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SOAP COMPOUND AND PROCESS OF MAKING THE SAME.

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This invention relates to soap compounds and to processes of manufacturing them.

It is the chief object of the invention to develop a soap compound which will be entirely satisfactory for general toilet and household purposes while at the same time being suitable for use under an unusually wide variety of conditions. The invention also aims to produce a soap which will be unusually effective in removing dirt and grease, either from the person or from clothing or other articles, and which, at the same time, will not be injurious to the skin as are the common soaps used for such purposes.

In many localities the water available is very "hard"; that is, it contains mineral salts which react with the soap to form insoluble compounds, thus precipitating the soap and rendering it practically useless. This is true of the water supply in a great many inland locations, and it is the condition which obviously obtains on ship board, or wherever salt water is used. It is one of the objects of the present invention, therefore, to produce a soap which will be entirely satisfactory for use in salt or hard waters as well as in soft water.

The manner in which I have found it possible to accomplish these objects will be readily understood from the following description, and the novel features of the invention will be particularly pointed out in the appended claims.

According to the process at present preferred, a quantity of some good, neutral, substantially pure, vegetable oil soap is dissolved in a mixture of neutralized sulphonated castor oil and water. There are many commercial soaps which answer the requirements just specified, as will readily be understood by those skilled in this art, and any of these soaps may be used. Preferably, about one hundred parts, by weight, of soap are dissolved in fifty parts of oil and seventy parts of water. The proportions, however, may be varied considerably. From forty to sixty parts of oil may be used with from eighty to one hundred and twenty parts of soap. The weight of water should be equal to the weight of the oil, plus an additional quantity equal to from 5% to 15% of the total weight of the previously mentioned quantities of oil, water and soap. Usually the weight of this additional quantity of water is 10% of the total weights of oil, water and soap mentioned. In this connection it should be understood that commercial sulphonated castor oil is usually mixed with a certain quantity of water, and it is sold as a 50% grade, 75% grade, or the like, depending on the proportion of water that it contains. This fact should be recognized in proportioning the ingredients. The weight of oil above given assumes that it contains no substantial percentage of water.

The soap may be dissolved in the water and the oil then added, but it is somewhat more convenient to place all the ingredients in the desired proportions in a suitable container. The ingredients are then slowly heated up to a temperature of approximately 175° F., and the heating is continued until the soap is dissolved in the oil and water. Usually this will take about one hour. The heat is then cut off and the relatively thick liquid resulting from this step of the process is allowed to cool until it reaches a temperature of approximately 95° F. It is then beaten in any convenient form of apparatus until it assumes the consistency of a fairly stiff cream. This beating operation may conveniently be performed in a mixer such as that used in the manufacture of soaps, paints, and the like. I find it preferable to run the mixer at a relatively slow speed, say about twenty-five revolutions per minute, for about fifteen minutes, and then to increase this speed to about sixty revolutions per minute, maintaining this higher speed for about ten minutes. If the mixer is run too fast it tends to beat in so much air that it makes the cream too light and spongy. The cream at the proper consistency is fairly stiff at ordinary temperatures and has a specific gravity of about .6.

For many purposes it is preferable to add to the ingredients, before or during the mixing operation, about 5% of glycerine, for the purpose of protecting the skin of

the user. It is preferable, also, although not necessary for most purposes, to add about 10% of sugar since this increases the lathering properties of the soap. Of course any desired perfume may be added.

I find that a soap made as above described is especially effective in removing dirt and grease either from the hands or from fabrics and the various articles that must be washed. This is true not only when the soap is used in soft water, but also in salt and hard waters. It does not attack the skin of the user as do the common soaps and it therefore is less injurious. In fact, it is a very satisfactory soap for shampooing. Furthermore, it is absolutely harmless to even the most delicate fabrics. It can be used with great satisfaction for laundry purposes and in washing machines, and it is unusually effective in removing greasy dirt from the hands, particularly the grime with which the hands become covered in working on automobile parts, machine parts, and the like.

