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2,733,211

IMPREGNATED SCOURING PAD

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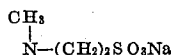
No Drawing. Application December 30, 1949, Serial No. 136,160

1 Claim. (Cl. 252—91)

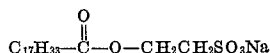
This invention relates to an improved impregnated scouring pad.

More specifically the invention relates to a foam-forming, non-curd-forming scouring pad capable of brightening aluminum comprising steel wool or the like metal, a binding agent and a foam-forming synthetic detergent. Specifically this composition may contain additionally a stabilizing agent, a rust inhibitor, a mold inhibitor, a coloring agent and a filler.

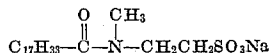
The synthetic detergent may be any surface-active material other than soap which contains an RCOY grouping. The R represents an aliphatic chain containing from 11 to 17 carbon atoms which may be interrupted by either ester or ether linkages. The Y may be $O(CH_2)_2SO_3Na$, SO_3Na or



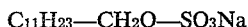
Thus, the sodium salt of oleic isethionate has the formula:



The sodium salt of oleic methyl tauride has the formula:



Sodium lauryl sulfate has the formula:

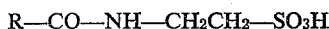


The following classes of synthetic detergents contain such a grouping and have been shown to be capable of producing a polished surface on aluminum:

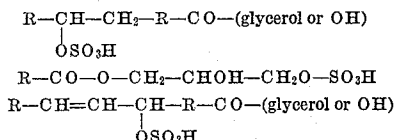
Salts of sulfated or sulfonated esters of fatty acids



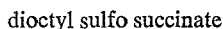
Salts of sulfated or sulfonated amides of fatty acids



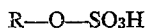
Salts of sulfated vegetable oils



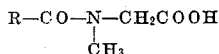
Sulfonates of esters of polycarboxylic acids



Alcohol sulfates

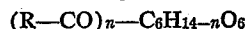


Fatty acid sarcosides



Fatty acid esters of sorbitan and the polyoxyethylene derivatives of the same

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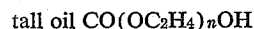


and ethylene oxide derivatives.

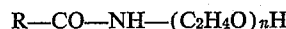
Fatty acid polyglycol esters



Tall oil polyglycol esters



Fatty acid polyglycol amides



Fatty acid alkylolamine condensates



Alkyl aryl sulfonates, alkyl naphthalene sulfonates, alkyl sulfonates, alkyl polyethers and alkyl aryl polyethers do not fall in this category and are not included as the important polishing ingredients. They may, however, be added as bulk detergents.

The binding agent may be any film-forming material of which the following are typical examples:

Flours

Starches

Starch products such as dextrans

Sugars

Natural gums such as gum arabic

Proteinaceous vegetable materials such as alginates, and corn gluten

Animal proteinaceous material such as egg albumin

Cellulose derivatives such as the sodium salt of carboxymethylcellulose and methyl cellulose

Waxes such as paraffin wax and beeswax

Synthetic water-soluble materials such as polyethylene oxides or polyvinyl alcohol

The stabilizing agent may be selected from those materials commonly used to prevent retrogradation of starch solutions, such as urea and dicyandiamide.

The rust inhibitor may be selected from the numerous materials commonly known to be effective for preventing the rusting of iron, such as sodium carbonate, sodium phosphate, borax, sodium chromate and sodium nitrite.

The mold inhibitor may be selected from those materials commonly known to inhibit mold growth such as pentachlorophenol, phenol, 8-hydroxyquinoline and formaldehyde.

The coloring agent may be any material which would give a pleasing color to the scouring pads.

The filler material may be any cheap finely divided or water-soluble material such as clay, silica, lava, gypsum, whiting, wood flour or nut shell flours.

The steel wool is that form of fibrous steel which is commonly used for scouring purposes.

Example I

1500 parts by weight of water were poured into a suitable vessel. 850 parts of corn dextrin were added and dispersed evenly throughout the solution. The mixture was then heated to 85° C. on a steam bath and held at this temperature for about 10 minutes during which time the dextrin swelled slightly, forming a slightly viscous solution. 150 parts by weight of the sodium salt oleic isethionate were then added. The mixture was then stirred at 85° C. until homogeneous.

The mixture at this point was slightly cloudy but quite fluid. A loose ball of steel wool was placed in the bottom of a metal cylinder. The heated composition was poured over the steel so as to completely cover it. By means of a close-fitting metal rod, the excess composition was squeezed out of the pad. A compact pad completely impregnated with the above composition was formed. This pad was dried in an oven at 85° C. It was found to foam

3

well when wet with water, to form a high polish on aluminum when applied as in scrubbing, and finally to have no visible effect on the foam of synthetic dishwashing detergents when dipped into solutions of these materials.

Example II

Identical to Example I except that 150 parts of the sodium salt of oleic methyl tauride were added in place of the sulfonated ester used in Example I.

Example III

Identical to Example I except that 150 parts of sodium lauryl sulfate were added in place of the sulfonated ester used in Example I.

Example IV

1500 parts by weight of water were poured into a suitable vessel, 186 parts of urea were added and dissolved. When the urea had dissolved completely, 650 parts of corn dextrin were added. When the dextrin dispersed evenly throughout the solution, the mixture was heated to 85° C. on a steam bath and held at this temperature for about ten minutes during which time the dextrin swelled, forming a slightly viscous solution. The following materials were then added. 30 parts of the sodium salt of oleic isethionate, 120 parts of alkyl phenyl polyglycol ether, 10 parts of sodium nitrite, 0.7 part of Diazo Brilliant Scarlet 3G, 0.7 part of Diamine Scarlet 3BA and 2 parts of pentachlorophenol. The mixture was then stirred at 85° C. until homogeneous.

4

The mixture at this point was slightly cloudy but quite fluid. A loose ball of steel wool was placed in the bottom of a metal cylinder. The heated composition was poured over the steel so as to completely cover it. By means of a close-fitting metal rod, the excess composition was squeezed out of the pad. A compact pad completely impregnated with the above composition was formed. This pad was dried in an oven at 85° C. It was found to foam well when wet with water, to form a high polish on aluminum when applied as in scrubbing to resist rusting when wet with water as long as some impregnation material was left on the pad and finally to have no visible effect on these materials.

We claim:

- 15 An improved scouring pad comprising steel wool impregnated with a soap-free mixture of 150 parts by weight of the sodium salt of oleic isethionate and 850 parts by weight of corn dextrin.

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