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TOILET BAR

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7 Claims. (Cl. 252—152)

This application is a continuation-in-part of copending application Ser. No. 233,868, filed Oct. 29, 1962, and now abandoned.

This application deals with the manufacture of solid detergent products and, in particular, bar products for personal toilet use, in which the essential active detergent substances are synthetic, nonionic detergents.

A solid nonionic detergent composition, preferably in bar form, is advantageous for a number of reasons. For one thing, nonionic, synthetic detergent compositions ordinarily have superior mildness characteristics as compared either with ordinary soaps or with the generality of ionic synthetic non-soap detergent compositions. For another, certain ionic additive substances, such as antibacterial agents, ultraviolet light absorbers, and the like, are more efficiently deposited upon the skin from a nonionic toilet bar matrix than from an ionic toilet bar matrix such as a soap bar. This efficiency probably is due to a lack of base ions which would compete with the additive during absorption on the skin. In some cases the increased efficiency is due to better compatibility of the additive with the nonionic bar matrix (i.e., cationic additives will react with an anionic detergent matrix such as soap). At the same time, a toilet bar of which the active detergent substance is a synthetic non-soap material has the usual advantage of avoiding the production of hard water soap curd. In addition, since nonionic detergents are compatible with cationic materials, a broader range of formulation possibilities is afforded.

It is difficult to make a bar for personal use consisting essentially of nonionic synthetic detergents. In the first place, the bar has to be satisfactorily firm and hard for normal usage, whereas many nonionics, especially those which provide lather, are liquids or have a soft consistency at normal or room temperatures. Some nonionics are normally hard or firm, but these in general are incapable of producing an acceptable lather for toilet bar use, and in many instances these hard or firm nonionics act as suds depressants. In general, no single nonionic material is known which possesses in and of itself the firmness, solubility and lathering properties desired in a toilet bar. In addition, these properties cannot be achieved in a toilet bar by indiscriminately combining nonionic detergents.

Accordingly, it is an object of this invention to provide a toilet bar for personal use in which the active detergent substances are synthetic nonionic detergents, but which nevertheless will have acceptable toilet bar characteristics, e.g., lathering, solubility, and firmness.

It is another object of this invention to provide a toilet bar which is exceptionally mild to the skin of the user.

It is a further object of this invention to provide a toilet bar which is compatible with ionic toilet bar additives such as cationic germicides which are not normally compatible with usual anionic detergent bars.

It is a still further object of this invention to provide a toilet bar from which certain ionic additives can be effectively deposited onto the skin of the user; exemplary materials of this class being ionic ultraviolet light absorbers.

These objects are accomplished in accordance with the present invention by providing a toilet bar consisting essentially of an intimate mixture of a nonionic base and a nonionic lathering component as hereinafter set forth more fully.

In the investigations which led to the development of this invention, many hundreds of synthetic nonionic detergents and their mixtures were evaluated. It was found that every nonionic material tested had one or more properties which precluded its use as the sole ingredient for an acceptable toilet bar. In particular, a number of the nonionic detergents were of liquid character or were so soft as to preclude the formation of a bar. While some mixtures could be made showing an improvement in one or more of the characteristics, many of the nonionic substances were physically unacceptable in admixture with others in the amounts required to produce an improvement in lathering effects and bar "feel."

In order to solve the problems herein enumerated with respect to forming a toilet bar from nonionic detergent materials, the principle of a two component bar system was found to be essential. "Component," as used herein, can refer to one material or a mixture of materials. The first nonionic component hereinafter referred to as "base" or "base mixture" imparts to the bar sufficient firmness and acceptable solubility characteristics. The second nonionic component hereinafter referred to as "lathering component" imparts to the bar good lathering properties, especially volume and feel of the lather. Both components of the bar by virtue of their nonionic character are mild to the skin; are compatible with ionic additives; and impart desirable cleaning properties. These two components are selected as hereinafter described so that neither component will interfere with the function of the other component.

The bars of this invention contain from 30% to 70% of a base component of high molecular weight normally solid nonionic polymer or mixture of polymers of which a major portion (preferably at least about 70% by weight) is oxyethylene, and as a lathering component, from 10% to 70% of a nonionic detergent which will lather under normal personal washing conditions (i.e., about 1% solution in cool to tepid water).

