theacrine, maca, ashwagandha, damiana, guarana, chlorophyll, baobab or any combination thereof. The mint may be chosen from the following mint varieties: *Mentha Arvensis*, *Mentha* c.v., *Mentha niliaca*, *Mentha piperita*, *Mentha piperita citrata* c.v., *Mentha piperita* c.v., *Mentha spicata crispa*, *Mentha cardifolia*, *Mentha longifolia*, *Mentha suaveolens variegata*, *Mentha pulegium*, *Mentha spicata* c.v. and *Mentha suaveolens*. In some embodiments, the active substance comprises or is derived from one or more botanicals or constituents, derivatives or extracts thereof and the botanical is tobacco.

[0128] In some embodiments, the active substance comprises or derived from one or more botanicals or constituents, derivatives or extracts thereof and the botanical is selected from eucalyptus, star anise, cocoa and hemp.

[0129] In some embodiments, the active substance comprises or derived from one or more botanicals or constituents, derivatives or extracts thereof and the botanical is selected from rooibos and fennel.

[0130] In some embodiments, the aerosol-generating material comprises a flavor or flavorant.

[0131] As used herein, the terms “flavor” and “flavorant” refer to materials which, where local regulations permit, may be used to create a desired taste, aroma or other somatosensorial sensation in a product for adult consumers. They may include naturally occurring flavor materials, botanicals, extracts of botanicals, synthetically obtained materials, or combinations thereof (e.g., tobacco, cannabis, licorice (liquorice), hydrangea, eugenol, Japanese white bark magnolia leaf, chamomile, fenugreek, clove, maple, matcha, menthol, Japanese mint, aniseed (anise), cinnamon, turmeric, Indian spices, Asian spices, herb, wintergreen,

cherry, berry, red berry, cranberry, peach, apple, orange, mango, clementine, lemon, lime, tropical fruit, papaya, rhubarb, grape, durian, dragon fruit, cucumber, blueberry, mulberry, citrus fruits, Drambuie, bourbon, scotch, whiskey, gin, tequila, rum, spearmint, peppermint, lavender, aloe vera, cardamom, celery, cascarilla, nutmeg, sandalwood, bergamot, geranium, khat, naswar, betel, shisha, pine, honey essence, rose oil, vanilla, lemon oil, orange oil, orange blossom, cherry blossom, cassia, caraway, cognac, jasmine, ylang-ylang, sage, fennel, wasabi, piment, ginger, coriander, coffee, hemp, a mint oil from any species of the genus *Mentha*, eucalyptus, star anise, cocoa, lemongrass, rooibos, flax, *Ginkgo biloba*, hazel, hibiscus, laurel, mate, orange skin, rose, tea such as green tea or black tea, thyme, juniper, elderflower, basil, bay leaves, cumin, oregano, paprika, rosemary, saffron, lemon peel, mint, beefsteak plant, curcuma, cilantro, myrtle, cassis, valerian, pimento, mace, damien, marjoram, olive, lemon balm, lemon basil, chive, carvi, verbena, tarragon, limonene, thymol, camphene), flavor enhancers, bitterness receptor site blockers, sensorial receptor site activators or stimulators, sugars and/or sugar substitutes (e.g., sucralose, acesulfame potassium, aspartame, saccharine, cyclamates, lactose, sucrose, glucose, fructose, sorbitol, or mannitol), and other additives such as charcoal, chlorophyll, minerals, botanicals, or breath freshening agents. They may be imitation, synthetic or natural ingredients or blends thereof. They may be in any suitable form, for example, liquid such as an oil, solid such as a powder, or gas.

[0132] In some embodiments, the flavor comprises menthol, spearmint and/or peppermint. In some embodiments, the flavor comprises flavor components of cucumber, blueberry, citrus fruits and/or redberry. In some embodiments, the flavor comprises eugenol. In some embodiments, the flavor comprises flavor components extracted from tobacco. In some embodiments, the flavor comprises flavor components extracted from cannabis.

[0133] In some embodiments, the flavor may comprise a sensate, which is intended to achieve a somatosensorial sensation which are usually chemically induced and perceived by the stimulation of the fifth cranial nerve (trigeminal nerve), in addition to or in place of aroma or taste nerves, and these may include agents providing heating, cooling, tingling, numbing effect. A suitable heat effect agent may be, but is not limited to, vanillyl ethyl ether and a suitable cooling agent may be, but not limited to eucalyptol, WS-3.

[0134] The aerosol-generating material comprises an aerosol former.

[0135] In some embodiments the aerosol generating agent may comprise one or more constituents capable of forming an aerosol. In some embodiments, the aerosol generating agent may comprise one or more of glycerol, propylene glycol, diethylene glycol, triethylene glycol, tetraethylene glycol, 1,3-butylene glycol, erythritol, meso-Erythritol, ethyl vanillate, ethyl laurate, a diethyl suberate, triethyl citrate, triacetin, a diacetin mixture, benzyl benzoate, benzyl phenyl acetate, tributyrin, lauryl acetate, lauric acid, myristic acid, and propylene carbonate. In particular examples, the aerosol generating agent comprises glycerol.

[0136] In some embodiments, the aerosol generating agent comprises one or more polyhydric alcohols, such as propylene glycol, triethylene glycol, 1,3-butanediol and glycerin; esters of polyhydric alcohols, such as glycerol mono-, di- or

triacetate; and/or aliphatic esters of mono-, di- or polycarboxylic acids, such as dimethyl dodecanedioate and dimethyl tetradecanedioate.

[0137] In some embodiments, the amorphous solid may comprise from about 0.1 wt %, 0.5 wt %, 1 wt %, 3 wt %, 5 wt %, 7 wt % or 10% to about 50 wt %, 45 wt %, 40 wt %, 35 wt %, 30 wt % or 25 wt % of an aerosol generating agent (all calculated on a dry weight basis). The aerosol generating agent may act as a plasticiser. For example, the amorphous solid may comprise 0.5-40 wt %, 3-35 wt % or 10-25 wt % of an aerosol generating agent.

[0138] In some embodiments, the amorphous solid may comprise from about 5 wt %, 10 wt %, 20 wt %, 25 wt %, 27 wt % or 30 wt % to about 60 wt %, 55 wt %, 50 wt %, 45 wt %, 40 wt %, or 35 wt % of an aerosol generating agent (DWB). For example, the amorphous solid may comprise 10-60 wt %, 20-50 wt %, 25-40 wt % or 30-35 wt % of an aerosol generating agent.

[0139] In some embodiments, the amorphous solid may comprise up to about 80 wt %, such as about 40 to 80 wt %, 40 to 75 wt %, 50 to 70 wt %, or 55 to 65 wt % of an aerosol generating agent (DWB).

[0140] The amorphous solid may also comprise a gelling agent.

[0141] In some embodiments, the gelling agent comprises a hydrocolloid. In some embodiments, the gelling agent comprises one or more compounds selected from the group comprising alginates, pectins, starches (and derivatives), celluloses (and derivatives), gums, silica or silicones compounds, clays, polyvinyl alcohol and combinations thereof. For example, in some embodiments, the gelling agent comprises one or more of alginates, pectins, hydroxyethyl cellulose, hydroxypropyl cellulose, carboxymethylcellulose, pullulan, xanthan gum, guar gum, carrageenan, agarose, acacia gum, fumed silica, PDMS, sodium silicate, kaolin and polyvinyl alcohol. In some cases, the gelling agent comprises alginate and/or pectin, and may be combined with a setting agent (such as a calcium source) during formation of the amorphous solid. In some cases, the amorphous solid may comprise a calcium-crosslinked alginate and/or a calcium-crosslinked pectin.

