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MENTHOLATED TALCUM POWDER

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This invention relates to improvements in toilet powders and method of manufacturing the same, and has for its principal object to produce a new and improved powder incorporating therewith in a novel manner one or more of the volatile alcohols so as to produce a powder having marked cooling and soothing effects, and in which said effects are maintained for some time after use.

A further object of the invention is to produce a toilet powder of the character described, in which the advantageous properties may be retained over a relatively long period of time when kept in a suitable container, but in which release of the active elements is promoted by applying the powder to the skin. Other objects of the invention will appear from time to time as the following description proceeds.

Menthol, thymol and similar normally solid alcohols have been widely used in medicinal and toilet preparations for their cooling properties, this being largely due, of course, to their high vapor pressure, but heretofore it has not been deemed practical to use such ingredients in a toilet powder, due to the unstability of such relatively dry mixtures wherein the highly volatile ingredients rapidly disappear and the powder quickly loses its strength when kept in containers of commercial or ordinary form. Talc, the basic ingredient of most toilet powders because of its desirable smoothness and other physical characteristics, has merely surface contact for the retention or adsorption of highly volatile ingredients such as menthol and thymol. Solutions or emulsions of these latter substances sprayed upon or rubbed into the talc are soon evaporated. Similarly, other basic ingredients of toilet powders such as zinc stearate, are not capable of retaining such alcohols.

In carrying out my invention, I provide a toilet powder having as usual a base of talc, zinc stearate or the like, but in addition I provide a certain amount of highly porous or absorbent material, preferably consisting of diatomaceous earth, otherwise known as kieselguhr, which consists of the minute frustules and fragments of diatoms, or in other words, the silicious remains of microscopic algæ occurring in the natural deposits, usually fossiliferous. As is well known, the diatoms consist of microscopic cellular structures, so small that the material is highly absorbent in its finest form. This material is thoroughly impregnated with the solid alcohol, in such manner that the latter enters into the cells or porous structure of the diatoms and is held therein so as to greatly lessen its surface contact with the air.

Furthermore, I increase the lasting effect of the cooling vapors by the addition of certain menthol esters, which hydrolize in contact with moisture from the skin and air, producing additional menthol as well as the acids of the esters, which acids are neutralized by a suitable agent added for that purpose.

Referring now more specifically to the proportions of the several ingredients and the methods of preparing the same which I have found to give most satisfactory results, a suggested formula is substantially as follows:

		Parts
(A)	Talc	125
	Zinc stearate	1
	Borax	1
(B)	Diatomaceous earth	5
	Menthol	2
	Thymol	½
(C)	Menthol acetate	½
	Menthyl propionate	½
	Lilac (or other perfume)	q. s.

The ingredients of paragraphs (B) and (C) above are preferably incorporated as separate groups, before mixing with the base included in paragraph (A), as will hereinafter appear.

One method of impregnating the diatomaceous earth with the alcohols mentioned consists in vaporizing the latter and applying the vapor under moderate heat and pressure to a batch of diatomaceous earth contained in an autoclave or other enclosed container, preferably provided with a suitable agitating device so that the vapors may be thoroughly incorporated in the diatomaceous earth without contact with the atmosphere. The batch is then cooled while still in the container so that the vapors may enter the cellular structure of the diatoms through capillarity and condensation. I find most satisfactory results are obtained by limiting the relative proportions of diatomaceous earth and talc to substantially the amounts suggested, inasmuch as larger amounts of diatomaceous earth treated as described have a tendency to affect the free running properties of the powder, and to produce a tendency to cake or clog the relatively small apertures such as usually employed in the cover of dispensing cans. The proportions of the solid alcohols can be varied somewhat, depending upon the strength desired or preference for characteristic odor of the different alcohols. The degree of absorbent powders of the diatomaceous earth

is naturally the limit of the amounts of the alcohols that can be fully absorbed, and the excess amounts will have a tendency to disappear from the mixture in a relatively short time.

The diatomaceous earth, being a natural product, may vary somewhat in effectiveness as an absorbent, depending upon the specific type and size of the diatoms constituting the particular deposit employed, and the mode of preliminary treatment. I find that a purified air-floated white product may be obtained through the pulverizing of the crude diatomaceous earth, which product being easily obtainable in commercial quantities, is highly desirable for the purpose.

After the diatomaceous earth has been impregnated as above described, it is intimately mixed with the base materials including talc, zinc stearate and borax, by the usual mechanical processes known to the art.