Examples of preferred base components suitable for use in the practice of this invention alone or in admixture are the following high molecular weight polymers:

(a) Propylene oxide-ethylenediamine-ethylene oxide condensates;

(b) Propylene oxide-propylene glycol-ethylene oxide condensates; and

(c) Polymerized ethylene glycol.

Polymer (a) is a condensate, for example, resulting from the reaction of propylene oxide and ethylenediamine and then a subsequent reaction with ethylene oxide. This polymer will have only about one mole of ethylenediamine per polymer molecule which can be represented by the following formula

$$(=NCH_2CH_2N=)(-C_3H_6O-)_x(-C_2H_4O-)_yH_4$$

wherein x ranges from 1 to about 160 and y ranges from about 300 to about 700. An example of this condensate is the material sold under the trademark "Tetronic 908." The condensate, "Tetronic 908," has an average molecular weight of about 27,000 and an oxyethylene content of about 85% by weight. Condensates of this type having a molecular weight of from about 20,000 to about 30,000, and an oxyethylene content of about 70% or more by weight are suitable for use in the detergent bars of this invention.

Polymer (b) is a condensate, for example, resulting from the reaction of propylene oxide and ethylene glycol and then a subsequent reaction with ethylene oxide. This polymer can be represented by the following general formula:

$$HO(-CH_2CH_2O-)_z(-\underset{\displaystyle CH_3}{\overset{|}{C}}HCH_2O-)_x(-CH_2CH_2O-)_yH$$

wherein x ranges from 1 to about 100 and the sum of $y+z$ ranges from about 160 to about 450.

An example of this condensate is the material sold under the trademark "Pluronic F108." "Pluronic F108" has an average molecular weight of about 16,000 and an oxyethylene content of about 80% by weight. Condensates of this type having a molecular weight of from about 10,000 to 20,000 and an oxyethylene content of 70% or more by weight are suitable for use in the detergent bars of this invention.

Polymer (c) is a condensate, for example, resulting from the polymerization of ethylene oxide with ethylene glycol or water. This polymer can be represented by the general formula:

$$HO(-CH_2CH_2O-)_xH$$

wherein x ranges from about 100 to about 500.

Examples of this condensate include materials sold under the trademark "Polyglycol E6000" and the material sold under the trademark "Carbowax 6000." These materials have a molecular weight of about 7,000.

Condensates of this type having a molecular weight of from about 4,000 to 20,000 are suitable for use in the bars of the present invention.

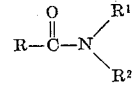
Other oxyethylene polymers than those hereinbefore specifically mentioned can be used in the practice of this invention. For example, those condensates which result from the condensation of ethylene oxide with other hydrophobic bases can be used so long as those condensates have molecular weights and ethylene oxide contents generally in the ranges of the above examples and so long as said condensates are solids.

Mixtures can be made of these above polymers in substantially any proportions; the optimum mixture depends upon the nature of the lathering components and is determined empirically. The amount of base component which can and should be used also depends upon the nature of the lathering components since when the lathering component is itself a solid, a smaller percentage of base component can be used and when the lathering component is a liquid, a larger percentage of the base component is used. The preferred amount of base component will vary for the same reasons. A base made up of "Tetronic 908" and "Polyglycol E6000" in approximately a 1:1 ratio, was determined to be the most soap-like in feel and is a preferred base mixture. None of these bases or base mixtures were suitable for the making of a satisfactory bar by themselves since none of these base materials provide lather under personal washing conditions. The bases or base mixtures are preferably used in amounts ranging from approximately 30% to 70% by weight of the bar.