[0142] In some embodiments, the gelling agent comprises one or more compounds selected from cellulosic gelling agents, non-cellulosic gelling agents, guar gum, acacia gum and mixtures thereof.

[0143] In some embodiments, the cellulosic gelling agent is selected from the group consisting of: hydroxymethyl cellulose, hydroxyethyl cellulose, hydroxypropyl cellulose, carboxymethylcellulose (CMC), hydroxypropyl methylcellulose (HPMC), methyl cellulose, ethyl cellulose, cellulose acetate (CA), cellulose acetate butyrate (CAB), cellulose acetate propionate (CAP) and combinations thereof.

[0144] In some embodiments, the gelling agent comprises (or is) one or more of hydroxyethyl cellulose, hydroxypropyl cellulose, hydroxypropyl methylcellulose (HPMC), carboxymethylcellulose, guar gum, or acacia gum.

[0145] In some embodiments, the gelling agent comprises (or is) one or more non-cellulosic gelling agents, including, but not limited to, agar, xanthan gum, gum Arabic, guar gum, locust bean gum, pectin, carrageenan, starch, alginate, and combinations thereof. In preferred embodiments, the non-cellulose based gelling agent is alginate or agar.

[0146] In some embodiments, the gelling agent comprises alginate, and the alginate is present in the amorphous solid

in an amount of from 10-30 wt % of the amorphous solid (calculated on a dry weight basis). In some embodiments, alginate is the only gelling agent present in the amorphous solid. In other embodiments, the gelling agent comprises alginate and at least one further gelling agent, such as pectin.

[0147] In some embodiments, the amorphous solid comprises from about 1 wt %, 5 wt %, 10 wt %, 15 wt %, 20 wt % or 25 wt % to about 60 wt %, 50 wt %, 45 wt %, 40 wt % or 35 wt % of a gelling agent (all calculated on a dry weight basis). For example, the amorphous solid may comprise 1-50 wt %, 5-45 wt %, 10-40 wt % or 20-35 wt % of a gelling agent.

[0148] In some embodiments, the amorphous solid comprises from about 20 wt % 22 wt %, 24 wt % or 25 wt % to about 30 wt %, 32 wt % or 35 wt % of a gelling agent (all calculated on a dry weight basis). For example, the amorphous solid may comprise 20-35 wt % or 25-30 wt % of a gelling agent.

[0149] In some cases, the amorphous solid may comprise from about 1 wt %, 5 wt %, 10 wt %, 15 wt % or 20 wt % to about 60 wt %, 50 wt %, 40 wt %, 30 wt % or 25 wt % of a gelling agent (DWB). For example, the amorphous solid may comprise 10-40 wt %, 15-30 wt % or 20-25 wt % of a gelling agent (DWB).

[0150] In examples, the amorphous solid comprises gelling agent and filler, taken together, in an amount of from about 10 wt %, 20 wt %, 25 wt %, 30 wt %, or 35 wt % to about 60 wt %, 55 wt %, 50 wt %, or 45 wt % of the amorphous solid. In examples, the amorphous solid comprises gelling agent and filler, taken together, in an amount of from about 20 to 60 wt %, 25 to 55 wt %, 30 to 50 wt %, or 35 to 45 wt % of the amorphous solid.

[0151] In examples, the amorphous solid comprises gelling agent (i.e. without taking into account the amount of filler) in an amount of from about 5 wt %, 10 wt %, 15 wt %, 20 wt %, 25 wt %, 30 wt %, or 35 wt % to about 60 wt %, 55 wt %, 50 wt %, or 45 wt % of the amorphous solid. In examples, the amorphous solid comprises gelling agent (i.e. without taking into account the amount of filler) in an amount of from about 5 to 60 wt %, 20 to 60 wt %, 25 to 55 wt %, 30 to 50 wt %, or 35 to 45 wt % of the amorphous solid.

[0152] In some examples, alginate is comprised in the gelling agent in an amount of from about 5 to 40 wt % of the amorphous solid, or 15 to 40 wt %. That is, the amorphous solid comprises alginate in an amount of about 5 to 40 wt % by dry weight of the amorphous solid, or 15 to 40 wt %. In some examples, the amorphous solid comprises alginate in an amount of from about 20 to 40 wt %, or about 15 wt % to 35 wt % of the amorphous solid.

[0153] In some examples, pectin is comprised in the gelling agent in an amount of from about 3 to 15 wt % of the amorphous solid. That is, the amorphous solid comprises pectin in an amount of from about 3 to 15 wt % by dry weight of the amorphous solid. In some examples, the amorphous solid comprises pectin in an amount of from about 5 to 10 wt % of the amorphous solid.

[0154] In some examples, guar gum is comprised in the gelling agent in an amount of from about 3 to 40 wt % of the amorphous solid. That is, the amorphous solid comprises guar gum in an amount of from about 3 to 40 wt % by dry weight of the amorphous solid. In some examples, the amorphous solid comprises guar gum in an amount of from about 5 to 10 wt % of the amorphous solid. In some

examples, the amorphous solid comprises guar gum in an amount of from about 15 to 40 wt % of the amorphous solid, or from about 20 to 40 wt %, or from about 15 to 35 wt %.

[0155] In examples, the alginate is present in an amount of at least about 50 wt % of the gelling agent. In examples, the amorphous solid comprises alginate and pectin, and the ratio of the alginate to the pectin is from 1:1 to 10:1. The ratio of the alginate to the pectin is typically $>1:1$, i.e. the alginate is present in an amount greater than the amount of pectin. In examples, the ratio of alginate to pectin is from about 2:1 to 8:1, or about 3:1 to 6:1, or is approximately 4:1.

[0156] The amorphous solid may be formed by (a) forming a slurry comprising components of the amorphous solid or precursors thereof, (b) forming a layer of the slurry, (c) setting the slurry to form a gel, and (d) drying to form an amorphous solid.

[0157] The (b) forming a layer of the slurry typically comprises spraying, casting or extruding the slurry. In examples, the slurry layer is formed by electrospraying the slurry. In some examples, the slurry layer is formed by casting the slurry.

[0158] In some examples, (b) and/or (c) and/or (d), at least partially, occur simultaneously (for example, during electrospraying). In some examples, (b), (c) and (d) occur sequentially.

[0159] In some examples, the slurry is applied to a mold body. The layer may be formed on a mold body.

[0160] In examples, the slurry comprises gelling agent, aerosol-former material and active substance. The slurry may comprise these components in any of the proportions given herein in relation to the composition of the amorphous solid. For example, the slurry may comprise (on a dry weight basis):

[0161] gelling agent and, optionally, filler, wherein the amount of gelling agent and filler taken together is about 10 to 60 wt % of the slurry;

[0162] aerosol-former material in an amount of about 40 to 80 wt % of the slurry; and

[0163] optionally, active substance in an amount of up to about 20 wt % of the slurry.

[0164] The setting the gel (c) may comprise supplying a setting agent to the slurry. For example, the slurry may comprise sodium, potassium or ammonium alginate as a gel-precursor, and a setting agent comprising a calcium source (such as calcium chloride), may be added to the slurry to form a calcium alginate gel.

