

UNITED STATES PATENT OFFICE

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TOILET PREPARATION

No Drawing.

Application filed September 14, 1928. Serial No. 306,093.

This invention relates to toilet preparations for application to the skin, and more particularly to facial preparations including face powders, compacts, creams and lotions such as the preparations some times referred to as "liquid face powders". For convenience, this invention will be described hereinafter with reference to face powders, but it is to be understood that the various types of toilet preparations to which it is applicable are included, whether in powdered, solid, paste or liquid form.

Formerly lead compounds, especially the white oxide and carbonate of lead, were extensively used in face powders and toilet preparations. Lead compounds have certain advantages in face powders, particularly because of their covering power or ability to provide a relatively opaque coating for the skin when used in thin layers, and their clinging power, by virtue of which they adhere to the skin. Lead compounds are open to very serious objections, however, because poisonous, and also because of their great chemical affinity which causes them to combine with impurities in the air, particularly sulphur which is usually present, especially in cities where quantities of soft coal are used. The combination of the lead with the sulphur forms a dark colored sulphate of lead and which causes the face of the user of the powder to take on a gray or dull color, after the powder has been applied for a time. The lead compounds are also sensitive to light and tend to turn dark upon exposure, especially to bright sunlight. Owing to these objections, and especially to the poisonous qualities of the lead compounds, the use of toilet preparations containing lead has been substantially discontinued. In fact, owing to the toxic nature of such preparations, their use has now been forbidden by law.

At the present time zinc salts are largely used to toilet powders and similar preparations, instead of lead compounds. At first zinc oxide was used and is still used to a great extent, but more recently commercial zinc stearate has been extensively employed.

What is commonly known in the trade as

zinc stearate is a mixture of zinc salts prepared from commercial stearic acid. The latter contains a substantial proportion of palmitic acid and traces of other fatty acids, so that what may be termed "commercial zinc stearate" is really a mixture of zinc stearate, zinc palmitate and traces of zinc salts of other fatty acids. For convenience this mixture of zinc salts which is used in toilet preparations will be hereinafter referred to simply as "zinc stearate". The zinc oxide and stearate have a fair degree of covering power, though not as good as the lead compounds formerly used. The stearate is usually used in conjunction with the oxide because of its better clinging power. It is also of a more fluffy nature. Most of the present face powders contain varied percentages of zinc oxide and stearate mixed with inert substances such as kieselguhr, talcum, kaolin, rice starch, precipitated chalk, carbonate or oxide of magnesium, barium sulphate (blanc fixe) and in some instances bismuth salts, although the latter are expensive and not sufficiently adherent. Zinc salts, usually in proportions varying from 25% to 35% are mixed with these inert substances.

Zinc salts have some of the same objections as the lead compounds formerly used, although they are not as toxic. There has been some complaint, however, of instances where harmful effects have been claimed to result from their use, particularly from the use of zinc stearate. The zinc compounds also have to some extent the same objection as the lead compounds in combining with the sulphur or other impurities of the air, so as to give the face a grayish or dark appearance after exposure.

Owing to the objections to the use of lead and zinc compounds which it has heretofore been necessary to employ in face powders and the like, there has been constant effort and research carried on for many years past by chemists and manufacturers of toilet preparations to find some suitable substance overcoming the objections enumerated, but up to this time nothing superior to the zinc compounds has been available. We have discovered, however, that the stearates or other

salts of certain other metals are very suitable to the manufacture of face powders and other toilet preparations, and do not have the objections above enumerated. The substances which we have found most desirable for this purpose are compounds of titanium, particularly the stearate or oxystearate, or a mixture of one or both of these compounds with the white oxide of titanium. The use of the stearate or oxystearate, either alone or with the oxide is preferable to the use of the oxide alone, as the latter lacks the degree of adherence or clinging power found in the stearate or oxystearate. These titanium salts we have discovered are admirably suited to the manufacture of face powders and the like, as they are adherent and have a superior covering power, very much better than that of the zinc salts at present employed, and they are for all practical purposes non-toxic and non-irritating to the skin. The titanium compounds appear to have a covering power at least two or more times that of the zinc compounds. The adherent properties of the stearate and oxystearate of titanium are also superior to those of zinc stearate. The titanium compounds are also chemically inactive and do not oxidize in the air or combine with sulphur chlorine or other atmospheric impurities and are not affected by light and therefore retain their original color upon exposure and do not cause the face to become gray or dark.

The remarks made above as to the compound nature of the zinc salts prepared from commercial stearic acid, apply equally to the titanium salts. Owing to the presence of palmitic acid and usually of small quantities of other of the fatty acids in conjunction with the stearic acid, a pure titanium stearate is not commercially available, and the terms titanium "stearate" and "oxystearate" are herein used to designate the products produced by the use of commercial stearic acid, which products may, and usually do, include, in addition to the stearate, the palmitate and oxypalmitate, as well as traces of other fatty acid salts of the metallic base.

The superior covering power of the titanium compounds is very important in a face powder and appears to be due in part to the high bulking power of such compounds and especially to their high light reflecting value. The latter quality also causes this powder to protect the face against heat and thus produces indirectly a cooling effect on the face which is agreeable to the user. More effective protection against sunburn also appears to be afforded due to this quality. While the titanium compounds have a high light reflecting value and opacity they are characterized by the flatness or dullness of the finish produced on the skin surface as distinguished from a brilliant or glossy appearance which is usually objectionable in a face powder.

The titanium compounds are also advantageous in having low oil absorption properties.

In the manufacture of a face powder, the titanium salts named are usually combined in varied proportions, as may be desired, with inert substances of the character above described, such as are usually utilized in face powders.

Instead of or in addition to the titanium salts mentioned, similar salts of metals of analogous characteristics to titanium may be employed where found satisfactory, such as salts of zirconium, lanthanum, cerium, or mixed salts of groups of the so-called rarer earths, etc. Of these metals we at present regard the salts of titanium as the best and most suitable for the purpose, as they are easily obtainable and appear to have certain advantages over some of the other metals named. Our invention, however, includes in its broader aspects the use of salts of all of the various metals in these groups which have the desirable properties of covering power, adherence, non-toxicity, and chemical inertness whereby they are inactive upon exposure to impurities in the atmosphere or to light and do not become discolored after application to the face.

We claim:

A toilet preparation for application to the face having for its principal ingredient a titanium salt of stearic acid.

In testimony whereof we have affixed our signatures to this specification.

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