CLAIMS

1. A process for preparing oligocarbonate and/or polycarbonate comprising:

a) transesterifying a bisphenol with a diaryl carbonate to obtain an oligocarbonate and/or polycarbonate and a monophenol;

b) isolating or separating said oligocarbonate and/or polycarbonate from said monophenol;

c) reacting said monophenol in the presence of an alkali solution with a carbonyl dihalide and separating the resulting products, wherein said products comprise an alkali metal halide and a diaryl carbonate, wherein said diaryl carbonate is reused in step a);

d) electrochemically oxidating said alkali metal halide obtained in step c) to obtain a halogen and an alkali hydroxide solution;

e) reacting at least a portion of said halogen from step d) with carbon monoxide to obtain a carbonyl dihalide, wherein at least a portion of said carbonyl dihalide is used in step c);

f) reusing at least a portion of said alkali hydroxide solution obtained from step d) in step c).

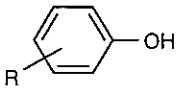
2. The process of claim 1, wherein said bisphenol used in step a) is a dihydroxydiarylalkane of formula (I)

HO-Z-OH (I)

wherein Z is a divalent organic radical comprising from 6 to 30 carbon atoms, wherein said divalent organic radical comprises an aromatic group.

3. The process of claim 1, wherein said diaryl carbonate used in step a) is a di-C_6-C_{14}-aryl ester.

4. The process of claim 1, wherein said monophenol used in step c) is a phenol of formula (II)



(II)

wherein

R is hydrogen, halogen, or a branched or straight-chain C_1- to C_9-alkyl radical or alkoxycarbonyl radical.

5. The process of claim 1, wherein said diaryl carbonate is diphenyl carbonate, said bisphenol is bisphenol A, said carbonyl dihalide is phosgene, and said alkali solution is sodium hydroxide solution.

6. The process of claim 5, wherein said alkali metal halide in step c) is sodium chloride and the electrolysis of said sodium chloride in step d) produces sodium hydroxide solution and chlorine and is effected using a gas diffusion electrode as a cathode.

7. The process of claim 1, wherein said products in step c) comprises an alkali halide-containing waste water which is separated prior to step d) from solvent residues and optionally catalyst residues.

8. The process of claim 7, wherein said separation is achieved via extraction or stripping of the solution with steam, neutralization, and/or treatment with an adsorbent.

9. The process of claim 8, wherein said neutralization is achieved using hydrogen chloride or hydrochloric acid and said adsorbent is active carbon

10. The process of claim 7, wherein said alkali halide-containing waste water is concentrated prior to step d).

11. The process of claim 10, wherein said alkali halide-containing waste water is concentrated prior to step d) via osmotic distillation with sodium hydroxide solution as a water acceptor.

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   b) isolating or separating said oligocarbonate and/or polycarbonate from said monophenol;

   c) reacting said monophenol in the presence of an alkali solution with a carbonyl dihalide and separating the resulting products, wherein said products comprise an alkali metal halide and a diaryl carbonate, wherein said diaryl carbonate is reused in step a);

   d) electrochemically oxidating said alkali metal halide obtained in step c) to obtain a halogen and an alkali hydroxide solution;

   e) reacting at least a portion of said halogen from step d) with carbon monoxide to obtain a carbonyl dihalide, wherein at least a portion of said carbonyl dihalide is used in step c);

   f) reusing at least a portion of said alkali hydroxide solution obtained from step d) in step c).

2. The process of claim 1, wherein said bisphenol used in step a) is a dihydroxydiarylalkane of formula (I)

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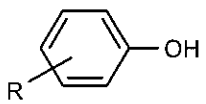

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5. The process of claim 1, wherein said diaryl carbonate is diphenyl carbonate, said bisphenol is bisphenol A, said carbonyl dihalide is phosgene, and said alkali solution is sodium hydroxide solution.

6. The process of claim 5, wherein said alkali metal halide in step c) is sodium chloride and the electrolysis of said sodium chloride in step d) produces sodium hydroxide solution and chlorine and is effected using a gas diffusion electrode as a cathode.

7. The process of claim 1, wherein said products in step c) comprises an alkali halide-containing waste water which is separated prior to step d) from solvent residues and optionally catalyst residues.

8. The process of claim 7, wherein said separation is achieved via extraction or stripping of the solution with steam, neutralization, and/or treatment with an adsorbent.

9. The process of claim 8, wherein said neutralization is achieved using hydrogen chloride or hydrochloric acid and said adsorbent is active carbon

10. The process of claim 7, wherein said alkali halide-containing waste water is concentrated prior to step d).

11. The process of claim 10, wherein said alkali halide-containing waste water is concentrated prior to step d) via osmotic distillation with sodium hydroxide solution as a water acceptor.