[0165] In examples, the setting agent comprises or consists of calcium acetate, calcium formate, calcium carbonate, calcium hydrogencarbonate, calcium chloride, calcium lactate, or a combination thereof. In some examples, the setting agent comprises or consists of calcium formate and/or calcium lactate. In particular examples, the setting agent comprises or consists of calcium formate. The inventors have identified that, typically, employing calcium formate as a setting agent results in an amorphous solid having a greater tensile strength and greater resistance to elongation.

[0166] The total amount of the setting agent, such as a calcium source, may be 0.5-5 wt % (calculated on a dry weight basis). Suitably, the total amount may be from about 1 wt %, 2.5 wt % or 4 wt % to about 4.8 wt % or 4.5 wt %. The inventors have found that the addition of too little setting agent may result in an amorphous solid which does not stabilise the amorphous solid components and results in these components dropping out of the amorphous solid. The

inventors have found that the addition of too much setting agent results in an amorphous solid that is very tacky and consequently has poor handleability.

[0167] When the amorphous solid does not contain tobacco, a higher amount of setting agent may need to be applied. In some cases the total amount of setting agent may therefore be from 0.5-12 wt % such as 5-10 wt %, calculated on a dry weight basis. Suitably, the total amount may be from about 5 wt %, 6 wt % or 7 wt % to about 12 wt % or 10 wt %. In this case the amorphous solid will not generally contain any tobacco.

[0168] In examples, supplying the setting agent to the slurry comprises spraying the setting agent on the slurry, such as a top surface of the slurry.

[0169] Alginate salts are derivatives of alginic acid and are typically high molecular weight polymers (10-600 kDa). Alginic acid is a copolymer of β -D-mannuronic (M) and α -L-guluronic acid (G) units (blocks) linked together with (1,4)-glycosidic bonds to form a polysaccharide. On addition of calcium cations, the alginate crosslinks to form a gel. It has been found that alginate salts with a high G monomer content more readily form a gel on addition of the calcium source. In some cases therefore, the gel-precursor may comprise an alginate salt in which at least about 40%, 45%, 50%, 55%, 60% or 70% of the monomer units in the alginate copolymer are α -L-guluronic acid (G) units.

[0170] In examples, the drying (d) removes from about 50 wt %, 60 wt %, 70 wt %, 80 wt % or 90 wt % to about 80 wt %, 90 wt % or 95 wt % (WWB) of water in the slurry.

[0171] In examples, the drying (d) reduces the cast material thickness by at least 80%, suitably 85% or 87%. For instance, the slurry is cast at a thickness of 2 mm, and the resulting dried amorphous solid material has a thickness of 0.2 mm.

[0172] In some examples, the slurry solvent consists essentially of or consists of water. In some examples, the slurry comprises from about 50 wt %, 60 wt %, 70 wt %, 80 wt % or 90 wt % of solvent (WWB).

[0173] In examples where the solvent consists of water, the dry weight content of the slurry may match the dry weight content of the amorphous solid. Thus, the discussion herein relating to the solid composition is explicitly disclosed in combination with the slurry aspect of the invention.

[0174] The amorphous solid may comprises a flavor. Suitably, the amorphous solid may comprise up to about 80 wt %, 70 wt %, 60 wt %, 55 wt %, 50 wt % or 45 wt % of a flavor. In some cases, the amorphous solid may comprise at least about 0.1 wt %, 1 wt %, 10 wt %, 20 wt %, 30 wt %, 35 wt % or 40 wt % of a flavor (all calculated on a dry weight basis). For example, the amorphous solid may comprise 1-80 wt %, 10-80 wt %, 20-70 wt %, 30-60 wt %, 35-55 wt % or 30-45 wt % of a flavor. In some cases, the flavor comprises, consists essentially of or consists of menthol.

[0175] The amorphous solid may comprises a filler.

[0176] In some embodiments, the amorphous solid comprises less than 60 wt % of a filler, such as from 1 wt % to 60 wt %, or 5 wt % to 50 wt %, or 5 wt % to 30 wt %, or 10 wt % to 20 wt %.

[0177] In other embodiments, the amorphous solid comprises less than 20 wt %, suitably less than 10 wt % or less than 5 wt % of a filler. In some cases, the amorphous solid comprises less than 1 wt % of a filler, and in some cases, comprises no filler.

[0178] In some such cases the amorphous solid comprises at least 1 wt % of the filler, for example, at least 5 wt %, at least 10 wt %, at least 20 wt % at least 30 wt %, at least 40 wt %, or at least 50 wt % of the filler. In some embodiments, the amorphous solid comprises 5-25 wt % of the filler.

[0179] The filler, if present, may comprise one or more inorganic filler materials, such as calcium carbonate, perlite, vermiculite, diatomaceous earth, colloidal silica, magnesium oxide, magnesium sulphate, magnesium carbonate, and suitable inorganic sorbents, such as molecular sieves. The filler may comprise one or more organic filler materials such as wood pulp, cellulose and cellulose derivatives (such as methylcellulose, hydroxypropyl cellulose, and carboxymethyl cellulose (CMC)). In particular cases, the amorphous solid comprises no calcium carbonate such as chalk.

[0180] In particular embodiments which include filler, the filler is fibrous. For example, the filler may be a fibrous organic filler material such as wood pulp, hemp fiber, cellulose or cellulose derivatives (such as methylcellulose, hydroxypropyl cellulose, and carboxymethyl cellulose (CMC)).

[0181] Without wishing to be bound by theory, it is believed that including fibrous filler in an amorphous solid may increase the tensile strength of the material. This may be particularly advantageous in examples wherein the amorphous solid is provided as a sheet, such as when an amorphous solid sheet circumscribes a rod of aerosolizable material.

[0182] In some embodiments, the amorphous solid does not comprise tobacco fibers. In particular embodiments, the amorphous solid does not comprise fibrous material.

[0183] In some embodiments, the aerosol generating material does not comprise tobacco fibers. In particular embodiments, the aerosol generating material does not comprise fibrous material.

[0184] The aerosol-generating material may comprise one or more active substances and/or flavors, one or more aerosol-former materials, and optionally one or more other functional material.

[0185] In some embodiments, the amorphous solid additionally comprises an active substance. For example, in some cases, the amorphous solid additionally comprises a tobacco material and/or nicotine. In some embodiments, the amorphous solid comprises powdered tobacco and/or nicotine and/or a tobacco extract.

[0186] In some cases, the amorphous solid may comprise 5-60 wt % (calculated on a dry weight basis) of a tobacco material and/or nicotine. In some cases, the amorphous solid may comprise from about 1 wt %, 5 wt %, 10 wt %, 15 wt %, 20 wt % or 25 wt % to about 70 wt %, 60 wt %, 50 wt %, 45 wt %, 40 wt %, 35 wt %, or 30 wt % (calculated on a dry weight basis) of an active substance. In some cases, the amorphous solid may comprise from about 1 wt %, 5 wt %, 10 wt %, 15 wt %, 20 wt % or 25 wt % to about 70 wt %, 60 wt %, 50 wt %, 45 wt %, 40 wt %, 35 wt %, or 30 wt % (calculated on a dry weight basis) of a tobacco material. For example, the amorphous solid may comprise 10-50 wt %, 15-40 wt % or 20-35 wt % of a tobacco material. In some cases, the amorphous solid may comprise from about 1 wt %, 2 wt %, 3 wt % or 4 wt % to about 20 wt %, 18 wt %, 15 wt % or 12 wt % (calculated on a dry weight basis) of nicotine. For example, the amorphous solid may comprise 1-20 wt %, 2-18 wt % or 3-12 wt % of nicotine.