Examples of preferred nonionic detergent surfactants as the lathering component of the bar include:

(a) polyoxyethylene ethers of an alkyl alcohol;

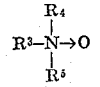
(b) polyhydroxy amides having the formula



wherein

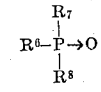
contains from about 10 to about 14 carbon atoms (preferably at least about 50% of the acyl radicals contain 12 carbon atoms), and wherein R^1 and R^2 are each selected from the group consisting of hydrogen and alkyl groups containing from 1 to about 6 carbon atoms, said alkyl groups containing a total number of carbon atoms of from 2 to about 7 and a total number of substituent hydroxyl groups of from 2 to about 6;

(c) amine oxide detergents having the formula



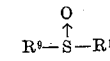
wherein R^3 is a hydrocarbon group containing from about 10 to about 20 carbon atoms, from 0 to about 3 ether linkages, and from 0 to about 3 hydroxyl groups, there being at least one moiety of R^3 which constitutes a carbon chain containing no ether linkages and containing from about 10 to about 14 carbon atoms (preferably at least 50% of said moieties contain 12 carbon atoms), and wherein R^4 and R^5 are each short alkyl chains containing from 1 to about 3 carbon atoms having from 0 to 2 hydroxyl groups attached to each of said short alkyl chains;

(d) phosphine oxide detergents having the formula



wherein R^6 is a hydrocarbon group containing from about 10 to about 20 carbon atoms, from 0 to about 3 ether linkages, from 0 to about 3 hydroxyl groups, there being at least one moiety of R^6 which constitutes a carbon chain containing no ether linkages and containing from about 10 to about 14 carbon atoms (preferably at least 50% of said moieties contain 12 carbon atoms), and wherein R^7 and R^8 are each short alkyl chains containing from 1 to about 3 carbon atoms having from 0 to 2 hydroxyl groups attached to each of said short alkyl chains;

(e) dialkyl sulfoxide detergents having the formula



wherein R^9 is a hydrocarbon group containing from about 10 to about 20 carbon atoms, from 0 to about 3 ether linkages, and from 0 to about 3 hydroxyl groups, there being at least one moiety of R^9 which constitutes a carbon chain containing no ether linkages and containing from about 10 to about 14 carbon atoms (preferably at least 50% of said moieties contain 12 carbon atoms), and wherein R^{10} is a short alkyl chain containing from 1 to about 3 carbon atoms having from 0 to 2 hydroxyl groups attached to said short alkyl chain;

(f) stearoyl N-methyl glucamide;

(g) polyethylene glycol tertdodecyl thioether containing from about 8 to about 30 moles of ethylene oxide per mole of thioether; such as "Nonic 218"; and

(h) mixtures thereof.

Lathering component (a) is a condensate of (1) an alkyl alcohol wherein the alkyl group contains from about 10 to about 16 carbon atoms and (2) ethylene oxide wherein the ethylene oxide:alkyl alcohol mole ratio is in the range of 10:1 to 25:1. An example of such a substance is the condensation product of one mole of tridecanol with 15 moles of ethylene oxide sold under the trademark "Sterox AP-100." Other examples include decanol, dodecanol, and the mixture of alcohols derived from coconut oil condensed with respectively 10, 15, 20 and 25 moles of ethylene oxide per mole of alcohol.

Examples of lathering component (b) include lauroyl diethanol amide, coconut diethanol amide, coconut dimethanol amide, coconut monoethanol amide, lauroyl glyceryl amide, lauroyl N-methyl glucamide, lauroyl trimethanol methyl amide, lauroyl diisopropanol amide, lauroyl ethylene glycol amide and lauroyl di-N-propanol amide. This list is by no means exhaustive of the acyl polyhydroxy amides suitable for use in the bars of this invention. It will be understood that these amides can be prepared from mixtures of fatty acids and amines wherein the carbon chains are derived from naturally occuring substances or petroleum derived substances, or mixtures or fractions thereof, and that this will normally be the case.

Preferred amides are lauroyl (or coconut) diethanol amide, and lauroyl (or coconut) glyceryl amide. Lauroyl glyceryl amide and glyceryl amides in which the acyl

chain is a close homolog of lauric acid, have unique performance characteristics in the compositions of this invention. In addition to acting as a lathering agent (like the other amides used in the bars of this invention), they also act in part as agents to firm the bars and they are particularly valuable in reducing excessive solubility in the bar.

