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(54) Preparation method of E-cigarette liquid

Herstellungsverfahren einer Flüssigkeit für eine elektronische Zigarette

Procédé de préparation de liquide pour une cigarette électronique

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Description**Field of Technology**

[0001] This invention relates to a kind of preparation method of E-cigarette liquid which belongs to the field of chemical preparing technology.

Background Technology

[0002] E-cigarette liquid (or E-cigarette atomizing liquid) is the popular cigarette substitute product currently. Concerning the mixing prescription, preparation process, health caring function and other aspects of E-cigarette liquid, there has been many documentary or patented reports. Mixed by 25-90 proportions of polyethylene glycol, 9-50 proportions of propylene glycol and 0.3-52 proportions of taste regulator, a kind of electronic simulation cigarette atomizing liquid disclosed by Chinese patent 200910104922.6 belongs to typical essence and spice mixing products. Mixed by 3-5% w/v of tobacco extractive, 3-5% w/v of tobacco spice, 0-3% w/v of nicotine, 0.2-1% w/v of stabilizing agent, 3-8% w/v of thickener, 5-10% w/v of pure water, 50-70% w/v of propylene glycol and other elements like codeine phosphate, chlortrimeton etc., though it uses tobacco extractive, the electronic cigarette atomizing liquid disclosed by Chinese patent 200910310536.2 is still the product that imitates cigarette taste and mixes by tobacco extractive as well as other spices. Due to the reason that more and more smokers begin to adopt E-cigarette to replace cigarette, some shortcomings of the electronic cigarette liquid used in these E-cigarettes become more obvious. It is generally reflected by smokers that although E-cigarettes have the similar appearance, feeling and smog like those of cigarettes, there is a rather wide gap between them in the aspects of aroma and taste, especially the products mixed by various essence and spices that make smokers feel hard to accept or get used to. In addition, it is also the general problem of users that it is difficult for current aroma elements of E-cigarette liquid to retain for a long time that the best ones can only be kept for about half a year during which the "smell of cigarette" will become thin or just disappear. Those shortcomings influence the quality of E-cigarette to a great extent and restrict the popularity and prevalence of E-cigarette meanwhile.

[0003] CN101473999A discloses a kind of E-cigarette liquid mainly comprising 3-5% w/v of a tobacco leaf extract, 40-50% w/v of propylene glycol, 10-15% w/v of purified water, 3-5% w/v of tobacco flavor essence, 0.2-1% w/v of a stabilizer, 3-8% w/v of a thickener, 0.5-4% w/v of xylitol, 0.5-4% w/v of L-arabinose and 3-9% w/v of sodium fluoride solution. A method of preparing the E-cigarette liquid is not disclosed, and the ingredients as used are not substantially the same as the present invention.

[0004] CN101461565A also discloses a kind of E-cigarette liquid mainly comprising 3-5% w/v of tobacco leaf extract, 40-50% w/v of propylene glycol, 10-15% w/v of

purified water, 3-5% w/v of tobacco flavor essence, 0.2-1.0% w/v of stabilizer, 3-8% w/v of thickener and 15-20% w/v of medicament, and the medicament may comprises various of herbal ingredients and/or pharmaceutical ingredients. Again, a method of preparing the E-cigarette liquid is not disclosed, and the ingredients as used are not substantially the same as the present invention.

10 **Contents of Invention**

[0005] Aiming at the shortcomings like bad aroma and taste, short time for keeping the essence etc. existing in the E-cigarettes, the purpose of this invention is to provide a kind of preparation method of E-cigarette liquid. Letting the natural aroma elements of tobacco enter the E-cigarette liquid, this method makes the aroma and taste come from the tobacco and be closer to those of cigarettes, which can cater to the smoking feeling of customers and makes the time much longer for keeping the natural aroma in cigarette liquid.