[0187] In some cases, the amorphous solid comprises an active substance such as tobacco extract. In some cases, the amorphous solid may comprise 5-60 wt % (calculated on a dry weight basis) of tobacco extract. In some cases, the amorphous solid may comprise from about 5 wt %, 10 wt %, 15 wt %, 20 wt % or 25 wt % to about 60 wt %, 50 wt %, 45 wt %, 40 wt %, 35 wt %, or 30 wt % (calculated on a dry weight basis) tobacco extract. For example, the amorphous solid may comprise 10-50 wt %, 15-40 wt % or 20-35 wt % of tobacco extract.

[0188] The tobacco extract may contain nicotine at a concentration such that the amorphous solid comprises 1 wt % 1.5 wt %, 2 wt % or 2.5 wt % to about 6 wt %, 5 wt %, 4.5 wt % or 4 wt % (calculated on a dry weight basis) of nicotine. In some cases, there may be no nicotine in the amorphous solid other than that which results from the tobacco extract.

[0189] In some embodiments the amorphous solid comprises no tobacco material but does comprise nicotine. In some such cases, the amorphous solid may comprise from about 1 wt %, 2 wt %, 3 wt % or 4 wt % to about 20 wt %, 18 wt %, 15 wt % or 12 wt % (calculated on a dry weight basis) of nicotine. For example, the amorphous solid may comprise 1-20 wt %, 2-18 wt % or 3-12 wt % of nicotine.

[0190] In some cases, the total content of active substance and/or flavor may be at least about 0.1 wt %, 1 wt %, 5 wt %, 10 wt %, 20 wt %, 25 wt % or 30 wt %. In some cases, the total content of active substance and/or flavor may be less than about 90 wt %, 80 wt %, 70 wt %, 60 wt %, 50 wt % or 40 wt % (all calculated on a dry weight basis).

[0191] In some cases, the total content of tobacco material, nicotine and flavor may be at least about 0.1 wt %, 1 wt %, 5 wt %, 10 wt %, 20 wt %, 25 wt % or 30 wt %. In some cases, the total content of active substance and/or flavor may be less than about 90 wt %, 80 wt %, 70 wt %, 60 wt %, 50 wt % or 40 wt % (all calculated on a dry weight basis).

[0192] The aerosol-generating composition may comprise one or more active substances. In examples, the amorphous solid comprises one or more active substances, e.g. up to about 20 wt % of the amorphous solid. In examples, the amorphous solid comprises active substance in an amount of from about 1 wt %, 5 wt %, 10 wt %, or 15 wt % to about 20 wt %, 15 wt %, 15 wt % or 5 wt % of the amorphous solid.

[0193] The active substance may comprise a physiologically and/or olfactory active substance which is included in the aerosol-generating composition in order to achieve a physiological and/or olfactory response.

[0194] Tobacco material may be present in the aerosol-generating composition in an amount of from about 50 to 95 wt %, or about 60 to 90 wt %, or about 70 to 90 wt %, or about 75 to 85 wt %.

[0195] The tobacco material may be present in any format, but is typically fine-cut (e.g. cut into narrow shreds). Fine-cut tobacco material may advantageously be blended with the amorphous solid to provide an aerosol-generating composition which has an even dispersion of tobacco material and amorphous solid throughout the aerosol-generating composition.

[0196] In examples, the tobacco material comprises one or more of ground tobacco, tobacco fiber, cut tobacco, extruded tobacco, tobacco stem, reconstituted tobacco and/or tobacco extract. Surprisingly, the inventors have identified that it is possible to use a relatively large amount of lamina tobacco

in the aerosol-generating composition and still provide an acceptable aerosol when heated by a non-combustible aerosol provision system. Lamina tobacco typically provides superior sensory characteristics. In examples, the tobacco material comprises lamina tobacco in an amount of at least about 50 wt %, 60 wt %, 70 wt %, 80 wt %, 85 wt %, 90 wt %, or 95 wt % of the tobacco material. In particular examples, the tobacco material comprises cut tobacco in an amount of at least about 50 wt %, 60 wt %, 70 wt %, 80 wt %, 85 wt %, 90 wt %, or 95 wt % of the tobacco material.

[0197] The tobacco used to produce tobacco material may be any suitable tobacco, such as single grades or blends, cut rag or whole leaf, including Virginia and/or Burley and/or Oriental.

[0198] In some embodiments the one or more other functional materials may comprise one or more of pH regulators, coloring agents, preservatives, binders, fillers, stabilizers, and/or antioxidants.

[0199] In some cases, the amorphous solid may additionally comprise an emulsifying agent, which emulsified molten flavor during manufacture. For example, the amorphous solid may comprise from about 5 wt % to about 15 wt % of an emulsifying agent (calculated on a dry weight basis), suitably about 10 wt %. The emulsifying agent may comprise acacia gum.

[0200] In some embodiments, the amorphous solid is a hydrogel and comprises less than about 20 wt % of water calculated on a wet weight basis. In some cases, the hydrogel may comprise less than about 15 wt %, 12 wt % or 10 wt % of water calculated on a wet weight basis. In some cases, the hydrogel may comprise at least about 1 wt %, 2 wt % or at least about 5 wt % of water (WWB).

[0201] The amorphous solid may have any suitable water content, such as from 1 wt % to 15 wt %. Suitably, the water content of the amorphous solid is from about 5 wt %, 7 wt % or 9 wt % to about 15 wt %, 13 wt % or 11 wt % (WWB), most suitably about 10 wt %. The water content of the amorphous solid may, for example, be determined by Karl-Fischer-titration or Gas Chromatography with Thermal Conductivity Detector (GC-TCD).

[0202] In some cases, the amorphous solid may consist essentially of, or consist of a gelling agent, water, an aerosol generating agent, a flavor, and optionally an active substance.

[0203] In some cases, the amorphous solid may consist essentially of, or consist of a gelling agent, water, an aerosol generating agent, a flavor, and optionally a tobacco material and/or a nicotine source.

[0204] In examples, the amorphous solid consists essentially of, or consists of a gelling agent, aerosol generating agent, active substance, and water. In examples, the amorphous solid consists essentially of, or consists of a gelling agent, aerosol generating agent, and water.

[0205] In examples, the amorphous solid does not comprise a flavorant; in particular examples, the amorphous solid does not comprise an active substance.

[0206] In some embodiments the aerosol generating material comprises an amorphous solid, the amorphous solid comprising:

[0207] 1-60 wt % of a gelling agent;

[0208] 0.1-50 wt % of an aerosol generating agent; and

[0209] 0.1-80 wt % of a flavor;

wherein these weights are calculated on a dry weight basis

[0210] In some embodiments, the amorphous solid comprises 1-80 wt % of a flavor (dry weight basis).

[0211] In some embodiments, the amorphous solid comprising:

[0212] 1-50 wt % of a gelling agent;

[0213] 0.1-50 wt % of an aerosol generating agent; and

[0214] 30-60 wt % of a flavor;

wherein these weights are calculated on a dry weight basis.

[0215] In alternative embodiments of the aerosol generating material, the aerosol generating material comprises an amorphous solid, the amorphous solid comprising:

[0216] 1-60 wt % of a gelling agent;

[0217] 5-60 wt % of an aerosol generating agent; and

[0218] 10-60 wt % of a tobacco extract;

wherein these weights are calculated on a dry weight basis.

