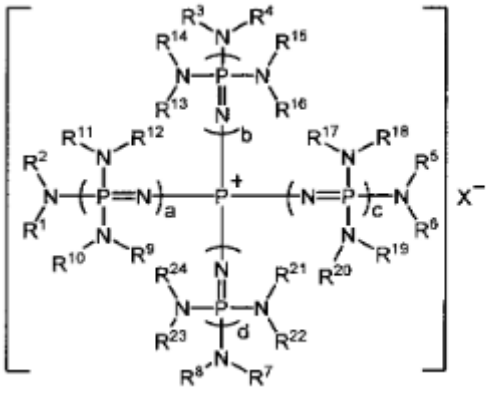
WHAT IS CLAIMED IS:

1. A method for producing at least one thermoplastic resin selected from a group consisting of a polycarbonate, polyester and polyester carbonate, comprising the process of melt polycondensation of a dihydroxy compound with a diaryl carbonate and/or a dicarboxylic acid ester in the presence of a transesterification catalyst selected from a compound represented by formula (1) below.

[Figure 1]



(1)

(In formula (1), R^1～R^{24} are each independently a hydrogen atom, an alkyl group having 1～10 carbon atoms, or a cycloalkyl group, wherein some carbon atoms of the alkyl group and the cycloalkyl group may be replaced by heteroatoms, and among R^1～R^{24}, alkyl groups substituted on a same N atom may be joined together to form a ring. R^2 and R^3, R^4 and R^5, R^6 and R^7, R^8 and R^1 may respectively be joined together to form a ring; R^9 or R^{10}, R^1 or R^2, and R^{11} or R^{12} may respectively be joined together to form a ring; R^{13} or R^{14}, R^3 or R^4, and R^{15} or R^{16} may respectively be joined together to form a ring; R^{17} or R^{18}, R^5 or R^6 and R^{19} or R^{20} may respectively be joined together to form a ring; R^{21} or R^{22}, R^7 or R^8, and R^{23} or R^{24} may respectively be joined together to form a ring; R^1 or R^2, R^3 or R^4, and R^5 or R^6 may respectively be joined together to form a ring; R^3 or R^4, R^5 or R^6, and R^8 or R^7 may respectively be joined together to form a ring; R^5 or R^6, R^8 or R^7, and R^1 or R^2 may respectively be joined together to form a ring; and R^7 or R^8, R^1 or R^2, and R^3 or R^4 may respectively be joined together to form a ring. a～d are independently 0 or 1. X^- is a monovalent anion.)

2. The method for producing at least one thermoplastic resin selected from a group consisting of a polycarbonate, a polyester, and a polyester

carbonate according to claim 1, wherein said dihydroxy compound is bisphenol A.

3. The method for producing at least one thermoplastic resin selected from a group consisting of a polycarbonate, a polyester, and a polyester carbonate according to claim 1 or 2, wherein said diaryl carbonate is diphenyl carbonate.

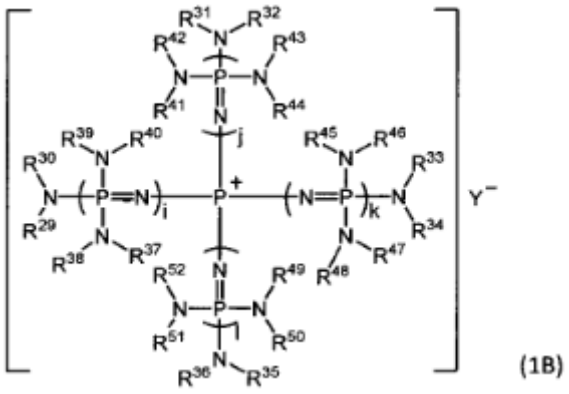
4. The method for producing at least one thermoplastic resin selected from a group consisting of a polycarbonate, a polyester, and a polyester carbonate according to any one of claims 1 to 3, wherein said dicarboxylic acid ester is diphenyl terephthalate and/or diphenyl isophthalate.

5. The method for producing at least one thermoplastic resin selected from a group consisting of a polycarbonate, a polyester, and a polyester carbonate according to any one of claims 1 to 4, comprising the process of melt polycondensation of an aromatic dihydroxy compound and a diaryl carbonate in the presence of said transesterification catalyst.

