

ALIEN PROPERTY CUSTODIAN

PROCESS OF SAVOURING AND FLAVOURING

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The customary processes of impregnating with savouring or flavouring substances victuals and delicacies, cosmetics or pharmaceutical preparations etc., imply considerable disadvantages, partly because such substances will undergo an alteration of their original qualities, partly because they will readily evaporise or be volatilised, or because they are reduced in effect due to other reasons.

The great majority of natural, and a great number of synthetic scenting and aromatising agents will, within the preparations, to which they are intended to impart their scent or aroma, be altered due to the fact that they will adopt, for instance, the scent or aroma characteristic of the component substances of the preparation concerned, e. g. the fatty-acid smell of soap, or the stearic-acid taste of the lubricant used in the manufacture of fruit lozenges, or that they will be influenced by extraneous smells adsorbed by the surface of such components of the preparation concerned, e. g. superficial scents of chalk in the case of tooth-powders, or of bicarbonate of sugar in the case of effervescent powders. They are also liable to be altered by a chemical mutual effect exercised between them and the components of the preparation, (e. g. alkaline substances, acids), or by their catalytic actions, for instance bringing about an oxydising effect.

The savouring and aromatising substances are, moreover, subject to a continuous alteration in strength of their smell or taste, owing to volatilisation or evaporation, which takes place in such a way that, as far as combinations of several substances are concerned, an individual scent will, possibly, be liable to evaporate quicker than others, whereby the composition is due to undergo fundamental alterations.

My present invention refers to a process of impregnating with a scent or aroma the preparations mentioned above, which for instance, are processed either as a powder, or in a highly viscous condition as a paste, and the final condition of which is either solid, semi-solid or liquid, as desired. The main object of the present invention is to prevent the aforementioned difficulties by a novel method. Particularly, the invention aims not only to protect the savouring and flavouring agents from the influence of agents causing an alteration of the aroma, but also to guard them against any undesired evaporation or volatilisation. To this end, my novel method is based on the measure that the savouring or flavouring substances are stored in a multiplicity of insulating cells, from which they will

only be discharged upon the consumption of, for instance, the victuals, cosmetic articles, etc. Such storing is, under the present invention, brought about in such a way that storing substances, containing amicroscopical and non-clastic hollow spaces, within which the either fluid or dissolved savouring and flavouring agents, respectively, have been absorbed, are admixed to the articles to be treated, i. e., for instance, to the soap to be scented, or to a pudding powder.

The inventive method will result in the fact that due to the well known absorbing capacity of certain substances the savouring agents are so to say filled into an extraordinarily great number of extremely small "containers" protecting them from extraneous smells, from chemical influences, from evaporation, etc., the scenting agents, however, being discharged from said containers in their natural and original condition by means of liquids upon their consumption, and only to the extent of the latter, e. g. when preparing a lemonade, when chewing lozenges, when moistening a cake of soap, etc.

A further subject matter of the present invention is, at the same time, also embodied by the storing substances themselves having absorbed the scenting or aromatising substances and which are to be used as intermediate products and can, for instance, be sold as certain standardised quantities of exactly stated equal weight, either as tablets or subdivided in another manner, in order to be used as a preparation for the purpose of aromatising the substances concerned in any individual case.

As storing substances, by which the savouring or flavouring agents are to be absorbed in accordance with my invention, may be used any non-elastic substances provided with a-microscopical hollow spaces, e. g. organic or inorganic jellies ("gel"), jellies of gelatine hardened by means of alcohol, jellies of silicic acid, and furthermore coal of coconut, aluminium oxide, ferrous oxide, zeolites, or the like. Preferably, however, substances will be selected for this purpose, which contain capillary vessels of such size as will enable the reduction of the steam pressure, whereby the evaporation of the aromatising substances, will be restrained. Whereas, as a rule, such storing substances are concerned for practising the process under this invention, as possess capillaries having a radius of about 1 to 80 μ , the substances bringing about a reduced steam pressure are chiefly such as are provided with capillary tubes having a semi-diameter of

less than 50 μ m. As a matter of course the diameter of the capillary vessels and also the proportion of space occupied by capillaries of a certain size as compared with the space occupied by all of its capillary hollow spaces will also vary in the case of every individual substance, wherefore in every individual case the suitability of a substance will have to be ascertained by way of experiments.

