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SUPERFATTED SOAP

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The present invention has for an object to improve the manufacture of super-fatted materials such as laundry and textile soap and toilet preparations including toilet soap, shaving soap, shaving cream, pomades, skin creams, cosmetics, disinfectants of certain types and the like.

Fatty and wax esters have heretofore been added to materials of this type for super-fatting purposes but they are subject to certain disadvantages including the possibility of becoming rancid.

In accordance with the present invention it has been discovered that certain compounds of the ether type having at least one free hydroxyl group are particularly effective as super-fatting agents when added to materials of the type under consideration. The super-fatting agents used in accordance with the present invention are ethers formed by etherification of glycerins with aliphatic, alicyclic or naphthenic alcohols having 6 or more carbon atoms in the molecule.

The ethers may be formed by reactions involving one or two of the hydroxyl groups of the glycerin or polyglycerin. These ethers are of oily or salve-like consistency, the higher molecular members being of more solid consistency, and can be worked with the soap to provide even distribution throughout the same to form desired compositions. They do not become rancid. Because of the alcohol character, they readily absorb water and form stable emulsions. They have no irritating effect on the skin and are readily absorbed by it.

Ethers of the type described especially those which are sufficiently liquid are good solvents for soap and useful in the production of soaps for use in the textile industry and for laundry purposes.

Some of these ethers are particularly effective for the preparation of emulsions of water and saponified fats, waxes, fatty acids, organic solvents or the like.

The ethers useful for the purpose of the present invention include a considerable variety. They may be formed not only from true trihydric glycerin, but also from di-glycerin and polyglycerin. Broadly the invention comprises substituting one or more of the replaceable hydrogen atoms in the glycerins with groups such as alkyl (especially methyl, ethyl and propyl), alkoxy, halogen, carboxyl, etc.

As alcohol components the normal primary saturated or unsaturated aliphatic alcohols having 6 to 30 carbon atoms in the molecule obtainable from the natural fats and waxes as by high pressure hydrogenation are particularly suitable and have good fattening properties. Those having 8 to 18 carbon atoms are preferred for most uses. If the unsaturated alcohols are used, the octadecenyl and even those having 20 or even 24 carbon atoms are effective because of their more liquid properties. The alicyclic and naphthenic alcohols may also be used as alcohol components. Desirable effects can be obtained by the use of mixtures of different ethers as will be well understood.

The proportion of ethers of the type indicated which are added to soaps, cosmetics and various other materials of the type indicated may vary within wide limits. As little as a fraction of 1% is beneficial in some compounds, especially if used with other fatting agents, and as much as 40% may be added in others. Usually for super-fatty soaps for laundry and textile use, the proportion of ether added may range between 2.5 and 5 to provide the most satisfactory results.

Example 1.—A textile soap which is a good emulsifying agent for oils and fats and which possesses excellent washing and cleaning power is obtained if 100 kgs. of oleic acid is neutralized with 100 kgs. of potash lye (20%) and 25 kgs. of glycerin mono-octadecenyl ether are combined therewith.

Example 2.—60 kgs. of linseed oil is saponified with 24 kgs. of potash lye and 35 kgs. of water and 75 kgs. of glycerin-dioctyl ether are combined therewith. This product is soluble in water and possesses a high dissolving and emulsifying capacity for fats, oils, waxes, fatty acids, hydrocarbons and the like, so that it can be effectively employed for chemical purification for home laundry and in the textile and leather industries.

Example 3.—A super-fatted cake soap may contain 4 to 5% of the mono-ether prepared from glycerin and cocoanut or palm kernel alcohols. This ether which has a saponification number of 307 and a waxy consistency is added to the boiled soap while in a liquid condition. After the soap and the ether are combined the soap may be formed into cakes in the usual way.

Example 4.—A cleaning agent for removing spots which cleaning agent can be readily washed out is obtained by combining 75 kgs. of glycerin mono-octyl ether (boiling point at 2–3 mm. of mercury 130 to 140° C.) are combined with 300 kgs. of Turkey red oil or with ammonia or organic base sulfates or sulfonates of oleyl alcohol. The Turkey red oil or sulfates or sulfonates may have a 38% fat content. The mixture may be diluted with 100 to 300 kgs. of water, if desired. Instead

of the glycerin octyl ether, glycerin naphthenic ether obtained by etherification of glycerin with naphthenic alcohols (boiling point at 15 mm. of mercury 90 to 125° C.).

Example 5.—An excellent cream which can be perfumed and colored as desired is obtained by mixing a neutral olive oil potash soap with 15 to 20% of glycerin mono-cetyl ether.

Example 6.—Face cream containing glycerin 100 parts; potassium stearate 2 parts; polyglycerol naphthenyl ether 30 parts.

Example 7.—Soap powder containing soap 27 parts; soda 12 parts; waterglass 1.5 parts; cyclohexyl diglycerin ether acetate 1.5 parts.

Example 8.—Skin cream containing olive potash soap 80 parts; perfume 1.5 parts, dimyristin ether of diglycerol 18 parts.

The foregoing description of particular embodiments is illustrative merely and is not intended as defining the limits of the invention. It will be understood that the high molecular alcohols used in the formation of the ether not only may be saturated or unsaturated but may be substituted by hydroxyl, sulfonic, or like groups provided the fatty character is retained and no deleterious group is introduced.

For further disclosure of the features and advantages of this invention reference should be made to applicant's copending application filed of even date herewith (now Patent No. 2,091,162).

I claim:

1. A soap composition comprising a water-soluble soap and 1 to 40% of a super-fatting agent consisting of an ether of the group consisting of the ethers of glycerin and polyglycerin with alcohols of the group consisting of the primary saturated and unsaturated aliphatic, the alicyclic and the naphthenic alcohols having at least 8 carbon atoms in the molecule.

2. A toilet soap having incorporated therein a super-fatting agent consisting of an ether of glycerin and alcohol of the kind obtained from the natural fats and waxes and having at least 8 carbon atoms in the molecule.

3. A water-soluble soap having incorporated therein a super-fatting agent consisting of propionate of polyglycerin cyclohexyl ether.

4. A water-soluble soap having incorporated therein a super-fatting agent consisting of dicetyl polyglycerin ether.

5. A soap consisting of as its principal ingredients a water-soluble soap together with as a super-fatting agent 1 to 40% of an ether of glycerine and an alcohol of the kind obtained from natural fats and waxes and having from 8 to 18 carbon atoms in the molecule.

6. A soap consisting of as its principal ingredients a water-soluble soap together with as a super-fatting agent about 2.5 to 5% of an ether of glycerine and an alcohol of the kind obtained from natural fats and waxes and having from 8 to 18 carbon atoms in the molecule.

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