Examples of lathering component (c) include:

dimethyldodecylamine oxide
dimethyltetradecylamine oxide
ethylmethyltetradecylamine oxide
cetyldimethylamine oxide
dimethylstearylamine oxide
cetylethylpropylamine oxide
diethyldodecylamine oxide
diethyltetradecylamine oxide
dipropyldodecylamine oxide
bis-(2-hydroxyethyl)dodecylamine oxide
bis-(2-hydroxyethyl)-3-dodecoxy-1-hydroxypropyl amine oxide
(2-hydroxypropyl)methyltetradecylamine oxide dimethyloleylamine oxide
dimethyl-(2-hydroxydodecyl)amine oxide

and the corresponding decyl, hexadecyl, and octadecyl homologs of the above compounds.

The preparation of amine oxides containing ether linkages and/or hydroxy groups is taught in U.S. Patent 3,202,714. The preparation of amine oxides containing multiple ether linkages is taught in the commonly assigned copending application of Davis, Ser. No. 370,036, filed May 25, 1964.

Examples of lathering component (d) include:

dimethyldodecylphosphine oxide
dimethyltetradecylphosphine oxide
ethylmethyltetradecylphosphine oxide
cetyldimethylphosphine oxide
dimethylstearylphosphine oxide
cetylethylpropylphosphine oxide
diethyldodecylphosphine oxide
diethyltetradecylphosphine oxide
dipropyldodecylphosphine oxide
bis-(hydroxymethyl)dodecylphosphine oxide
bis-(2-hydroxyethyl)dodecylphosphine oxide
(2-hydroxypropyl)methyltetradecylphosphine oxide
dimethyloleylphosphine oxide
dimethyl-(2-hydroxydodecyl)phosphine oxide

and the corresponding decyl, hexadecyl, and octadecyl homologs of the above compounds.

The preparation of phosphine oxides containing hydroxyl groups is taught in the commonly assigned copending application of Yoke, et al., Ser. No. 173,834, filed Feb. 16, 1962.

Examples of lathering component (e) include:

octadecyl methyl sulfoxide
dodecyl methyl sulfoxide
tetradecyl methyl sulfoxide
3-hydroxytridecyl methyl sulfoxide
3-methoxytridecyl methyl sulfoxide
3-hydroxy-4-dodecoxybutyl methyl sulfoxide
2-hydroxyundecyl methyl sulfoxide
2-hydroxydecyl methyl sulfoxide
2-decoxyethyl-2-hydroxyethyl sulfoxide.

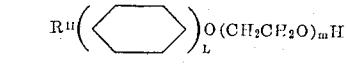
The preparation of dialkylsulfoxides containing ether linkages and/or hydroxyl groups is disclosed in the commonly assigned co-pending applications of Lyness, et al., Ser. Nos. 444,069 and 448,228, filed Mar. 30, 1965.

It will be understood that the above oxides (c, d and e) can be prepared from mixtures of alkyl groups derived from naturally occurring substances or petroleum derived substances, or mixtures or fractions thereof, and this will normally be the case.

Preferred lathering components include components (a) and (b) since they are relatively inexpensive, have good lathering characteristics, and are very mild. Other preferred lathering components include (c), (d) and (e) where the compounds contain hydroxyl groups and/or ether linkages; these lathering components are milder than components (c), (d) and (e) which do not contain hydroxyl groups and/or ether linkages. Especially preferred lathering components are 2-hydroxyalkyl methyl sulfoxides wherein alkyl refers to dodecyl, tridecyl and/or tetradecyl group. These lathering components are milder than shorter chain homologs and have excellent lathering characteristics. The 2-hydroxydodecyl methyl sulfoxide is preferred for lather volume, but the 2-hydroxytetradecyl and 2-hydroxytridecyl homologs can be mixed with the 2-hydroxydodecyl methyl sulfoxide to improve the creaminess of the lather without appreciably diminishing the lather volume.

Components (c), (d) and (e), especially the preferred compounds hereinbefore described, are made milder by the presence of the insoluble lithium soap.

It has been discovered that lather (suds) builder compounds having the formula



wherein R^{11} is an alkyl radical containing from about 8 to about 20 carbon atoms, wherein L is selected from the group consisting of 0 and 1, and wherein *m* is a number between about 10 and about 60, can be mixed with lathering components (c), (d) and/or (e) to provide more lather volume and a more stable lather. The above definition comprises component (a) and accordingly, the total of component (a) and the above lather builder compound is desirably from 0% to about 200% by weight, preferably 20% to 70%, of the rest of the lathering components present. An especially preferred lather builder is prepared by condensing dodecanol with about 45 moles of ethylene oxide per mole of dodecanol.