[0006] This invention Will Be Implemented According to the Technical Proposals Below

[0007] Certain amount of E-cigarette liquid should be prepared according to the plan. First, get the tobacco (weight) in an amount of 5-20% (w/v) of the E-cigarette liquid (volume) and put the tobacco into an extracting tank. Then add a mixed solvent into the extracting tank and soak the tobacco for 30-100 minutes. After heating the tobacco up to 40-60°C and extract the tobacco with warm soak for 2-8 hours to obtain an extract, filter the extract and get a filtrate. Then add chocolate extract in an amount of 1-10% (w/v) of the E-cigarette liquid into the filtrate to obtain a mixture, and stir the mixture for 20-40 minutes. After that, complement the E-cigarette liquid to 100% of a volume of the E-cigarette liquid as planned to be prepared by adding in propylene glycol or polyethylene glycol to obtain a second mixture, and then stir the second mixture until the second mixture is mixed uniformly to obtain a finished product being the E-cigarette liquid.

[0008] The preparation of the mixed solvent above is to respectively get the propylene glycol and/or polyethylene glycol in an amount of 30-80% w/v of the E-cigarette liquid and 0.1-0.5% w/v of tween 80, and then stir them for 20-40 minutes to get the uniformly mixed solvent.

[0009] The preparation of chocolate extract above includes the following steps: Smash chocolate to 20-60 sections to obtain chocolate powder and put the chocolate powder into an extracting tank with interlayer, add distilled water in a weight 3-10 times of the chocolate powder, soak the chocolate powder for 30-90 minutes and heat the chocolate powder up to 80-90°C, extract the chocolate powder with heat preservation for 2-6 hours to obtain a chocolate powder extract, pour out and filter the chocolate powder extract and keep the residue for other functions, then decompress and concentrate the chocolate powder extract to unconcentrated extract in a

proportion of 1.1-1.4 to get the chocolate extract.

[0010] The propylene glycol or polyethylene glycol solvent and tween 80 above are all with the officinal or edible level, among which propylene glycol and polyethylene glycol can be used solely as well as in combination. Advantages and Positive Effect Compared with Public Technology

[0011] There are two reasons for using propylene glycol or polyethylene glycol solvent with tween 80 as the extract and directly extracting tobacco in comparatively mild conditions. First, the aroma elements of tobacco can directly enter the extract. Second, extracting tobacco in mild conditions can avoid the loss and damage of some tobacco aroma elements that are easily-volatilized or sensitive to temperature under the conditions of complex process and high-temperature concentration. In addition, comparing with other common solvent that extracts aroma elements, propylene glycol or polyethylene glycol solvent can better keep the aroma due to their high viscosity and certain moisturizing function. After used by a large number of customers, this product is commonly preferred by them because the taste is close to the cigarette and the aroma can be well kept even when the product is kept for two to three years.

Specific Ways of Implementation

[0012] Case 1: Plan to prepare 500 liters of E-cigarette liquid. Get 50 kilograms of tobacco and put into the extracting tank with interlayer; respectively get 350 liters of propylene glycol and 1 liter of tween 80, then pour the latter into the former and stir the mixture for 30 minutes. Add the mixed liquor into the extracting tank and soak the tobacco for 50 minutes. Then use steam to heat it up to 50°C through the interlayer. After extracting with heat preservation for 4 hours, pour out the extract and filter it to get the filtrate. Add 18 kilograms of chocolate extract into the filtrate and stir the mixture for 30 minutes. Then add 500 liters of propylene glycol into the filtrate to complement the planning preparation and stir the mixture for 35 minutes to get the E-cigarette liquid.

[0013] Case 2: Plan to prepare 500 liters of E-cigarette liquid. Get 50 kilograms of tobacco and put into the extracting tank with interlayer; get and mix 380 liters of propylene glycol and polyethylene glycol according to the proportion of 1:1, and get 1.5 liters of tween 80. Pour the tween 80 into the mixture of propylene glycol and polyethylene glycol and stir it for 40 minutes and then add it to the extracting tank and soak the tobacco for 60 minutes. Use steam to heat it up to 60°C through the interlayer. After extracting with heat preservation for 6 hours, pour out the extract and filter it to get the filtrate. Add 20 kilograms of chocolate extract into the filtrate and stir the mixture for 40 minutes. Then add 500 liters of polyethylene glycol into the filtrate and stir the mixture for 30 minutes to get the E-cigarette liquid.

