C L A I M S

1. A method for producing an alkylaryl carbonate comprising:
   a) contacting a stream comprising an aromatic hydroxy compound and a stream comprising a dialkylcarbonate in a reactive distillation column containing a bed of heterogeneous transesterification catalyst, the bed having a top and a bottom; and
   b) withdrawing a product stream comprising the alkylaryl carbonate from the reactive distillation column wherein the aromatic hydroxy compound is fed to the column at a first feed point located above the top of the catalyst bed.
2. A method as claimed in claim 1 wherein the aromatic hydroxy stream contains water.
3. A method as claimed in claim 1 where the reactive distillation column contains an item selected from the group consisting of trays and packing between the top of the catalyst bed and the first feed point.
4. A method as claimed in any of claims 1-3 where the reactive distillation column contains a second catalyst bed between the top of the catalyst bed and the first feed point.
5. A method as claimed in claim 4 wherein the second catalyst accelerates the reaction of water with dialkylcarbonate.
6. A method as claimed in any of claims 1-5 further comprising feeding a homogeneous transesterification catalyst to the reactive distillation column.
7. A method as claimed in claim 6 wherein the homogeneous transesterification catalyst is fed to the column at a point below the first feed point.

8. A method as claimed in any of claims 1-7 wherein the aromatic hydroxy compound is phenol.

9. A method as claimed in any of claims 1-8 wherein the dialkylcarbonate is selected from the group consisting of dimethyl carbonate, diethyl carbonate and mixtures thereof.

10. A method as claimed in any of claims 1-9 wherein the dialkylcarbonate is fed to the reactive distillation column at a point below the top of the catalyst bed.

11. A method as claimed in any of claims 1-10 wherein the dialkylcarbonate is fed to the reactive distillation column at a point below the bottom of the catalyst bed.

12. A method as claimed in any of claim 1-11 wherein the heterogeneous catalyst comprises titanium.

13. A method as claimed in any of claims 1-12 wherein the aromatic hydroxy compound has a water content of less than 0.5 wt% when it first contacts the top of the heterogeneous transesterification catalyst bed.

14. A method as claimed in any of claims 1-13 wherein the aromatic hydroxy compound has a water content of less than 500 ppmw when it first contacts the top of the heterogeneous transesterification catalyst bed.

15. An apparatus for producing an aromatic carbonate comprising:

a) a reactive distillation column having a top and bottom each with an outlet and at least two inlets;

b) a phenol feed line for transporting phenol which feed line is in fluid communication with one of the inlets;

c) a diethylcarbonate feed line for transporting diethylcarbonate which feed line is in fluid communication with one of the inlets;

d) a top product line for transporting an overhead product that is in fluid communication with the top outlet;

e) a bottom product line for transporting a bottoms product that is in fluid communication with the bottom outlet;

f) a heterogeneous catalyst bed having a top and a bottom that is located in the reactive distillation column

wherein the phenol feed line is located above the top of the catalyst bed.

16. An apparatus as claimed in claim 15 further comprises an inlet for homogenous catalyst that is in fluid communication with the reactive distillation column at a point that is below the point where the phenol feed line is in fluid communication with the reactive distillation column.

CLAIMS

1. A method for producing an alkylaryl carbonate comprising:
a) contacting a stream comprising an aromatic hydroxy compound and water, and a stream comprising a dialkylcarbonate in a reactive distillation column containing a bed of heterogeneous transesterification catalyst, the bed having a top and a bottom; and
b) withdrawing a product stream comprising the alkylaryl carbonate from the reactive distillation column wherein the aromatic hydroxy compound is fed to the column at a first feed point located at least one theoretical tray above the top of the catalyst bed; wherein the aromatic hydroxy compound has a water content of less than 0.5 wt % when it first contacts the top of the heterogeneous transesterification catalyst bed.

2. A method as claimed in claim 1 where the reactive distillation column contains an item selected from the group consisting of trays and packing between the top of the catalyst bed and the first feed point.

3. A method as claimed in claim 1 where the reactive distillation column contains a second catalyst bed between the top of the catalyst bed and the first feed point.

4. A method as claimed in claim 3 wherein the second catalyst accelerates the reaction of water with dialkylcarbonate.

5. A method as claimed in claim 1 further comprising feeding a homogeneous transesterification catalyst to the reactive distillation column.

6. A method as claimed in claim 5 wherein the homogeneous transesterification catalyst is fed to the column at a point below the first feed point.

7. A method as claimed in claim 1 wherein the aromatic hydroxy compound is phenol.

8. A method as claimed in claim 1 wherein the dialkylcarbonate is selected from the group consisting of dimethyl carbonate, diethyl carbonate and mixtures thereof.

9. A method as claimed in claim 1 wherein the dialkylcarbonate is fed to the reactive distillation column at a point below the top of the catalyst bed.

10. A method as claimed in claim 1 wherein the dialkylcarbonate is fed to the reactive distillation column at a point below the bottom of the catalyst bed.

11. A method as claimed in claim 1 wherein the heterogeneous catalyst comprises titanium.

12. A method as claimed in claim 1 wherein the aromatic hydroxy compound has a water content of less than 500 ppmw when it first contacts the top of the heterogeneous transesterification catalyst bed.