[0219] In some embodiments, the amorphous solid comprises:

[0220] 1-60 wt % of a gelling agent;

[0221] 20-60 wt % of an aerosol generating agent; and

[0222] 10-60 wt % of a tobacco extract;

wherein these weights are calculated on a dry weight basis.

[0223] In some embodiments, the amorphous solid comprises 20-35 wt % of the gelling agent; 10-25 wt % of the aerosol-former material; 5-25 wt % of the filler comprising fibers; and 35-50 wt % of the flavorant and/or active substance.

[0224] In some cases, the amorphous solid may consist essentially of, or consist of a gelling agent, an aerosol generating agent a tobacco extract, water, and optionally a flavor. In some cases, the amorphous solid may consist essentially of, or consist of glycerol, alginates and/or pectins, a tobacco extract and water.

[0225] In some embodiments, the amorphous solid may have the following composition (DWB): gelling agent (preferably comprising alginate) in an amount of from about 5 wt % to about 40 wt %, or about 10 wt % to 30 wt %, or about 15 wt % to about 25 wt %; tobacco extract in an amount of from about 30 wt % to about 60 wt %, or from about 40 wt % to 55 wt %, or from about 45 wt % to about 50 wt %; aerosol generating agent (preferably comprising glycerol) in an amount of from about 10 wt % to about 50 wt %, or from about 20 wt % to about 40 wt %, or from about 25 wt % to about 35 wt % (DWB).

[0226] In one embodiment, the amorphous solid comprises about 20 wt % alginate gelling agent, about 48 wt % Virginia tobacco extract and about 32 wt % glycerol (DWB).

[0227] The "thickness" of the amorphous solid describes the shortest distance between a first surface and a second surface. In embodiments where the amorphous solid is in the form of a sheet, the thickness of the amorphous solid is the shortest distance between a first planar surface of the sheet and a second planar surface of the sheet which opposes the first planar surface of the sheet.

[0228] In some cases, the aerosol-forming amorphous solid layer has a thickness of about 0.015 mm to about 1.5 mm, suitably about 0.05 mm to about 1.5 mm or 0.05 mm to about 1.0 mm. Suitably, the thickness may be in the range of from about 0.1 mm or 0.15 mm to about 1.0 mm, 0.5 mm or 0.3 mm.

[0229] In some cases, the amorphous solid may have a thickness of about 0.015 mm to about 1.0 mm. Suitably, the thickness may be in the range of about 0.05 mm, 0.1 mm or 0.15 mm to about 0.5 mm or 0.3 mm.

[0230] A material having a thickness of 0.2 mm is particularly suitable. The amorphous solid may comprise more than one layer, and the thickness described herein refers to the aggregate thickness of those layers.

[0231] It has been that if the aerosol-generating material or amorphous solid is too thick, then heating efficiency is compromised. This adversely affects the power consumption in use. Conversely, if the aerosol-generating material or amorphous solid is too thin, it is difficult to manufacture and handle; a very thin material is harder to cast and may be fragile, compromising aerosol formation in use.

[0232] The thickness stipulated herein is a mean thickness for the material. In some cases, the amorphous solid thickness may vary by no more than 25%, 20%, 15%, 10%, 5% or 1%.

[0233] In some examples, the amorphous solid in sheet form may have a tensile strength of from around 200 N/m to around 900 N/m. In some examples, such as where the amorphous solid does not comprise a filler, the amorphous solid may have a tensile strength of from 200 N/m to 400 N/m, or 200 N/m to 300 N/m, or about 250 N/m.

[0234] Such tensile strengths may be particularly suitable for embodiments wherein the aerosol generating material is formed as a sheet and then shredded and incorporated into an aerosol generating article. In some examples, such as where the amorphous solid comprises a filler, the amorphous solid may have a tensile strength of from 600 N/m to 900 N/m, or from 700 N/m to 900 N/m, or around 800 N/m. Such tensile strengths may be particularly suitable for embodiments wherein the aerosol generating material is included in an aerosol generating article/assembly as a rolled sheet, suitably in the form of a tube.

[0235] In some examples, the amorphous solid in sheet form may have a tensile strength of from around 200 N/m to around 2600 N/m. In some examples, the amorphous solid may have a tensile strength of from 600 N/m to 2000 N/m, or from 700 N/m to 1500 N/m, or around 1000 N/m. Such tensile strengths may be particularly suitable for embodiments wherein the aerosol-generating material comprising the amorphous solid is formed and incorporated into an aerosol-generating consumable as a sheet.

[0236] The aerosol generating material comprising the amorphous solid may have any suitable area density, such as from 30 g/m² to 120 g/m². In some cases, the sheet may have a mass per unit area of 80-120 g/m², or from about 70 to 110 g/m², or particularly from about 90 to 110 g/m², or suitably about 100 g/m² (so that it has a similar density to cut rag tobacco and a mixture of these substances will not readily separate). In some cases, the sheet may have a mass per unit area of about 30 to 70 g/m², 40 to 60 g/m², or 25-60 g/m² and may be used to wrap an aerosolizable material such as tobacco.

[0237] All percentages by weight described herein (denoted wt %) are calculated on a dry weight basis, unless explicitly stated otherwise. All weight ratios are also calculated on a dry weight basis. A weight quoted on a dry weight basis refers to the whole of the extract or slurry or material, other than the water, and may include components which by themselves are liquid at room temperature and pressure, such as glycerol. Conversely, a weight percentage quoted on a wet weight basis refers to all components, including water.

[0238] The amorphous solid may comprise a colorant. The addition of a colorant may alter the visual appearance of the amorphous solid. The presence of colorant in the amorphous

solid may enhance the visual appearance of the amorphous solid and the aerosol-generating material. By adding a colorant to the amorphous solid, the amorphous solid may be color-matched to other components of the aerosol-generating material or to other components of an article comprising the amorphous solid.

[0239] A variety of colorants may be used depending on the desired color of the amorphous solid. The color of amorphous solid may be, for example, white, green, red, purple, blue, brown or black. Other colors are also envisaged. Natural or synthetic colorants, such as natural or synthetic dyes, food-grade colorants and pharmaceutical-grade colorants may be used. In certain embodiments, the colorant is caramel, which may confer the amorphous solid with a brown appearance. In such embodiments, the color of the amorphous solid may be similar to the color of other components (such as tobacco material) in an aerosol-generating material comprising the amorphous solid. In some embodiments, the addition of a colorant to the amorphous solid renders it visually indistinguishable from other components in the aerosol-generating material.

[0240] The colorant may be incorporated during the formation of the amorphous solid (e.g. when forming a slurry comprising the materials that form the amorphous solid) or it may be applied to the amorphous solid after its formation (e.g. by spraying it onto the amorphous solid).

[0241] In some embodiments of any of the above embodiments, talcum powder, calcium carbonate powder or other powder is applied to the exposed surface of at least one discrete portion of aerosol-generating material. This may reduce the level of tackiness or adhesion of the aerosol-generating material.

[0242] In the following discussions of the accompanying drawings, where the same element is present in a more than one embodiment the same reference numeral is used for that element throughout, where there are similar elements similar reference numerals (the same numeral plus a multiple of 100) are used.

[0243] With reference to FIG. 1, an aerosol provision device 2 comprises a casing 4 within which is located a heater assembly 6. The heater assembly 6 is comprised of a heating chamber 8 and a heater 10. The heater 10 can be an electrical resistance heater or a magnetic field generator for use with a susceptor.

[0244] The heating chamber 8 defines an opening or mouth 12 at a first end of the heating chamber 8. At the opposite end of the heating chamber 8 is an aperture 14. The aperture 14 is in fluid communication with a mouth piece 16 via a conduit 18.