[0014] The above embodiments of the invention as well as the appended claims show multiple characterizing fea-

tures of the invention in specific combinations. The skilled person will easily be able to consider further combinations or sub-combinations of these features in order to adapt the invention as defined in the claims to his specific needs

Claims

1. Method for preparing E-cigarette liquid, characterized in that: the method comprises the steps of:
getting tobacco in an amount of 5-20% weight/volume (w/v) of the E-cigarette liquid and putting the tobacco into an extracting tank; adding a mixed solvent into the extracting tank and soaking the tobacco for 30-100 minutes, wherein the method for preparing the mixed solvent is to respectively get the propylene glycol and/or polyethylene glycol in an amount of 30-80% w/v of the E-cigarette liquid and 0.1-0.5% w/v of tween 80, and then stirring them for 20-40 minutes;
heating the tobacco up to 40-60°C and extracting the tobacco with warm soak for 2-8 hours to obtain an extract;
filtering the extract to obtain a filtrate;
adding chocolate extract in an amount of 1-10% w/v of the E-cigarette liquid into the filtrate to obtain a mixture and then stirring the mixture for 20-40 minutes;
after that, complementing the E-cigarette liquid to 100% of a volume of the E-cigarette liquid as planned to be prepared by adding in propylene glycol or polyethylene glycol to obtain a second mixture and then stirring the second mixture until the second mixture is uniform, obtaining therefore the E-cigarette liquid.
2. Method for preparing E-cigarette liquid according to claim 1, characterized in that the chocolate extract is prepared by the following steps:
smashing chocolate to 20-60 sections to obtain chocolate powder and putting the chocolate powder into an extracting tank with interlayer; adding distilled water in a weight 3-10 times of the chocolate powder;
soaking the chocolate powder for 30-90 minutes and heating the chocolate powder up to 80-90°C;
extracting the chocolate powder with heat preservation for 2-6 hours to obtain a chocolate powder extract;
pouring out and filtering the chocolate powder extract, then decompressing and concentrating the chocolate powder extract in a proportion of 1.1-1.4 in relation to unconcentrated extract to

get the chocolate extract.

3. Method for preparing E-cigarette liquid according to claim 1, **characterized in that** the propylene glycol and polyethylene glycol are used solely or are used in combination. 5

Patentansprüche

1. Verfahren zum Herstellen von E-Zigaretten-Flüssigkeit, **dadurch gekennzeichnet, dass** das Verfahren die Schritte umfasst:

Beschaffen von Tabak in einer Menge von 5 - 20 % Gewicht/Volumen (G/V) der E-Zigaretten-Flüssigkeit und Geben des Tabaks in einen Extraktionstank; 15

Zugeben eines gemischten Lösemittels in den Extraktionstank und Einweichenlassen des Tabaks während 30 - 100 Minuten, wobei es das Verfahren zum Herstellen des gemischten Lösemittels ist, jeweils das Propylenglycol und/oder das Polyethylenglycol in einer Menge von 30 - 80 % G/V der E-Zigaretten-Flüssigkeit und 0,1 - 0,5 % G/V Tween 80 zu beschaffen und diese dann 20 - 40 Minuten lang zu rühren; Erhitzen des Tabaks auf 40 - 60 °C und Extrahieren des Tabaks unter warmem Einweichen während 2 - 8 Stunden, um einen Extrakt zu gewinnen; 20

Filtern des Extraktes, um ein Filtrat zu gewinnen; Zugeben von Schokoladenextrakt in einer Menge von 1 - 10 % G/V der E-Zigaretten-Flüssigkeit in das Filtrat, um ein Gemisch zu gewinnen, und dann Rühren des Gemisches während 20 - 40 Minuten; 25

danach Ergänzen der E-Zigaretten-Flüssigkeit zu 100 % eines Volumens der E-Zigaretten-Flüssigkeit, wie geplant, um durch Zugeben von Propylenglycol oder Polyethylenglycol hergestellt zu werden, um ein zweites Gemisch zu gewinnen, und dann Rühren des zweiten Gemisches, bis das zweite Gemisch einheitlich ist, wobei folglich die E-Zigaretten-Flüssigkeit gewonnen wird. 30

2. Verfahren zum Herstellen von E-Zigaretten-Flüssigkeit nach Anspruch 1, **dadurch gekennzeichnet, dass** der Schokoladenextrakt durch die folgenden Schritte hergestellt wird: 45