6. The method for producing at least one thermoplastic resin selected from a group consisting of a polycarbonate, a polyester, and a polyester carbonate according to any one of claims 1 to 5, wherein said transesterification catalyst is a compound represented by said formula (1).

7. The method for producing at least one thermoplastic resin selected from a group consisting of a polycarbonate, a polyester, and a polyester carbonate according to claim 6, wherein said formula (1) is represented by the following formula (1b).

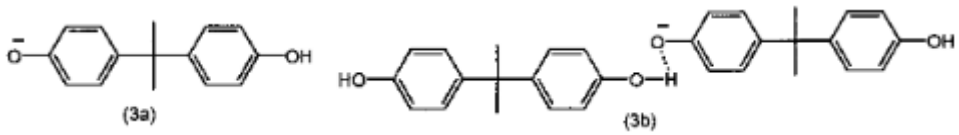
[Figure 3]



(In formula (1B), R^{29}～R^{52} are each independently a hydrogen atom or an alkyl group having 1～10 carbon atoms; among R^{29}～R^{52}, alkyl groups substituted on a same N atom may be joined together to form a ring; R^{30} and R^{31}, R^{32} and R^{33}, R^{34} and R^{35}, R^{36} and R^{29} may respectively be joined together to form a ring. i～l are independently 0 or 1, respectively; Y^- is a monovalent anion.)

8. The method for producing at least one thermoplastic resin selected from a group consisting of a polycarbonate, a polyester, and a polyester carbonate according to claim 6 or 7, wherein in said formula (1), X^- is at least one kind selected from a chloride ion, a bromide ion, a tetraphenylborate ion, a phenolate ion, a BPA monoanion represented by formula (3a) below, and a BPA monoanion BPA adduct represented by formula (3b) below.

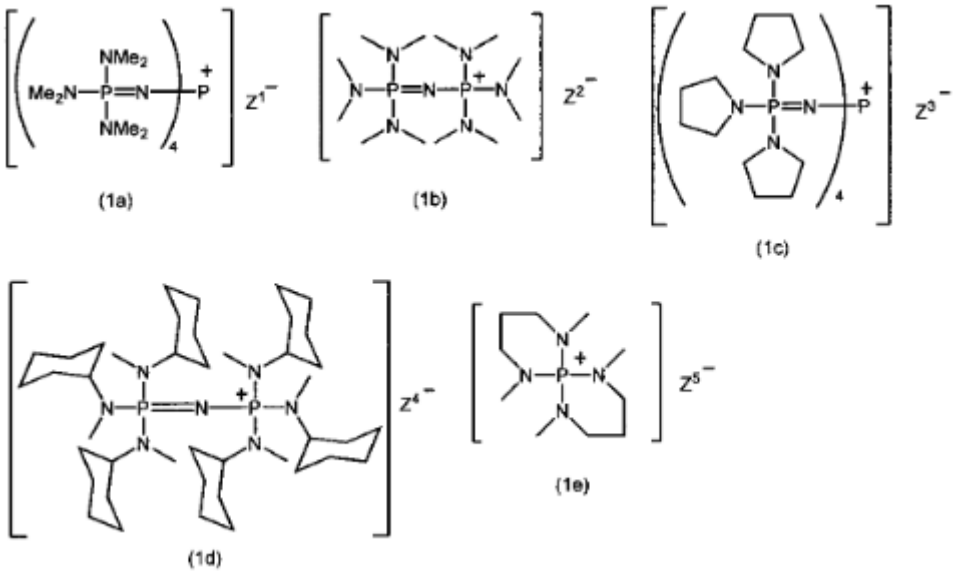
[Figure 4]



9. The method for producing at least one thermoplastic resin selected from a group consisting of a polycarbonate, a polyester, and a polyester carbonate according to claim 8, wherein in said (1), X^- is at least one kind selected from a phenolate ion, a BPA monoanion represented by said formula (3a), and a BPA monoanion BPA adduct represented by said formula (3b).

10. The method for producing at least one thermoplastic resin selected from a group consisting of a polycarbonate, a polyester, and a polyester carbonate according to any one of claims 6 to 9, wherein said formula (1) is represented by any of following formulas (1a)～(1e).

Figure 5



(In formulas (1a)～(1e), Z^{1-}～Z^{5-} each independently represent a monovalent anion; Me represents a methyl group.)

