

UNITED STATES PATENT OFFICE

2,221,333

STABILIZED SOAP

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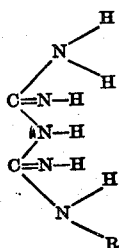
No Drawing. Application September 24, 1936,
Serial No. 102,332

5 Claims. (Cl. 23—250)

The present invention relates to the manufacture of soap and soap products, and more particularly soap and soap products made from ingredients, one or more of which ordinarily deteriorate or develop rancidity, in a relatively short time. One of the objects of the greatest invention is to inhibit or retard this deteriorating action by incorporating in the soap stock, or soap, or in one or more of the ingredients used in the manufacture thereof, a small quantity of one or more of the preferred class of substances herein disclosed.

In accordance with the present invention it has been found that on incorporating in an unstable soap a relatively small proportion of a biguanide compound, as for example biguanide and its substitution products, salts and derivatives thereof, its tendency to develop rancidity is markedly lessened and the treated soap rendered substantially stable.

More particularly the present invention comprises the use in the stabilization of soap and soap products of biguanides possessing the general formula of



wherein R is hydrogen or an organic radical, as for example an alkyl, aryl, aralkyl and alicyclic radical.

In practicing the present invention, the preferred stabilizing agent may be introduced at any convenient stage of the process of soap manufacture. For example, after the fatty acid has been obtained in the usual manner and has been saponified to produce a soap stock, the products comprising the preferred stabilizers may be incorporated therein. The soap product may then be dried in the usual manner and may be marketed in the form of cakes, flakes or any other form as may be desired. Further, if desirable, the stabilizing agent may be incorporated into the dry soap in the well-known crutching process.

As one method of testing the stabilizing properties of the preferred class of materials, the following procedure was employed:

A substantially neutral soap was prepared by

saponifying a mixture of substantially three parts of an edible tallow and substantially one part of coconut oil with sodium hydroxide. Substantially 0.1% based on the weight of the soap (0.005 gram) of one of the preferred stabilizers was incorporated therein by a suitable means. Five grams of the treated soap were placed in a 250 c. c. iodine flask, a piece of filter paper saturated with water was torn to small pieces and placed in the flask. The flask was then tightly stoppered and placed in an oven maintained at a constant temperature of 50° C. At the end of each day the stopper was removed and any odor indicative of rancidity noted. Similar tests were carried out with the same soap but to which no stabilizer was added, and the period of stability compared as hereinafter set forth.

As specific examples and as specific embodiments of the present invention, but in no sense to be understood as limitative of the scope of the invention, the following biguanide compounds were incorporated in a soap of the above composition and tested in the manner described. At the end of the test period indicated in the table below, the soaps containing the preferred materials had remained stable, having failed to develop rancidity, and undoubtedly would have remained stable for much longer periods of time.

Table I

Stabilizing agent	Stabilizing agent, based on the weight of the soap	Duration of test	
		Per cent	Days
Mono ortho tolyl biguanide.....	0.1		20
Alpha diphenyl biguanide.....	0.1		16
Mono p-phenetidyl biguanide.....	0.1		16
Mono ortho biphenyl biguanide.....	0.1		13
Mono phenyl biguanide hydrochloride.....	0.1		12
Mono phenyl biguanide.....	0.1		12
Mono xylyl biguanide.....	0.1		18
Mono xylyl biguanide hydrochloride.....	0.1		18
Mono ortho anisidyl biguanide hydrochloride.....	0.1		18
Mono ortho anisidyl biguanide.....	0.1		18
Mono para biphenyl biguanide.....	0.1		18
Blank.....	None		4

Another important advantage in the use of the preferred stabilizers is the fact that, while they are exceptionally strong stabilizers against rancidity formation, they do not generally discolor the soap on exposure to sunlight. Many of the stabilizers heretofore employed in the soap industry were exceptionally bad discolorers of soap. One specific example is diphenyl amine. The preferred materials of the present invention for the most part not only do not discolor the soap

on exposure to sunlight, but very markedly prevent its discoloration when so exposed. Thus, soaps prepared from edible tallow and cocoanut oil as described above and containing 0.1%,
5 based on the weight of the soap, of mono ortho tolyl biguanide, alpha diphenyl biguanide, mono phenyl biguanide hydrochloride, mono phenyl biguanide, mono xylyl biguanide, mono xylyl biguanide hydrochloride, mono ortho anisidyl biguanide hydrochloride, mono ortho anisidyl
10 biguanide and mono ortho phenetidyl biguanide respectively showed no discoloration when exposed to direct sunlight for one hundred hours.

From the above data it is shown that the
15 preferred class of compounds possess exceptional stabilizing properties when incorporated in soap and soap products.

Other biguanide compounds which have been employed to good advantage in the practice of
20 this invention include alpha naphthyl biguanide, alpha naphthyl biguanide hydrochloride and biguanide hydrochloride. Included within the scope of this invention is the use of the analogues and equivalents of those compounds specifically
25 set forth above. Thus, it will readily be apparent that other salts than the hydrochloride may be so employed.

The amount of the selected one or mixtures of the preferred substances which may be added
30 to the soap or soap stock or ingredients used in the manufacture thereof, for effecting the desired result, may be varied, but in general it will be found that good results may be obtained by adding on a weight basis, from 0.01% to 1.0%

of the stabilizing agent to the soap or soap stock. The present invention is limited solely by the following claims attached hereto as part of the specification.

What is claimed is:

1. A soap comprising a water soluble salt of a higher fatty acid stabilized against deterioration and development of rancidity by having incorporated therein more than 0.01% of a mono aryl substituted biguanide. 5
2. A soap comprising a water soluble salt of a higher fatty acid stabilized against deterioration and development of rancidity by having incorporated therein more than 0.01% of an aryl hydrocarbon substituted biguanide said aryl substituent being selected from the benzene, biphenyl and naphthalene series. 10
3. A soap comprising a water soluble salt of a higher fatty acid stabilized against deterioration and development of rancidity by having incorporated therein more than 0.01% of mono ortho tolyl biguanide. 15
4. A soap comprising a water soluble salt of a higher acid stabilized against deterioration and development of rancidity by having incorporated therein more than 0.01% of mono xylyl biguanide. 20
5. A soap comprising a water soluble salt of a higher fatty acid stabilized against deterioration and development of rancidity by having incorporated therein more than 0.01% of mono phenyl biguanide. 25

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