Zertrümmern von Schokolade zu 20 - 60 Abschnitten, um Schokoladenpulver zu gewinnen, und Geben des Schokoladenpulvers in einen Extraktionstank mit Zwischenschicht; 50

Zugeben von destilliertem Wasser in einem Gewicht von dem 3- bis 10-fachen des Schokola-

denpulvers;

Einweichenlassen des Schokoladenpulvers während 30 - 90 Minuten und Erhitzen des Schokoladenpulvers auf 80 - 90 °C; Extrahieren des Schokoladenpulvers unter Wärmeerhaltung während 2 - 6 Stunden, um einen Schokoladenpulverextrakt zu gewinnen; Ausgießen und Filtern des Schokoladenpulverextraktes, dann Dekomprimieren und Konzentrieren des Schokoladenpulverextraktes in einem Verhältnis von 1,1 - 1,4 in Bezug auf unkonzentrierten Extrakt, um den Schokoladenextrakt zu erhalten.

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3. Verfahren zum Herstellen von E-Zigaretten-Flüssigkeit nach Anspruch 1, **dadurch gekennzeichnet, dass** das Propylenglycol und das Polyethylenglycol allein benutzt werden oder in Kombination benutzt werden.

Revendications

1. Procédé de préparation de liquide pour cigarette électronique, **caractérisé en ce que** : le procédé comprend les étapes consistant à :

obtenir le tabac dans une quantité comprise entre 5 et 20 % en poids/volume (w/v) du liquide pour cigarette électronique et mettre le tabac à l'intérieur d'un réservoir d'extraction ; ajouter un solvant mélangé à l'intérieur du réservoir d'extraction et faire tremper le tabac pendant une période de temps comprise entre 30 et 100 minutes, dans lequel le procédé de préparation du solvant mélangé consiste à respectivement obtenir le propylène glycol et/ou le polyéthylène glycol dans une quantité comprise entre 30 et 80 % w/v du liquide pour cigarette électronique et entre 0,1 - 0,5 % w/v de tween 80, et ensuite les remuer pendant une période de temps comprise entre 20 et 40 minutes ; chauffer le tabac jusqu'à une température comprise entre 40 et 60 °C et extraire le tabac avec un trempage chaud pendant 2 - 8 heures pour obtenir un extrait ; filtrer l'extrait pour obtenir un filtrat ; ajouter un extrait de chocolat dans une quantité comprise entre 1 et 10 % w/v du liquide possède quatre électronique dans le filtrat pour obtenir un mélange et ensuite remuer le mélange pendant une de temps comprise entre 20 et 40 minutes ;

après cela, compléter le liquide pour cigarette électronique à 100 % d'un volume du liquide pour cigarette électronique comme il était prévu de le préparer en ajoutant du propylène glycol ou du polyéthylène glycol pour obtenir un se-

cond mélange et ensuite remuer le second mélange jusqu'à ce que le second mélange soit uniforme, pour ainsi obtenir le liquide pour cigarette électronique.

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2. Procédé de préparation de liquide pour cigarette électronique selon la revendication 1, **caractérisé en ce que** l'extrait de chocolat est préparé selon les étapes suivantes consistant à :

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briser le chocolat entre 20 et 60 sections pour obtenir de la poudre de chocolat et mettre la poudre chocolat à l'intérieur d'un réservoir d'extraction avec un intercalaire ;
ajouter de l'eau distillée dans un poids de 3 - 10 fois celui de la poudre de chocolat ;
tremper la poudre chocolat pendant une période de temps comprise entre 30 et 90 minutes et chauffer la poudre de chocolat à une température comprise entre 80 et 90 °C ;
extraire la poudre de chocolat avec une préservation de la chaleur pendant une période de temps comprise entre 2 et 6 heures pour obtenir un extrait de poudre de chocolat ;
verser et filtrer l'extrait de poudre de chocolat, ensuite décompresser et concentrer l'extrait de poudre de chocolat dans une proportion comprise entre 1,1 et 1,4 par rapport à un extrait non concentré pour obtenir l'extrait de chocolat.

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3. Procédé de préparation de liquide pour cigarette électronique selon la revendication 1, **caractérisé en ce que** le propylène glycol et le polyéthylène glycol sont utilisés uniquement ou sont utilisés en combinaison.

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REFERENCES CITED IN THE DESCRIPTION

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