[0245] Also located within the casing 4 is a controller 20 which is in electronic communication with and controls the functioning of the heater 10. The controller 20 may include a memory (not shown) within which one or more tables relating to the operation of the heater 10 may be stored. The heater 10 and controller 20 are powered by a power source 22. The power source 22 is a rechargeable battery. In other embodiments the power source may be other appropriate sources of electrical power.

[0246] The aerosol provision device 2 is suitable for use with a consumable 24. The consumable 24 is comprised of one or more discrete portions of aerosol-generating material 26 supported on first surface 30 of a support 28. The discrete portions of aerosol-generating material 26 are supported on the support 28 in a square grid pattern. Other, non-illustrated

embodiments of the consumable **24** may include more or less discrete portions of aerosol-generating material **26** than shown in FIG. 1, including a single portion of aerosol-generating material **26**, and those portions may be distributed on the surface of the support **28** in any pattern. The discrete portions of aerosol-generating material **26** are shown to have an approximately circular shape in FIG. 1, they may, in other embodiments, be of other shapes.

[0247] With reference to FIGS. 2 to 8, a first embodiment of a method of manufacture of the consumable **24** is as follows:

[0248] With reference to FIGS. 2 and 4, a mold body **40** is provided. The mold body **40** is a sheet material of uniform thickness t formed of a material that can be debossed or embossed. An example of such a material is cardboard. The mold body **40** has a first surface **30** into which one or more mold recesses **42** are to be formed. In FIGS. 1 to 8 nine mold recesses **42** are illustrated (but not all numbered for the sake of clarity). It is to be understood that fewer or more mold recesses **42** may be formed in the surface **30** of the mold body **40** if that is desired. It is also to be understood that the mold body **40** may be larger than a single consumable **24** and that, when that is the case, more than one consumable **24** may be made using a single mold body **40**.

[0249] With reference to FIG. 3, the first embodiment of a method of manufacture of the consumable **24** uses a debossing apparatus **44** as schematically illustrated in FIG. 3 to form the mold recesses **42** in the surface **30** of the mold body **40**. The debossing apparatus **44** includes a debossing cylinder **46** and a flat surface **48**. The debossing cylinder **46** has a plurality of raised portions **50** (not all numbered) distributed around the cylindrical surface **52** of the debossing cylinder **46**.

[0250] The raised portions **50** are, in the illustrated embodiment, square or rectangular and all of the same shape and size. In other non-illustrated embodiments the raised portions may be of different shapes, for example longitudinally extending, round or oval, and/or not all the raised portions are the same shape as each other.

[0251] The cylindrical surface **52** of the debossing cylinder **46** is spaced from the flat surface **48** by a distance that is about the same as the thickness t . The raised portions **50** of the debossing cylinder **46** stand proud of the cylindrical surface **52** by a distance that is less than the thickness t . The debossing cylinder **46** is caused to rotate around a central axle **54** by a source of rotational movement (not shown). Whilst debossing cylinder **46** is rotating the mold body **40** is fed into the gap between the debossing cylinder **46** and flat plate **48**. The rotation of the debossing cylinder **46** draws the mold body through the gap and causes the raised portions **50** to form a plurality of mold recesses **42** in the surface **30** of the mold body **40**.

[0252] A release agent (not shown) is then applied to at least the surface of the mold recesses **42**. The application may be by spraying the release agent. In some examples, the release agent may be sprayed over the whole of the surface **30** and the surface of the mold recesses **42**. The release agent is selected so that when aerosol generating material **56** is subsequently applied to the mold recesses **42** the aerosol generating material **56** releases from the surface of the mold recess with a pull off stress that is less than the stress that will cause damage to the aerosol generating material **56**, for example a stress of X pascals (Pa).

[0253] With reference to FIG. 5, a source (not shown) of aerosol generating material **56** supplies that aerosol generating material **56** to one or more nozzles **58** (only one is shown in FIG. 5 for clarity). The nozzles **58** apply a portion of aerosol generating material **46** to the surface **30** of the mold body **40** in and around each of the mold recesses **42**. The number of nozzles **58** may be equal to, or may be a factor of, the number of mold recesses **42**. In some non-illustrated embodiments there may be more than one source of aerosol generating material **56**, with at least two of those sources including aerosol generating material **56** which are of different compositions from each other. The different compositions may include different active substances and/or flavorants.

[0254] With reference to FIG. 6, once aerosol generating material **56** has been applied to each mold recess **42**, a scraper in the form of a doctor blade **60** is drawn across the surface **30**. The doctor blade **60** clears any aerosol generating material **56** that is excess to that required to fill the mold recesses **42** off the surface **30** of the mold body **40** and creates an exposed surface **66** of aerosol generating material **56**. The excess aerosol generating material **56** may be returned to the source of aerosol generating material **56** or discarded.

[0255] The mold body **40** and aerosol generating material **56** is now exposed to at least one condition that is suitable to allow, facilitate or promote a characteristic of the aerosol generating material **56** to change. Such a condition may be, but is not limited to, a period of rest, a predetermined curing temperature, an exposure to electromagnetic radiation, or a mixture thereof. The characteristic of the aerosol generating material **56** to change in the first embodiment of the method of the present disclosure is the weight of the aerosol generating material **56**. This change is the result of the aerosol generating material **56** being applied to the mold body **40** as a slurry and subsequently drying after the excess aerosol generating material **56** has been removed from the surface **30** of the mold body **40**. In other embodiments the aerosol generating material **56** dries or partially dries before any excess aerosol generating material **56** is scraped off the surface **30**.

[0256] With reference to FIG. 7, once a desired level of change to the characteristic of the aerosol generating material **56** has occurred a sheet of material **62** having a first surface **64** and a second surface **68** is laid over the mold body **40** so that the surface **64** of sheet material **62** is in contact with the exposed surfaces **66** of the aerosol generating material **56** and the part of surface **30** of mold body **40** that does not form part of a mold recess **42**. The surface **64** of the sheet material **62** is then allowed or caused to bond with the exposed surfaces **66** of the aerosol generating material **56**. The exposed surfaces **66** of the aerosol generating material will typically bond with the surface **64** of the sheet material **62** because of inherent stickiness on the part of the aerosol generating material **56** or because surface **66** of the aerosol generating material **56** is caused to become sticky.

[0257] The sheet material **62** is, in the currently described embodiment, a sheet of susceptor material, for example an aluminium foil or film. In other embodiments the sheet material **62** may be a sheet of an alternative susceptor, a sheet of a heat transmissive material, or a sheet of an alternative material. The choice of the material to form the sheet material **62** will depend at least in part on the intended

mode of heating the consumable **24** to be formed by the method being herein described.

[0258] With reference to FIG. 8, once the bonding of the surface **64** of the sheet material **62** with the exposed surface **66** of the aerosol generating material **56** has reached a level where the pull off stress of the surface **64** from the exposed surface **66** has reached a value of Y Pa the sheet material **62** is removed from the mold body **40** along with the aerosol generating material **56** from the mold recesses **42**. Pull off stress Y Pa is greater than pull off stress X Pa (which is the pull off stress for the interaction between the aerosol generating material **56** and the release agent treated surface of the mold recesses **42**). The portions of the aerosol generating material **56** that are bonded to the surface **64** of the sheet material **62** will be the discreet portions **26** of the aerosol generating material **56** in the consumable **24**.

