This invention relates to new higher alkyl resorcinols characterized by the fact that the alkyl group is attached to the resorcinol nucleus by a carbon other than an end carbon and contains not less than seven carbon atoms.

The compounds may be represented by the general formula \( \text{C}_n \text{H}_m (\text{OH})_2(\text{CHR}_3 \text{R}_2) \) in which \( R_1 \) may be hydrogen or an alkyl and \( R_2 \) and \( R_3 \) are alkyl groups, either straight chain or branched, the group \( (\text{CHR}_3 \text{R}_2) \) containing not less than seven carbon atoms.

Among the compounds within the scope of this invention are the heptyl, the octyl and the nonyl derivatives of resorcinol.

The usual method for preparing alkyl resorcinols, namely treating resorcinol with a fatty acid, fatty acid chloride or fatty acid anhydride in the presence of a condensing agent, and then reducing the resulting ketone produces only primary alkyl resorcinols. The compounds of the present invention cannot be obtained by this procedure.

The new alkyl resorcinols may be prepared very efficiently, simply and comparatively cheaply by the condensation of resorcinol with an alcohol or alkyl halide having the desired number and arrangement of carbon atoms.

The new alkyl resorcinols are characterized by special germicidal and antiseptic properties combined with practical non-toxicity. They may be incorporated in various solutions, jellies, lozenges or other vehicles in proportions ranging up to five parts of the alkyl resorcinol for one thousand parts of the medium, and in special preparations for internal administration they may be used in higher concentrations ranging up to full strength.

Secondary octyl resorcinol may be prepared by the process described in the following example:

A mixture of 100 g. of resorcinol, 25 g. of secondary octanol (methyl n-hexyl carbinol, \( \text{CH}_3 \text{CH}_2 \text{OH} \cdot \text{CH} \cdot \text{CH}_2 \cdot \text{CH}_2 \cdot \text{CH}_2 \cdot \text{CH}_2 \cdot \text{CH}_3 \)), and 10 g. of zinc chloride is heated to 150° C. until water distills off. More of the octanol is added slowly at such rate as to correspond to the water distilling off. The oil which comes off with the water is constantly returned to the reaction mixture by means of a water separator. After a total of 80 gr. of the octanol has been added, the reaction is allowed to continue for one hour, after which the temperature is raised to 200° C. when heating is stopped. The resulting oil is washed with water and distilled, the fraction boiling at 190-210° C. (3 mm.) being collected. The distillate is a colorless to pale yellow oil.

Secondary heptyl resorcinol may be prepared by the process described in the following example:

22 g. resorcinol, 36 g. secondary heptyl bromide (\( \text{CH}_3 \text{CH}_2 \text{CH}_2 \text{CH}_2 \text{CH}_2 \text{CH}_2 \text{CH}_2 \text{CH}_2 \text{Br} \)) and 5 g. anhydrous zinc chloride are mixed and heated while stirring to 130° C. until no further evolution of gas takes place. The mixture is allowed to cool, taken up with toluol, and washed several times with water, then it is distilled in vacuo. The distillate is redistilled and the fraction boiling at 178°-190° C. (3 mm.) is collected.

It is to be understood that the foregoing embodiments are merely illustrative and by no means limitative of the invention which may assume various other forms—as to the procedures and as to the particular alkyl resorcinols prepared—within the scope of the appended claims.

1 claim:

1. Alkyl resorcinols of the general formula \( \text{C}_n \text{H}_m (\text{OH})_2(\text{CHR}_3 \text{R}_2) \) where \( H \) is hydrogen, and \( R_1 \) and \( R_2 \) are alkyls, the group \( (\text{CHR}_3 \text{R}_2) \) containing not less than seven carbon atoms, and being attached to the resorcinol nucleus by a carbon other than an end carbon.

2. Heptyl resorcinols in which the alkyl is a secondary heptyl group attached to the resorcinol nucleus by a carbon other than an end carbon.

3. Octyl resorcinols in which the alkyl is a secondary octyl group attached to the resorcinol nucleus by a carbon other than an end carbon.

4. Secondary heptyl resorcinol having the formula

\[
\text{CH}_3 \text{CH}_2 \text{CH}(\text{OH})_2 \]

5. Secondary octyl resorcinol having the formula

\[
\text{CH}_3 \text{CH}_2 \text{CH}_2 \text{CH}(\text{OH})_2 \]

6. Secondary nonyl resorcinol having the formula

\[
\text{CH}_3 \text{CH}_2 \text{CH}_2 \text{CH}_2 \text{CH}(\text{OH})_2 \]

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