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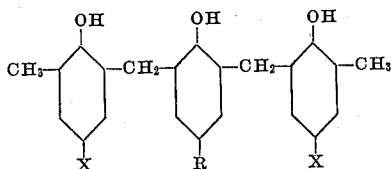
TRIS-PHENOLS

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This invention relates to new and useful compositions of matter. More particularly this invention relates to tris-phenols of the general formula.



where X is a halogen atom and where R is a long chain alkyl radical such as a nonyl radical.

The new compounds have been found to have antiseptic properties and to be particularly useful in detergent soap compositions.

As illustrative of the preparation of the new compounds of this invention is the following:

Example I

Approximately 14.0 parts by weight of 2,6-dimethylol-p-n-nonyl phenol, approximately 28.8 parts by weight of 4-chloro-o-cresol and approximately 2 parts by weight of conc. hydrochloric acid are intimately mixed. The reaction is exothermic and the temperature rises to about 105° C. whereupon a dark amber viscous oil develops. The reaction mix is then permitted to stand with agitation at about 30° C. for about 24 hours. The reaction mass is then slurried with heptane and then the reaction mass is filtered. The filter cake is washed with water and then recrystallized from heptane. The recrystallized product is a fine white crystalline solid having a melting point of 138.5–139.5° C. and identified as 4-n-nonyl-a,a'-bis(5-chloro-3-methyl-2-hydroxy-phenyl)-2,6-xyleneol.

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Example II

Employing the procedure of Example I but replacing 4-chloro-o-cresol with an equimolecular proportion of 4-bromo-o-cresol there is obtained 4-n-nonyl-a,a'-bis(5-bromo-3-methyl-2-hydroxy-phenyl)-2,6-xyleneol.

The new compounds are readily incorporated in a detergent soap whether (the soap) be liquid or solid. They, also, remain permanently in the detergent composition and do not affect the lathering, cleansing or physical properties of the detergent soap. Relatively small amounts of the tris-phenols of this invention in a detergent composition have been found to yield efficient antiseptic detergent compositions. While amounts in the range of 1–3% by weight based upon the detergent soap are preferred amounts in the range of 0.5–10% by weight may be employed where desired.

The term "soap" or "detergent soap" as employed herein is employed in its popular or ordinary meaning, i. e., cleansing compositions prepared from an alkali metal compound such as potassium or sodium hydroxide and a fat or fatty acid, both saturated and unsaturated.

While the invention has been described in detail with respect to certain embodiments it is not so limited and it is to be understood that modifications and variations obvious to those skilled in the art may be made without departing from the spirit or scope of this invention.

What is claimed is:

1. A 4-nonyl-a,a'-bis(5-halo-3-methyl-2-hydroxy-phenyl)-2,6-xyleneol wherein the halogen substituent in the 5-position of the respective terminal phenyl nuclei is selected from the group consisting of chlorine and bromine.

2. 4-n-nonyl-a,a'-bis(5-chloro-3-methyl-2-hydroxy-phenyl)-2,6-xyleneol.

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