[0259] With reference to FIG. 9, the surface **68** of the sheet material **62** is next attached to a surface **72** of a support **70** to form the consumable **24**. The support **70** is formed from card, a plastics material such as polyether ether ketone (PEEK), or another suitable material to form a support for the consumable **24**.

[0260] With reference to FIG. 10, an alternative embodiment of a consumable **124** is shown. The method of making the alternative embodiment of consumable **124** is as shown in FIGS. 2 to 7 and as described above with the exceptions discussed below. The reference numerals used in connection with FIG. 10 are as for FIGS. 2 to 7 where the elements illustrated are the same elements.

[0261] When making the consumable **124** there is no application of a release agent following the forming of the mold recesses **42**. This is because the aerosol generating material **56** that is placed in the mold recesses **42** is not subsequently released from the mold recesses **42** other than as aerosol when the consumable **124** is used.

[0262] Optionally, prior to or at the same time as the placing of the surface **64** of the sheet material **62** against the exposed surfaces **66** of the aerosol generating material **56** and the part of surface **30** of mold body **40** that does not form part of a mold recess **42**, an adhesive (not shown) is applied to one or both of the part of surface **30** of mold body **40** that does not form part of a mold recess **42**, and the surface **64** of the sheet material **62**.

[0263] Alternatively, the sheet material **62** is held in position relative to the mold body **40** by virtue of an inherent stickiness of the aerosol generating material **56** causing the surface **64** to stick to the exposed surface **66** of the aerosol generating material **56**.

[0264] Once the sheet material **62** is held in position relative to the mold body **40** then the sheet material **62**, aerosol generating material **56**, and mold body **40** are perforated to produce a plurality of perforations **74** by a suitable perforation means (not shown). The perforations **74** may have a cross-sectional area of at least 0.01 mm^2 , at least 0.05 mm^2 , at least 0.1 mm^2 , at least 0.5 mm^2 , at least 1 mm^2 , at least 2 mm^2 , or at least 3 mm^2 .

[0265] In alternative non-illustrated embodiments of the present disclosure the perforations **74** do not extend through the whole of the depth of the consumable **124**, but at least partially pass through the aerosol generating material **56**, and extend to one of the outside surfaces of the consumable **124**.

[0266] In the consumable **124** the support for the consumable is the mold body **40**, and that mold body **40** provides

structural strength to the consumable **124**. The sheet material **62** is a sheet of susceptor material, for example an aluminium foil. In other non-illustrated embodiments the sheet material **62** may be a sheet of an alternative susceptor, a sheet of a heat transmissive material, or a sheet of an alternative material. The choice of the material to form the sheet material **62** will depend at least in part on the intended mode of heating the consumable **124** to be formed by the method being herein described.

[0267] With reference to FIGS. 11 to 16, in a second embodiment of the present disclosure a mold body **240** is provided. The mold body **240** is a sheet material of uniform thickness t formed of a material that can be plastically deformed. The mold body **240** is of the same appearance as the mold body **40** of FIG. 2.

[0268] An example of such a material is The mold body **240** has a first surface **30** into which one or more mold recesses **242** are to be formed and a second surface out of which the mold recesses are to extend. In FIGS. 11 to 16 three mold recesses **242** are illustrated. It is to be understood that fewer or more mold recesses **242** may be formed in the mold body **240** if that is desired. It is also to be understood that the mold body **240** may be larger than a single consumable **224** and that, when that is the case, more than one consumable **224** may be made using a single mold body **240**.

[0269] With reference to FIG. 11, the second embodiment of a method of manufacture of the consumable **224** uses an vacuum blister forming apparatus **244** as schematically illustrated in FIG. 11 to form the mold recesses **242** in the mold body **240**. The blister forming apparatus **244** includes a bed **246** having a bed surface **248**. Extending into the bed **246** from the bed surface **248** are a plurality of blister molds **250**. Each blister mold **250** is in fluid communication with a vacuum pump **252** via conduit network **254**.

[0270] In essence, the mold body **240** is laid onto the bed surface **248** and the vacuum pump **252** turned on. The vacuum created by the vacuum pump **252** in the conduit network **254** and blister molds **250** causes the mold body to be plastically deformed to match the surface profile of the bed surface **248** and blister molds **250**.

[0271] With reference to FIG. 12, once the plastic deformation of the mold body **240** has been completed, the mold body **242** is removed from the blister forming apparatus **244**. The mold body **240** now includes a plurality of mold recesses **242**.

[0272] With reference to FIG. 13, a source (not shown) of aerosol generating material **56** supplies that aerosol generating material **56** to one or more nozzles (not shown). The nozzles apply aerosol generating material **56** to the surface **230** of the mold body **240** and/or each of the mold recesses **242**. In some unillustrated embodiments there may be more than one source of aerosol generating material **56**, with at least two of those sources including aerosol generating material **56** containing different compositions to each other. The different compositions may include different active substances and or flavorants. The different composition aerosol generating material **56** may be applied to different portions of the mold body **240**.

[0273] With reference to FIG. 14, once aerosol generating material **56** has been applied to the mold body **240**, a scraper in the form of a doctor blade **256** is drawn across the surface **230**. The doctor blade **256** clears any aerosol generating material **56** that is excess to that required to fill the mold recesses **242** off the surface **230** of the mold body **240** and

creates an exposed surface 258 of aerosol generating material 56. The excess aerosol generating material 56 may be returned to the source of aerosol generating material 56 or discarded.

[0274] The mold body 240 and aerosol generating material 56 is now exposed to at least one condition that is suitable to allow, facilitate or promote a characteristic of the aerosol generating material 56 to change. Such a condition may be, but is not limited to, a period of rest, a predetermined curing temperature, an exposure to electromagnetic radiation, or a mixture thereof. The characteristic of the aerosol generating material 56 to change in the first embodiment of the method of the present disclosure is the weight of the aerosol generating material 56. This change is the result of the aerosol generating material 56 being applied to the mold body 240 as a slurry and subsequently drying after the excess aerosol generating material 56 has been removed from the surface 230 of the mold body 240.

[0275] With reference to FIG. 15, once a desired level of change to the characteristic of the aerosol generating material 56 has occurred, a sheet of material 260 having a surface 262 is laid over the mold body 240 so that the surface 262 of sheet material 260 is in contact with the exposed surfaces 258 of the aerosol generating material 56 and the part of surface 230 of mold body 240 that does not form part of a mold recess 242. The surface 262 of the sheet material 260 is then allowed to bond or caused to bond with the exposed surfaces 258 of the aerosol generating material 56. The exposed surfaces 258 of the aerosol generating material will typically bond with the surface 262 of the sheet material 260 because of inherent stickiness on the part of the aerosol generating material 56 or because the exposed surface 258 of the aerosol generating material 56 is caused to become sticky.

[0276] Optionally, prior to or at the same time as the placing of the surface 262 of the sheet material 260 against the exposed surfaces 258 of the aerosol generating material 56 and the part of surface 230 of mold body 240 that does not form part of a mold recess 242, an adhesive (not shown) is applied to one or both of the part of surface 230 of mold body 240 that does not form part of a mold recess 242, and the surface 262 of the sheet material 260.

[0277] The sheet material 260 is, in the currently described embodiment, a sheet of susceptor material, for example an aluminium foil. In other embodiments the sheet material 260 may be a sheet of an alternative susceptor, a sheet of a heat transmissive material, or a sheet of an alternative material. The choice of the material to form the sheet material 260 will depend at least in part on the intended mode of heating the consumable 224 to be formed by the method being herein described.