A report on the process of reduction in vapor pressure, which is to be made use of under the present invention, has, for instance, been published by W. Bachmann; see his article entitled: "Über die Dampfspannungsisothermen von Körpern in Gelstruktur" (on the vapor-pressure isotherms of substances showing the structure of jellies) in the periodical "Anorganische und allgemeine Chemie", Volume 100, p. 9. Information as to the manner in which the radius of capillary vessels can be ascertained, is given by I. S. Anderson in "Zeitschrift für physikalische Chemie", Volume 88, pages 191 to 228.

The savouring and flavouring agents, as far as they are liquids, will be directly absorbed by the capillary vessels of the storing substances, whereas solid storing substances are to be used in solvents. In such cases between 2 and 100 percent, and even more, of the savouring and flavouring agents will, corresponding to the specific weight of the aromatising and of the storing substances concerned, be absorbed by the storing substances, stored by the latter within their capillaries, and thus be protected from the influence exercised by other substances.

It is not absolutely necessary that the savouring and flavouring agents are always absorbed by a storing substance which is a powder; they can also be embedded into a granulated storing substance which is thereafter ground, if required so. Under certain conditions it may, however, also be desirable to impregnate the storing substance, when not yet disintegrated, and thereafter to leave it in its undisintegrated condition; e. g. in the case of gelatine foils hardened with alcohol, which have been impregnated with a fruit aroma.

The storing substances are advantageously used in a most finely dispersed, precipitated, sprayed or ground condition, in which they are almost unpalpable, e. g. when rubbing them between the finger tips, (so-called unpalpably fine powders). In such a condition the storing substances which must be capable of being wetted by the individual savouring or flavouring agent concerned, are, for instance, sprinkled with the latter; the storing substances are, in doing so, to be thoroughly mixed, in order to offer always new particles capable to absorb them, to the liquid. It would also be possible to oversaturate only a portion of the storing substance with the scenting or aromatising agent, and thereafter to mix it with untreated storing substance.

When practising the process under this invention, scenting and aromatising substances of any degree of solubility whatsoever, can be used together with the solvents adequate to them, for instance substances which are soluble in fat or in water. When selecting the storing substances absorbing them, care must only be taken that the above mentioned capability of being wetted, is present. The proportion of weight existing between the scenting and aromatising substances, respectively, and the storing substance, will, as an average, be about 1:2 to 1:35.

A further development of the inventive idea is based on the fact that there exist flavouring and

savouring substances, which are extremely delicate, wherefore they will render certain precautionary measures indispensable, in particular with due regard to the risk that they might be impaired by extraneous scents or by catalytic effects emanating from the storing substance.

Substances having a large surface area will be inclined to adsorb or absorb smells, humidity, etc., with a comparatively great readiness. Therefore storing substances offering a high degree of purity and not possessing any particular smell of their own, will principally be selected for the process under this invention. In doing so, the storing substances may, in accordance with one manner of practising the invention, prior to impregnating them, be freed from any traces of extraneous smells adopted, or of such undesirable substances, as are due to the manufacturing process, if any, such purification being carried out by washing the storing substances with water, alcohol or other solvents. The powders purified in this manner, must be carefully dried prior to being used.

Another possibility of eliminating unwelcome influences of the storing substances upon the savouring and flavouring agents, consists in evacuating the storing substances prior to impregnating them, (upon heating them at the same time, if appropriate) and in charging them with an inert gas, e. g. nitrogen. It would also be possible to render the storing substances, prior to impregnating them, inactive against catalytic effects by treating them, for instance, with paraffin, wax, resins, or the like solutions or vapours, or with polyvalent alcohols, in order to poison the catalyser. In order to give an example, it would thus be possible to saturate the storing substance with a 0.1% paraffin solution, and after evaporation of the solvent to charge it with the savouring or flavouring substance.