The menthol esters included in paragraph (C) of the suggested formula above are of similar characteristics and may be used either separately or together. They are preferably added to the base independently of the impregnating process of the diatomaceous earth as above described, since such process has a tendency to break down the esters. As a preferred method of application, the esters are dissolved in ethyl alcohol and applied in the form of a solution or spray at atmospheric temperatures to the base and the impregnated diatomaceous earth, and combined, if desired, with a suitable perfume such as the lilac suggested. As an alternative method of application, the esters may be finely divided, and mixed directly with the base and impregnated diatomaceous earth.

Among other absorbent or semi-absorbent materials which most nearly approach the properties of diatomaceous earth for the purpose of my invention, may be mentioned pumice, asbestos, or chalk, the latter made up of microscopic shells of calcium carbonate.

The talc may be replaced by zinc stearate as the principal base, or the latter may be varied in proportions desirable for its well known antiseptic and adhering properties. The borax is added as a neutralizing agent for the menthol esters, as will hereinafter more fully appear. Other neutralizing agents may be used, as for instance calcium carbonate in the form of chalk.

As a modification of the process of manufacture above described, the diatomaceous earth may be mixed with the base before it is impregnated by the solid alcohol, but in general be found that such process involves the handling of much greater bulk of material and an unnecessary increase in amount of the alcohols used, some of which is taken up by the base by surface contact only, and is likely to escape from the mixture by volatilization during the preparation or before the powder is put to use.

Among the principal advantages of my improved toilet powder are the marked cooling effects, the first effect being largely due to the relatively slow release of the solid alcohol from the diatomaceous earth in the form of vapor, the vaporization being promoted by contact with the warm skin, and a secondary cooling effect being due to hydrolysis of the menthol esters as they come in contact with the moisture of the air, and especially the perspiration of the skin. The mild acetic or propionate acids resulting from such hydrolysis are neutralized and rendered innocuous by the borax or similar neutralizing agent employed. Such agent as a secondary function, also serves to neutralize any acids of the perspiration.

A further advantage, which is even more important from the commercial standpoint, is the lasting effects of the essential properties of the alcohol ingredients such as menthol and thymol, whereby the product maintains its strength and cooling effects for relatively long periods of time, when kept in containers of commercial form. In fact, the secondary cooling effect from hydrolysis of the esters may be maintained indefinitely, while the initial effect from the absorbed alcohols is easily retained as long as a can of average size lasts, when ordinary caution is observed in keeping the can or container closed when not in use.

As a further advantage of my improved powder, the diatomaceous earth content has a marked property of removing the objectionable "shine" noted with ordinary talcum powders, this property of the diatomaceous earth being due partly to its physical characteristics as distinguished from the flaky, shining crystals of talc, and partly to its absorptive powers, by which it takes up excessive perspiration from the skin as the menthol and thymol become released therefrom by volatilization.

Although I have described certain preferred formulæ and modifications thereof, and certain processes of manufacturing my improved toilet powder, it will be understood that I do not wish to be limited to the specific formulæ described, but that similar properties may be obtained by other compositions, either by change in proportions or by substitution of well known equivalents, and that other modified processes of manufacture may be used, without departing from the spirit and scope of my invention. I do not, therefore, wish to be understood as limiting myself to the ingredients, proportions or processes herein disclosed, excepting as specifically defined in the appended claims.

I claim:

1. In a toilet powder, a talc base, and diatomaceous earth having a normally solid alcohol of cooling properties impregnated within the cellular structures of said diatomaceous earth, said diatomaceous earth being present in quantities of not exceeding five parts by weight to one hundred and twenty-five parts of said base.

2. The method of preparing a toilet powder including diatomaceous earth and a normally solid volatile alcohol, which includes steps of mixing a batch of the diatomaceous earth with the solid alcohol and applying heat and pressure sufficient to vaporize the latter and promote impregnation of the cellular structures of said diatomaceous earth by said vaporized alcohol, and then cooling the mixture so as to condense the alcohol within said cellular structures and thereby retard evaporation thereof at normal temperatures.

3. The method of preparing a toilet power including diatomaceous earth, a relatively non-absorbent base, and a normally solid volatile alcohol which includes the steps of mixing a batch of the diatomaceous earth with the solid alcohol under heat and pressure sufficient to vaporize the latter and promote impregnation of the cellular structures of the diatomaceous earth by said vaporized alcohol, then cooling the mixture so as to condense the alcohol within said cellular structures and thereby retard evaporation thereof at normal temperatures, and thereafter mixing said impregnated diatomaceous earth with said base.

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