[0278] With reference to FIG. 16, once the sheet material 260 is held in position relative to the mold body 240 then the sheet material 260, aerosol generating material 56, and mold body 240 are perforated to produce a plurality of perforations 264 by a suitable perforation means (not shown). The perforations 264 may have a cross-sectional area of at least 0.01 mm², at least 0.05 mm², at least 0.1 mm², at least 0.5 mm², at least 1 mm², at least 2 mm², or at least 3 mm².

[0279] In alternative non-illustrated embodiments of the present disclosure the perforations 264 do not extend through the whole of the depth of the consumable 224, but

at least partially pass through the aerosol generating material 56, and extend to one of the outside surfaces of the consumable 224.

[0280] In the consumable 224 the support for the consumable is the mold body 240, and that mold body 240 provides structural strength to the consumable 224. The sheet material 262 is a sheet of susceptor material, for example an aluminium foil. In other non-illustrated embodiments the sheet material 260 may be a sheet of an alternative susceptor, a sheet of a heat transmissive material, or a sheet of an alternative material. The choice of the material to form the sheet material 260 will depend at least in part on the intended mode of heating the consumable 224 to be formed by the method being herein described.

[0281] With reference to FIG. 17, in an alternative embodiment of the second embodiment of a method according to the preset disclosure a consumable 324 includes a mold body 240 which is a laminate with a support layer 266 and a susceptor layer 268. The support layer 266 is comprised of a suitable support material. The susceptor layer forms the surface 230 of the mold body 240. The sheet material 260 is a material suitable for protecting the aerosol generating material 56 prior to use of the consumable 324. The consumable again includes perforations 264 as described in association with FIG. 16.

[0282] In an alternative non-illustrated embodiment of the consumable 324 the sheet material 264 is absent or removed prior to use of the consumable.

[0283] The various embodiments described herein are presented only to assist in understanding and teaching the claimed features. These embodiments are provided as a representative sample of embodiments only, and are not exhaustive and/or exclusive. It is to be understood that advantages, embodiments, examples, functions, features, structures, and/or other aspects described herein are not to be considered limitations on the scope of the disclosure as defined by the claims or limitations on equivalents to the claims, and that other embodiments may be utilized and modifications may be made without departing from the scope of the claimed disclosure. Various embodiments of the disclosure may suitably comprise, consist of, or consist essentially of, appropriate combinations of the disclosed elements, components, features, parts, steps, means, etc, other than those specifically described herein. In addition, this disclosure may include other disclosures not presently claimed, but which may be claimed in future.

1. A method of manufacture of an article, in which the article comprises a support and aerosol generating material, in which the method comprises the steps of

- (a) providing a mold body,
- (b) forming one or more mold recesses extending into a first surface of the mold body,
- (c) applying at least one discrete portion of aerosol generating material to the first surface of the mold body, in which

each mold recess extends into the first surface of the mold body,

at least one discrete portion of aerosol generating material at least partially overlies a mold recess, or at least one discrete portion of aerosol generating material at least partially overlies the position where a mold recess will be formed in step (b).

2. A method according to claim 1 in which the article is shaped and dimensioned for use as a consumable for use with a non-combustible aerosol provision system.

3. A method according to claim 1 in which the method further comprises a step of

(d) separating the article into two or more consumable portions,

in which each consumable portion is shaped and dimensioned for use as a consumable for use with an apparatus for heating an aerosol generating material to volatilize at least one component of the aerosol generating material.

4. A method according to claim 1 in which the aerosol generating material applied to the first surface of the mold body in step (c) is an aerosol generating material slurry.

5. A method according to claim 4 in which the method comprises a further method step of

(e) allowing or causing the aerosol generating material slurry to set,

in which the aerosol generating slurry sets to form an aerosol generating material, and step (e) occurs after step (c).

6. A method according to claim 1 in which the aerosol generating material is an aerosol generating film.

7. A method according to claim 1 in which the aerosol generating material comprises a binder and an aerosol former.

8. A method according to claim 7 in which the aerosol generating material comprises an active.

9. A method according to claim 7 in which the binder is a gelling agent.

10. A method according to claim 1 in which steps (a) and (b) are performed before step (c).

11. A method according to claim 10 in which steps (a) and (b) are performed as a separate process to step (c), and the product of steps (a) and (b) is stored and/or transported between different locations before step (c) is performed.

12. A method according to claim 1 in which step (c) is performed after step (a) and before step (b).

13. A method according to claim 1 in which the method comprises a further step of

(f) passing a scraper across at least part of the first surface of the mold body after step (c) has been performed and before or after step (e) has been performed.

14. A method according to claim 1 in which step (c) comprises applying aerosol generating material to at least the portions of the first surface of the mold body that comprise a mold recess.

15. A method according to claim 1 in which step (c) comprises applying aerosol generating material to substantially all of the first surface of the mold body.

16. A method according to claim 1 in which the method comprises a further step of

(g) overlaying the first surface of the mold body with a layer of material.

17. A method according to claim 16 in which step (g) is performed after step (c) and after step (f) if step (f) is to be performed.

18. A method according to claim 16 in which the method comprises a further step of

(h) causing the aerosol generating material to bond to the layer of material,

in which step (h) is performed after step (g).

19. A method according to claim 18 in which the method comprises the further steps of

(i) applying a release agent to the first surface of the mold body, and

(j) removing the layer of material with the aerosol generating material bonded thereto from the mold body, in which step (i) is performed before step (c), and step (j) is performed after step (h).

20. A method according to claim 19 in which the layer of material is attached to the support after step (i).

21. A method according to claim 20 in which the layer of material is attached to the support with the surface of the layer of material to which the aerosol generating material is bonded facing away from the support.

22. A method according to claim 16 in which the layer of material comprises a susceptor.

23. A method according to claim 16 in which the support comprises the layer of material.

24. A method according to claim 1 in which the support comprises the mold body.

25. A method according to claim 23 in which the support comprises a susceptor.

26. A method according to claim 1 in which the method comprises a further step of

(k) applying a layer of a susceptor to the first surface of the mold body,

in which step (k) is performed after step (a) and before step (c).

27. A method according to claim 22, in which the susceptor is a metallic foil or a metallic film.

28. A method according to claim 1 in which the method comprises a further step of

(m) perforating one or more of the mold body (when present), the aerosol generating material, the support (when present), the susceptor (when present), and the layer of material (when present).

29. A method according to claim 1 in which at least one mold recess intersects with the first surface of the mold body with a shape that is one of longitudinally extending, rectangular, round or oval.

30. A method according to claim 1 in which step (c) comprises applying at least two discrete portions of aerosol generating material to the first surface of the mold body, in which those discrete portions of aerosol generating material have different compositions from each other.

31. A consumable for use with an apparatus for heating an aerosol generating material comprising a support and aerosol generating material, in which the consumable is manufactured according to the method of claim 1.

32. An aerosol provision device for use with a consumable according to claim 31, in which the device comprises an aerosol generator configured to heat at least a portion of the aerosol generating material supported on the consumable.

33. An aerosol provision system comprising an aerosol provision device and a consumable according to claim 31 in which the device comprises an aerosol generator configured to heat at least a portion of the aerosol generating material supported on the consumable.

34. A method of generating aerosol from a consumable according to claim 31 using an aerosol-generating device with at least one aerosol generator disposed to heat, but not

burn, the consumable in use; wherein at least one aerosol generator is a resistive heater element or a magnetic field generator and a susceptor.

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