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MINERAL OIL BASE CLEANING COMPOSITION

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ABSTRACT OF THE DISCLOSURE

A cleaning composition, particularly effective on vinyl, leather and upholstered surfaces, comprises a mixture of mineral oil and sodium bicarbonate having proportions, by volume, of sodium bicarbonate to mineral oil in the range from 1:10 to 1:20.

The present invention relates to cleaning compositions and more particularly to a mineral oil base cleaning composition.

It is an object of the present invention to provide an inexpensive effective cleaning agent, which is safe to use, for vinyl, leather and other upholstered surfaces. It is another object of this invention to provide a cleaning composition which poses no health or safety dangers to the user or to small children. Heretofore, commercially available cleaning compositions have been only partially effective in removing the numerous stains which mar such surfaces. In addition, presently available compositions are considerably more expensive than the cleaning agent of the present invention.

It is a particular object of this invention to provide a cleaning composition which will dry rapidly, which is easy to apply and remove, and which will not streak the surface to which it is applied.

Other objects and advantages will become apparent from the following description and appended claims.

Briefly stated, in accordance with the aforesaid objects, the present invention provides a cleaning composition which comprises a mixture of mineral oil and sodium bicarbonate. In addition, to improve the aroma and to facilitate mixing, a small amount of an emulsifying agent, such as a liquid soap, may be added to the mixture. The preferred proportions, by volume, of sodium bicarbonate to mineral oil in the mixture is in the range from 1:10 to 1:20.

A cleaning composition formulated as aforesaid has been found to be inexpensive, easy to apply and rub off and effective in removing all types of dirt and stains. Moreover, the composition has found further utility as a corrosion preventative and cleaner when applied to automobile batteries and battery terminals. In addition, when applied to the painted exterior surfaces of automobiles it has been observed that snow will not remain on these surfaces. Thus the composition of this invention serves to inhibit salt corrosion and rust formation on automobile bodies.

In its broadest form the cleaning composition of the present invention comprises a mixture of mineral oil and sodium bicarbonate. The mineral oil may be any liquid product of petroleum within the viscosity range of products commonly called oils. However, in view of the proposed utility of these oils as components of a cleaning composition, it is preferred that the mineral oil be colorless and transparent. Therefore, the particularly preferred mineral oil for use with the present invention is white mineral oil, otherwise known as petrolatum. This latter grade of mineral oil is frequently employed as a laxative preparation. Petrolatum is a colorless, almost tasteless and odorless, transparent oily liquid comprising a mixture of liquid hydrocarbons. Among its characteristic physical properties is a specific gravity in the range from about 0.828 to 0.905 at temperatures of about 20° C. and a kinematic viscosity of not less than about 38 centistokes at about 40° C.

The sodium bicarbonate is preferably common baking soda, commercially available in the form of a white powder or as crystalline lumps. Commercial grade sodium bicarbonate is satisfactory and, in terms of economics, is preferred. Inasmuch as the sodium bicarbonate is not soluble in the mineral oil, for ease of dispersal it is preferred to use the powdered form of baking soda.

The cleaning composition of the present invention contemplates the use of varying proportions of sodium bicarbonate and mineral oil. In a broad embodiment, the proportion, by volume, of sodium bicarbonate to mineral oil in the mixture is in the range from 1:10 to 1:20. The preferred proportion range is about 1:16. Compositions containing lesser amounts of mineral oil than is contained in a 1:16 composition have been found to leave a residual gray film after drying. Specifically, when using a proportion of 1:10 on vinyl it was found to be very easy to apply but left a substantial gray film after drying. When using a composition having a proportion of 1:12 not as much of the gray film remained. With a proportion of 1:14 a small amount of gray film was still discernible on drying. Where the cleaning composition contains more mineral oil than is contained in a 1:16 composition, it was found that the composition tended to be greasy and required considerable rubbing to dry it. Specifically, a proportion of 1:18 was found easy to apply but needed substantially more rubbing to dry than with a proportion of 1:16. A proportion of 1:20 displayed properties similar to a proportion of 1:18 but required still more rubbing and left a greasy film.