Although the primary use of the lather builder compound is in admixture with lathering components (c), (d) and/or (e), it can also be used as the sole lathering component or in combination with the other lathering components.

Other mixtures of the above lathering agents can be used.

A desirable component which can be incorporated in the bars of this invention, in an amount of from about 0.1% to about 10% by weight of the bar, is a fatty acid monoester of ethylene glycol wherein the fatty acid contains from about 14 to about 20 carbon atoms. Bars containing this component last longer. However, this component acts to suppress the lather if used in too large a quantity.

Preferably, this fatty acid monoester component is used at a level of about 5% by weight of the bar. It is also preferably used with the better lathering components such as 2-hydroxydodecyl methyl sulfoxide. The preferred fatty acyl groups in the monoester are those derived from tallow, e.g., C_{16} and/or C_{18}, but the fatty acyl groups can be derived from other sources such as fatty acids which have been synthetically produced.

It will further be understood that the bars can contain ionic additives such as ionic germicides (either cationic or anioinic) and ultraviolet light absorbers as well as such adjuvants which are common in the toilet bars of commerce including, but without limitations, perfumes, coloring matters and the like. These ionic additives can be present in amounts up to about 10%. Due to the nonionic character of the bar matrix, functional ionic additives will be especially effective (as noted above). In order to obtain the advantages of this invention the bars should be substantially free from anionic detergents and/or alkaline builder materials.

For convenience or economic reasons it may be desirable to "fill" or dilute the bar composition with a normally solid impalpable substance which does not adversely affect the performance of the detergent bar composition. Fillers can be used in the bar compositions in amounts up to about 40%, preferably not more than 30% by weight of the bar.

Materials which can be used as fillers or diluents for detergent bars are, for the most part, commonly used and well known in the art. These materials are naturally impalpable such as those of a waxy nature or are finely ground to a size of about 75 microns or smaller. Conventional filler materials include: substantially insoluble, finely ground minerals such as talc, felspar, quartz, calcium carbonate, bentonite, fuller's earth, clay, kaolin; finely ground organic materials of low solubility such as starch, and calcium and magnesium soaps.

Feel and slip agents such as the agents sold under the trademark "Polyox WSR 301" can be used at low levels in the bars of this invention. (These "Polyox" resins are ultra high molecular weight condensates of ethylene oxide. The molecular weight is in the range of a million or more.) Generally, these "Polyox" agents at low levels (0.1% to 1.0%) provided some increase in the slippery "feel" of the bar and lather, but they did not improve the lather body. At higher levels, these slip agents imparted a slimy "feel" to the bar and lather which is generally undesirable. In the compositions of this invention, slip agents can be employed at the low levels indicated to make more slippery bars and lather "feel," but are not essential.

In making up the bars of this invention, the materials are used in a nearly anhydrous condition so as to give less than about 2% moisture in the final bar. The nonionic base and lathering components are melted together, any fillers or adjuvants used are blended in and the molten mass is cast into suitable molds.

The preferred bars of this invention are bars which in use have desired physical characteristics of firmness and solubility and produce a creamy lather which is unique in character. The absence of hard water curd formation is achieved and the bars are very mild to the skin as can be determined by skin patch tests.

EXAMPLE I

As an example of a preferred bar the following composition was prepared.

	Percent
Lauroyl diethanol amide (lathering component)	35
Polyoxyethylene ether of an alkyl alcohol [1] (lathering component)	10
Lauroyl glyceryl amide (lathering component)	15
Propylene oxide-ethylenediamine-ethylene oxide adduct [2] (base)	40

[1] This term, as used in this example refers to "Sterox AP 100," which has hereinbefore been described.
[2] This term, as used in this example refers to "Tetronic 908," which has hereinbefore been described.

The preceding ingredients were melted and cast into toilet bars of the usual size. These bars had physical characteristics desired in a detergent bar and produced a creamy lather having a unique character. When used to wash the hands in hard water, there was no hard water curd formation. The bars were mild to the skin and had acceptable solubility characteristics, i.e., dissolving sufficiently to clean and lather, but not so rapidly to become unduly slimy or waste away.