Finally the savouring and flavouring substances can also be protected from the catalytic influences by storing them, after they have been mixed with white paraffin-oil, glycerin, resins, waxes or another liquid or solution by nature, acting as a poison upon catalysers.

On the other hand, however, experiments also show that there are cases, where it is possibly desirable to exercise a certain catalytic effect upon the savouring or flavouring substances by means of the storing substance. There are, for instance, inferior Spanish Lavender oils, the aroma of which will be mellowed, when they are stored within storing substances exercising a catalytic influence.

Several examples, showing, in what manner the process under the present invention can be practised, are set forth below.

(1) *Shredded soap*

In a vessel which can be heated and is provided with an agitator and with devices for expelling the air from it, 2 kg of finely powdered silicic acid jelly are placed, whereupon the vessel is closed and the expulsion of water from the powder is carried out, heat at the same time being admitted. After this process has been finished, the powder is cooled down in vacuo.

Thereupon, availing oneself of the difference in pressure, existing between the internal and the external pressure, 500 g of an essential oil, e. g. Lavender oil or mixtures of such oils, e. g. a mixture of neroli-, lavender, bergamot-, geranium- and lemon-oil, is fed to the agitated powder by spraying it through a distributor, when the agi-

tator is working, said spray being absorbed by the powder upon discontinuance of the vacuum.

Either in the same or in a separate container 50 kg of a well dried and ground or sliced primary soap provided with a soap colouring substance are mixed with the powder of silicic acid jelly in such a way that the additions are as evenly distributed as feasible. The mixture is then spread in the well known manner by means of rollers, whereupon it is fed to a bar extruding press. The cakes of soap are finally formed by means of a striking press.

(2) *Effervescing lemonade powder*

In order to prepare a primary aroma substance for effervescent lemonade powder, a gelatine hardened with alcohol and having pores with a semi-diameter below 50μ as an average is to be selected.

After having powdered and evacuated the gelatine, it is to be perfectly saturated with nitrogen, whereupon, for instance, lemon oil is to be absorbed by it at a proportion of 1:4 by weight.

About 0.6 g of this powder are mixed with 800.0 g of sugar, 100.0 g of sodium-bicarbonate, and 100.0 g of tartaric acid.

(3) *Peppermint lozenges*

A primary aroma substance of powdered jelly of gelatine hardened with alcohol and of peppermint oil at a proportion of 1:9 by weight is prepared.

Furthermore 1000 g of sugar are mixed with

	Grams
Water -----	50
Glucose -----	100

the mixed substance then, upon stirring it, being

dried in a flat vessel, which can be heated. Thereafter 1.8 g of the Peppermint powder are added thereto.

After Talcum has been admixed, the substance is thoroughly mixed and lozenges made of it by pressing.

(4) *Pudding powder*

Raspberry essence is to be absorbed by gelatine hardened with alcohol at a rate of 1:10 by weight. This powder is thereupon mixed with castor sugar at a proportion of 1:9 by weight, and a colouring substance is added.

(5) *Salt of bittern*

Lavender oil is mixed with glycerine at a proportion of 10:1 by weight. This mixture is then to be absorbed by an extremely fine powder of aluminum-oxide jelly. Thereafter the powder is mixed with bicarbonate of sodium or coloured sodium-sulphate at a rate of 1:60 by weight, whereupon tablets are formed by pressure, or the mixture is filled into bottles as a loose powder.

(6) *Taste-correcting agent for pharmaceutical preparations*

Powdered coconut charcoal is saturated with 0.1% alcoholic solution of benzoic resin.

After evaporation of the solvent has taken place, aniseed-oil is caused to be absorbed by the coal treated in this manner at a rate of 1:4 by weight.

So much of this powder is added to a dry extract of pancreas, that the individual aroma of the pancreas-taste will be hidden thereby. Tablets are made of this mixture, availing oneself for the pressing operation of the customary admixtures and lubricants.

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