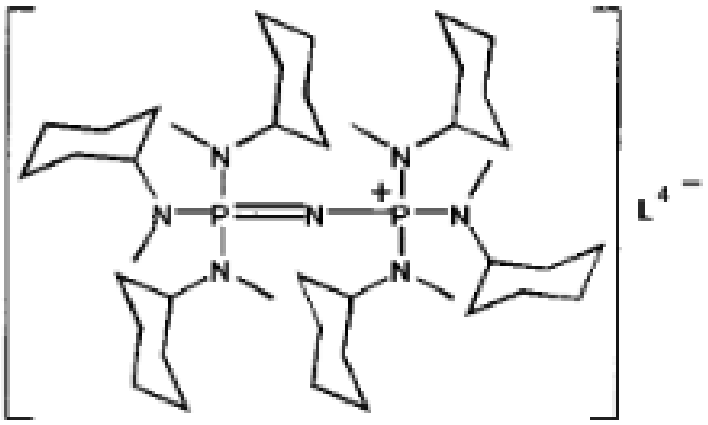
11. The method for producing at least one thermoplastic resin selected from a group consisting of a polycarbonate, a polyester, and a polyester carbonate according to any one of claims 1 to 10, wherein said melt polycondensation is performed in the presence of 0.01～1000 μmol of said transesterification catalyst per 1 mol of said dihydroxy compound.

12. The method for producing at least one thermoplastic resin selected from a group consisting of a polycarbonate, a polyester, and a polyester carbonate according to any one of claims 1 to 11, wherein a temperature during said melt polycondensation reaction is 200～350°C.

13. The method for producing at least one thermoplastic resin selected from a group consisting of a polycarbonate, polyester and polyester carbonate according to any one of claims 1 to 12, wherein the viscosity average molecular weight [Mv] of said at least one thermoplastic resin selected from a group consisting of a polycarbonate, a polyester, and a polyester carbonate produced is from 5,000～40,000.

14. A compound represented by formula (1d').

[Figure 9]

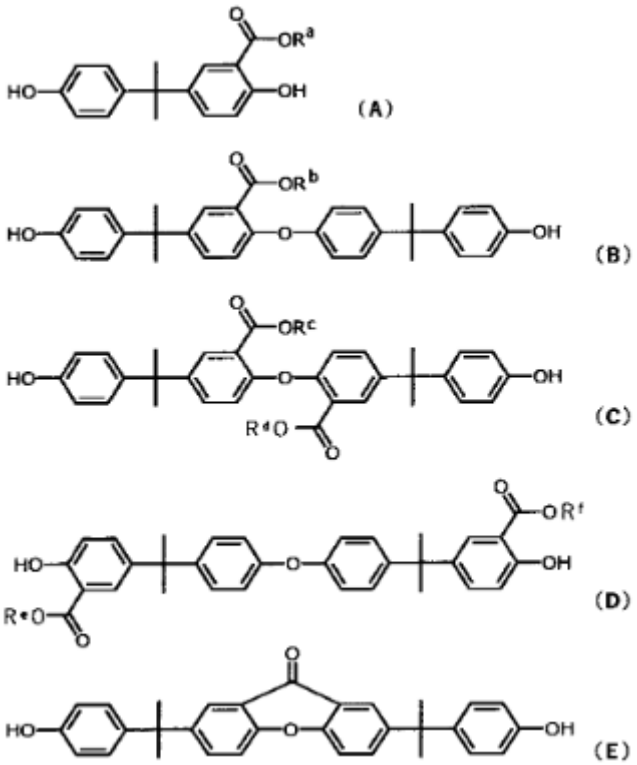


(1d')

(In said formula (1d'), L^{4-} represents a monovalent anion.)

15. The polycarbonate produced by the method for producing a thermoplastic resin according to any of claims 1 to 13, wherein the viscosity average molecular weight of said polycarbonate is 14,000 or more and 30,000 or less, and a total amount of compounds represented by following formulas (A)～(E) measured in a hydrolysate of the polycarbonate is 300 wt. ppm or more and 550 wt. ppm or less with respect to the polycarbonate resin.

[Figure 12]



(In formulas (A)～(D), R^a～R^f each independently represent a hydrogen atom or a methyl group. In benzene rings in formulas (A)～(E), one or more hydrogen atoms bonded to benzene rings may be substituted by a substituent.)

16. The polycarbonate of claim 15, wherein a terminal hydroxyl group concentration of said polycarbonate is 400 wt. ppm or more and 1000 wt. ppm or less.