When diethanol dodecyl amine oxide, dimethyl dodecyl phosphine oxide, methyl dodecyl sulfoxide, or stearoyl N-methyl glucamide are substituted for the polyoxyethylene ether of an alkyl alcohol in the above example, substantially equivalent results are obtained in that the bars give a substantial lather.

EXAMPLE II

A bar was prepared with the following formula:

	Percent
Polyoxyethylene ether of an alkyl alcohol (lathering component)	35
Lauroyl diethanol amide (lathering component)	35
Polyethylene glycol [1] (base)	30

[1] This term, as used in this example refers to "Polyglycol E 6000" which has hereinbefore been described.

The preceding ingredients were melted and cast into mild bars which were firm and performed satisfactorily as regards cleaning and lathering.

EXAMPLE III

	Percent
Polyoxyethylene ether of an alkyl alcohol (lathering component)	30
Diethanol amide of coconut fatty acids (lathering component)	30
Polyethylene glycol (base)	20
Propylene oxide-ethylene-diamine ethylene oxide adduct (base)	20

The preceding ingredients were melted and cast into bars. These bars were very mild and had acceptable physical characteristics. When these bars were used under normal lavatory conditions to wash the hands, they cleaned, gave a persistant cleaning lather with high volume and did not form a hard water curd.

EXAMPLE IV

	Percent
Polyethylene glycol tertdodecyl thioether [1] (lathering component)	30
Diethanol amide of coconut fatty acids (lathering component)	30
Polyethylene glycol (base)	39.5
Polyox [2] (slip agent)	0.5

[1] This term, as used in this example, refers to "Nonic 218" as hereinbefore described.
[2] This term, as used in this example, refers to "Polyox WSR 301" which has hereinbefore been described.

When the preceding ingredients are melted and cast into bars, the bars are firm and mild, lather well, and are acceptable for personal washing.

EXAMPLE V

When 5% of the cationic surfactant anti-bacterial agent di-isobutyl phenoxy ethoxy dimethyl benzyl ammonium dichloride monohydrate (Hyamine 1622) was substituted for 5% of the lauroyl diethanol amide of Example I, the bar produced had desired washing and lathering characteristics and, in addition, imparted anti-bacterial benefits to the skin of the user. These benefits were verified by body odor reduction.

EXAMPLE VI

When 5% of the ionic ultraviolet light absorber sodium p-aminobenzoate was substituted for 5% of the lauroyl diethanol amide of Example I, the bar produced had desired washing and lathering characteristics and, in addition, afforded to the user a partial protection against skin erythema induced by exposure to the sun's ultraviolet rays ("sunburn").

EXAMPLE VII

Another example of a desirable bar is:

	Percent
2-hydroxydodecyl methyl sulfoxide (lathering component)	20
2-hydroxytetradecyl methyl sulfoxide (lathering component)	20
The condensation product of one mole of fatty alcohols derived from coconut oil and about 45 moles of ethylene oxide (lather builder)	20
Polyethylene glycol (base)	20
Propylene oxide-ethylene-diamine-ethylene oxide adduct (base)	20

This bar is mild and had good lather characteristics.

EXAMPLE VIII

Another example of a mild bar having good lather characteristics is:

	Percent
2-hydroxydodecyl methyl sulfoxide (lathering component)	30
The condensation product of one mole of dodecyl phenol and about 40 moles of ethylene oxide (lather builder)	20
Ethylene glycol monostearate (base)	5
Polyethylene glycol (base)	45

In the claims which follow, the term "consisting essentially of" is not to be construed as excluding minor proportions of adjuvants, fillers, and ionic substances, whether of surfactant or skin treatment character and the like.

