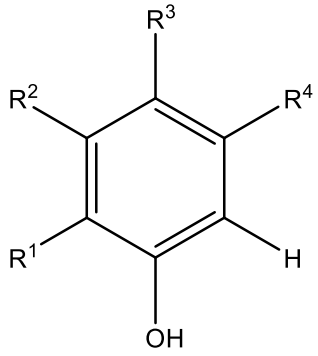
Claims

1. Process comprising the process steps of:

a) adding sodium n-dodecyl sulfate,

b) adding a base,

c) adding a phenol of the formula (**I**):



(**I**)

where R^1, R^2, R^3, R^4 are selected from:

-H, -(C_1-C_{12})-alkyl, -O-(C_1-C_{12})-alkyl, -(C_6-C_{20})-aryl, -O-(C_6-C_{20})-aryl;

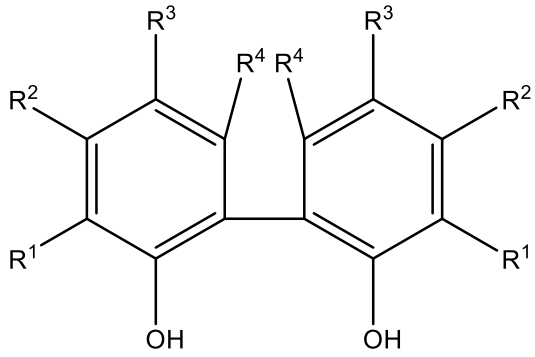
wherein the alkyl groups and aryl groups cited may be substituted as follows:

substituted -(C_1-C_{12})-alkyl groups, substituted -O-(C_1-C_{12})-alkyl, substituted -(C_6-C_{20})-aryl, substituted -O-(C_6-C_{20})-aryl may have one or more substituents; the substituents are each independently selected from: -(C_1-C_{12})-alkyl, -O-(C_1-C_{12})-alkyl, halogen,

d) heating the reaction mixture of a) to c) to a temperature in the range from 50°C to 100°C,

e) adding hydrogen peroxide to the reaction mixture to form a product (II),

f) cooling the reaction mixture so that the product (**II**) precipitates:



(**II**),

wherein the cooling step f) includes an additional step f2) involving active cooling of the reaction mixture.

2. Process according to Claim 1,

where R^1, R^2, R^3, R^4 are selected from:

-H, -(C_1-C_{12})-alkyl, -O-(C_1-C_{12})-alkyl.

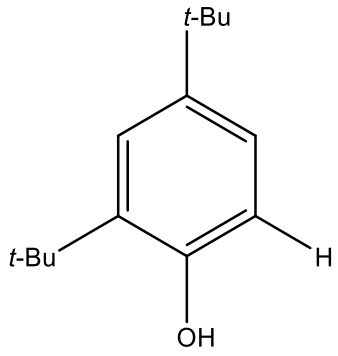
3. Process according to either of Claims 1 and 2,

where R^2 and R^4 are each -H.

4. Process according to any of Claims 1 to 3,
where R^1 and R^3 are selected from:
-(C_1-C_{12})-alkyl, -O-(C_1-C_{12})-alkyl.

5. Process according to any of Claims 1 to 4,
where R^1 and R^3 are -(C_1-C_{12})-alkyl.

6. Process according to any of Claims 1 to 5,
wherein the phenol (**I**) has the structure (**3**):



(**3**).

7. Process according to any of Claims 1 to 6,
wherein the base in process step b) is sodium hydroxide.

8. Process according to any of Claims 1 to 7,
wherein the addition of hydrogen peroxide in process step e) is carried out by dropwise addition of a hydrogen peroxide solution.

9. Process according to any of Claims 1 to 8,
wherein the temperature set in process step d) is maintained during the addition of hydrogen peroxide.

10. Process according to any of Claims 1 to 9,
wherein the temperature set in process step d) is maintained over a period in the range from 10 minutes to 2 hours after the addition of hydrogen peroxide.

11. Process according to Claim 1,
wherein the active cooling is effected with the aid of an ice bath.

12. Process according to any of Claims 1 to 11,
comprising the additional process step g):
g) washing the precipitated product with water.