When this soap composition is dissolved in about an equal weight of paraffin oil it forms a compound especially efficacious in cleaning ink from type, removing printer's ink from the hands, and for similar uses. The paraffin oil added to the cream stiffens the mixture so that the compound is even thicker in consistency than in its original condition.

While I have described above the method and the ingredients which I prefer to use, it will be understood that these factors may be varied in some particulars. For instance, other sulphonated oils may be used, although I consider sulphonated castor oil much preferable to any of the others. A caustic soap also can be substituted for the neutral vegetable oil soap above described, but in making any of these substitutions some advantages of the soap above described are lost. At the same time the compounds produced by making such substitutions are more valuable for many purposes than ordinary soaps.

I have found that when a soap compound of the character above described is mixed with cold cream, or with the essential ingredients of cold cream, it produces a new compound combining certain of the qualities of both cold cream and soap. Such a compound has properties that are valuable for many purposes, particularly in removing the "make-up" used by actors and actresses. Usually make-up is removed by applying cold cream to soften the make-up, and following that with soap and water to wash off the mixture of cold cream and make-up. By mixing about ten parts, by weight, of cold cream with one hundred parts of the soap compound above described, a new substance is obtained which has the property of softening the make-up rapidly so that it may subsequently be removed simply by washing with water. This is accomplished without any undesirable action on the skin. In fact, the mixture protects the skin, softening it, and preserving the smooth texture which is so much desired. This mixture is particularly useful in cleansing delicate skins.

In making such a mixture it is not necessary to use all the ingredients of cold cream, and the glycerine and sugar may also be omitted from the soap compound. A good cold cream usually has a base of white beeswax and spermaceti, and a mixture of equal parts of these substances is used with the soap compound above described, the sugar and glycerine being omitted if desired.

Having thus described my invention, what I desire to claim as new is:

1. The process of making a soap compound which consists in dissolving a neutral vegetable oil soap in a sufficient quantity of a mixture of water and neutralized sulphonated castor oil to form a thick liquid, and then beating said liquid until it assumes a creamy consistency.

2. The process of making a soap compound which consists in dissolving a neutral vegetable oil soap in a sufficient quantity of a mixture of water and neutralized sulphonated castor oil to form a thick liquid, heating said ingredients to facilitate said action, allowing the mass to cool, and then beating said liquid until it assumes the consistency of a stiff cream.

3. The process of making a soap compound which consists in placing from forty to sixty parts of a neutral vegetable oil soap in a suitable container with from eighty to one hundred twenty parts of neutralized sulphonated castor oil and a quantity of water substantially equal to the weight of oil used plus an additional quantity equal to from 5% to 15% of the total of the previously mentioned weights of oil, soap and water, heating said ingredients and thereby causing the soap to dissolve in the oil and water, allowing the resulting solution to cool and then stirring it until it assumes substantially the consistency of a stiff cream at normal temperatures.

4. The process of making a soap compound which consists in placing from forty to sixty parts of a neutral vegetable oil soap in a suitable container with from eighty to one hundred twenty parts of neutralized sulphonated castor oil and a quantity of water substantially equal to the weight of oil used plus an additional quantity equal to from 5% to 15% of the total of the previously mentioned weights of oil, soap and water, heating said ingredients to a temperature of approximately 175° F. until the soap has been dissolved in the oil and water, subsequently cooling the mass to approximately 95° F., then beating the resulting solution

slowly and subsequently increasing the rate of beating until the mass assumes the consistency of a stiff cream.

5. A soap compound comprising from eighty to one hundred and twenty parts of a neutral vegetable oil soap dissolved in from forty to sixty parts of sulphonated castor oil with a quantity of water slightly in excess of the weight of the oil.

6. A soap compound comprising from eighty to one hundred twenty parts of a neutral vegetable oil soap dissolved in from forty to sixty parts of sulphonated castor oil with water equal to the weight of the oil plus an additional quantity of water equal to from five to fifteen per cent of the total of the previously mentioned weights of oil, soap and water.

7. A soap compound comprising from eighty to one hundred twenty parts of a neutral vegetable oil soap dissolved in from forty to sixty parts of sulphonated castor oil and from forty-five to eighty-five parts of water.

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