In order to impart a desirable aroma to the cleaning composition and to enhance mixing of the components (to formulate a better appearing commercial product), it is desirable to utilize an emulsifying agent in addition to the mineral oil and sodium bicarbonate. By emulsifying agent is meant a substance that stabilizes mixtures of two or more immiscible substances in suspension. Generally, detergents are suitable emulsifying agents since they reduce the surface tension at the interface of the suspended particles. In the practice of the present invention, soaps, i.e., the water-soluble reaction product of a fatty acid ester and a metal, are the preferred emulsifying agents. Specifically, commercially available liquid soaps, such as are available from the Proctor and Gamble Company under the trademark Ivory Liquid have been found to be quite satisfactory. The quantity of soap or other emulsifying agent employed is immaterial so long as it is sufficient to emulsify the quantity of mineral oil and sodium bicarbonate employed. However, use of excess emulsifier is wasteful and unnecessary. It is recommended that simple trial experiments be conducted to determine the optimum amount of emulsifier to be used depending upon the type of emulsifier selected and the proportions of the mineral oil-sodium bicarbonate mixture. When a soap emulsifier, such as Ivory Liquid, is used, it has been found that one ounce of soap is sufficient to emulsify about 20 ounces of cleaning composition.

To demonstrate the cleaning effectiveness of the compositions of the present invention the following tests were conducted:

Cleaning compositions were formulated having the proportions set forth below in addition to one ounce each of Ivory Liquid soap. The compositions were well mixed, as by shaking, and applied, using a clean cloth, to the vinyl tops, vinyl interiors and to the vinyl-instrument panels of automobiles. The compositions were permitted to remain

on the surfaces for 3–5 minutes and then were removed using a clean cloth.

(a) 1 ounce baking soda; 20 ounces petrolatum (1:20)
(b) 1 ounce baking soda; 18 ounces petrolatum (1:18)
(c) 1 ounce baking soda; 16 ounces petrolatum (1:16)
(d) 1 ounce baking soda; 14 ounces petrolatum (1:14)
(e) 1 ounce baking soda; 12 ounces petrolatum (1:12)
(f) 1 ounce baking soda; 10 ounces petrolatum (1:10)

All of the compositions were observed to be effective in removing grease, candy stains and common accumulated dirt. However, the surfaces cleaned with the 1:10, 1:12 and 1:14 compositions resulted in a gray film after drying. A grease film remained on the surfaces cleaned with the 1:18 and 1:20 compositions. The 1:16 composition was found to be fast and easy to apply, easy to remove and generally produced the best cleaning results.

While the present invention has been described with respect to particular embodiments thereof, it will be understood that numerous modifications may be made by those skilled in the art without actually departing from the scope of the invention as claimed.

What is claimed as new is as follows:

1. A cleaning composition consisting essentially of a mixture of mineral oil and sodium bicarbonate having proportions, by volume, of sodium bicarbonate to mineral oil in the range from 1:10 to 1:20.

2. A composition, as claimed in claim **1**, wherein the proportion is about 1:16.

3. A composition, as claimed in claim **1**, wherein said mineral oil is colorless.

4. A composition, as claimed in claim **3**, wherein said mineral oil is liquid petrolatum.

5. A composition, as claimed in claim **1**, including an emulsifying agent in an amount sufficient to enhance the mixing of said mineral oil and said sodium bicarbonate.

6. A composition, as claimed in claim **5**, wherein said emulsifying agent is a liquid soap.

7. A compostion, as claimed in claim **4**, including an amount of liquid soap sufficient to emulsify said mineral oil and sodium bicarbonate.

8. A cleaning composition comprising a mixture of liquid petrolatum and sodium bicarbonate having proportions, by volume, of about 1:16 and including an amount of liquid soap sufficient to emulsify said petrolatum and sodium bicarbonate.

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