Modifications may be made in the invention without departing from the spirit of it. The invention having been described in certain exemplary embodiments, what is claimed as new and desired to be secured by Letters Patent is:

1. A solid toilet bar substantially free of anionic detergents and alkaline builder materials and consisting essentially of:

(1) a base of high molecular weight, normally solid, polymeric nonionic detergent of which at least about 70% by weight is oxyethylene selected from the group consisting of:

(a) propylene oxide-ethylenediamine-ethylene oxide condensates, having the formula

$$(=NCH_2CH_2N=)(C_3H_6O)_x(C_2H_4O)_yH_4$$

wherein x ranges from 1 to about 160 and y ranges from about 300 to about 700 and wherein the molecular weight ranges from about 20,000 to about 30,000 and the percentage by weight of oxyethylene in the condensates is at least about 70% by weight.

(b) propylene oxide-propylene glycol-ethylene oxide condensates, having the formula

$$HO(-CH_2-CH_2O)_x(-\underset{\displaystyle CH_3}{\underset{|}{CH}}-CH_2O)_z(-CH_2CH_2O)_yH$$

wherein x ranges from 1 to about 100 and the sum of y and z ranges from about 160 to about 450, and wherein the molecular weight ranges from about 10,000 to about 20,000 and the percentage by weight of oxyethylene in the condensates is at least about 70% by weight,

(c) polymerized ethylene glycol having the formula

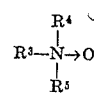
$$HO(-CH_2CH_2O-)_xH$$

wherein x ranges from about 100 to about 500, and

(d) mixtures thereof; and

(2) a nonionic lathering component selected from the group consisting of:

(a) amine oxide detergents having the formula



wherein R^3 is selected from the group consisting of alkyl and monohydroxyalkyl groups containing from about 10 to about 20 carbon atoms and from 0 to about 3 ether linkages, there being at least one moiety of R^3 which constitutes a carbon chain containing no ether linkages and containing from about 10 to about 14 carbon atoms, and wherein R^4 and R^5 are each selected from the group consisting of alkyl and monohydroxyalkyl groups containing from 1 to about 3 carbon atoms;

(b) phosphine oxide detergents having the formula

wherein R^6 is selected from the group consisting of alkyl and monohydroxyalkyl groups containing from about 12 to about 18 carbon atoms, and wherein R^7 and R^8 are each selected from the group consisting of alkyl and monohydroxy alkyl groups containing from 1 to about 3 carbon atoms;

(c) dialkyl sulfoxide detergents having the formula

wherein R^9 is selected from the group consisting of monohydroxyalkyl, alkoxyalkyl and alkoxymonohydroxyalkyl groups containing from about 10 to about 18 carbon atoms, there being at least one moiety of R^9 which constitutes a carbon chain containing no ether linkage and containing from about 10 to about 14 carbon atoms, and wherein R^{10} is selected from the group consisting of alkyl and monohydroxyalkyl groups containing from 1 to about 3 carbon atoms; and

(d) mixtures thereof;

the base (1) ranging from about 30% to about 70% of the composition of the bar by weight; and the lathering component (2) ranging from about 10% to about 70% of the composition of the bar by weight; the bar being firm at room temperatures.

2. The bar of claim 1 wherein the lathering component is amine oxides containing one alkyl radical having from about 10 to about 14 carbon atoms and two short alkyl chains containing from 1 to about 3 carbon atoms and having from 0 to 2 hydroxyl groups attached to said short alkyl chains.

3. The bar of claim 1 wherein the lathering component is phosphine oxides containing one alkyl chain having from about 10 to about 14 carbon atoms and two short alkyl chains having from about one to about three carbon atoms having from 0 to 2 hydroxyl groups attached to said short alkyl chains.

4. The bar of claim 1 wherein the lathering component is 2-hydroxydodecyl methyl sulfoxide.

5. The bar of claim 1 containing as an additional ingredient from 0.1% to about 10% by weight of the bar of a fatty acid monoester of ethylene glycol wherein the fatty acid contains from about 14 to about 20 carbon atoms.

6. The bar of claim 5 wherein the fatty acid monoester is at a level of about 5% by weight of the bar.

7. The bar of claim 1 containing as an additional component, from 0% to about 200% by weight of the lathering components present of a lather builder compound having the formula

wherein R^{11} is an alkyl radical containing from about 8 to about 20 carbon atoms, wherein L is selected from the group consisting of 0 and 1, and wherein m is a number between about 10 and about 60, the total amount of lathering component (a) and the lather builder compound being from 0% to about 200% by weight of the rest of the lathering components present.

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