

4-yl phenyl carbonate, di(biphenyl-4-yl)carbonate, 4-(1-naphthyl)phenyl phenyl carbonate, 4-(2-naphthyl)phenyl phenyl carbonate, di[4-(1-naphthyl)phenyl]carbonate, di-[4-(2-naphthyl)phenyl]carbonate, 4-phenoxyphenyl phenyl carbonate, di(4-phenoxyphenyl)carbonate, 3-pentadecylphenyl phenyl carbonate, di(3-pentadecylphenyl)carbonate, 4-tritylphenyl phenyl carbonate, di(4-tritylphenyl)carbonate, methyl salicyl phenyl carbonate, di(methylsalicyl)carbonate, ethylsalicyl phenyl carbonate, di(ethylsalicyl)carbonate, n-propylsalicyl phenyl carbonate, di(n-propylsalicyl)carbonate, isopropylsalicyl phenyl carbonate, di(isopropylsalicyl)carbonate, n-butylsalicyl phenyl carbonate, di(n-butylsalicyl)carbonate, isobutylsalicyl phenyl carbonate, di(isobutylsalicyl)carbonate, tert-butylsalicyl phenyl carbonate, di(tert-butylsalicyl)carbonate, di(phenylsaticyl)carbonate and di(benzylsalicyl)carbonate.

[0075] Particularly preferred diaryl compounds are diphenyl carbonate, 4-tert-butylphenyl phenyl carbonate, di(4-tert-butylphenyl)carbonate, biphenyl-4-yl phenyl carbonate, di(biphenyl-4-yl)carbonate, 4-(1-methyl-1-phenylethyl)phenyl phenyl carbonate, di[4-(1-methyl-1-phenylethyl)phenyl]carbonate and di(methylsalicyl)carbonate.

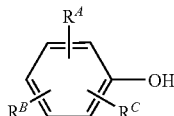
[0076] Diphenyl carbonate is very particularly preferred.

[0077] It is possible to use both one diaryl carbonate and different diaryl carbonates.

[0078] The diaryl carbonates may also be used with residual contents of the monohydroxyaryl compounds from which they were prepared. The residual contents of the monohydroxyaryl compounds may be up to 20% by weight, preferably up to 10% by weight, particularly preferably up to 5% by weight and very particularly preferably up to 2% by weight.

[0079] Based on the dihydroxyaryl compound(s), in general 1.02 to 1.30 mol of the diaryl carbonate(s), preferably 1.04 to 1.25 mol, particularly preferably 1.045 to 1.22 mol, very particularly preferably 1.05 to 1.20 mol, per mole of dihydroxyaryl compound are used. It is also possible to use mixtures of the abovementioned diaryl carbonates, the molar amounts per mole of dihydroxyaryl compound which are mentioned above then being based on the total amount of the mixture of the diaryl carbonates.

[0080] For controlling or changing the terminal groups, one or more monohydroxyaryl compound(s) which were not used for the preparation of the diaryl carbonate(s) used can additionally be employed. These may be those monohydroxyaryl compounds of the general formula (III)



(III)

in which

[0081] R^A represents linear or branched C_1 - C_{34} -alkyl, C_7 - C_{34} -alkylaryl, C_6 - C_{34} -aryl or $-\text{COO}-R^D$, R^D representing hydrogen, linear or branched C_1 - C_{34} -alkyl, C_7 - C_{34} -alkylaryl or C_6 - C_{34} -aryl, and

[0082] R^B , R^C independently of one another, are identical or different and represent hydrogen, linear or branched C_1 - C_{34} -alkyl, C_7 - C_{34} -alkylaryl or C_6 - C_{34} -aryl.

[0083] Such monohydroxyaryl compounds are, for example, 1-, 2- or 3-methylphenol, 2,4-dimethylphenol 4-ethylphenol, 4-n-propylphenol, 4-isopropylphenol, 4-n-butylphenol, 4-isobutylphenol, 4-tert-butylphenol, 4-n-pentylphenol, 4-n-hexylphenol, 4-isooctylphenol, 4-n-nonylphenol, 3-pentadecylphenol, 4-cyclohexylphenol, 4-(1-methyl-1-phenylethyl)phenol, 4-phenylphenol, 4-phenoxyphenol, 4-(1-naphthyl)phenol, 4-(2-naphthyl)phenol, 4-tritylphenol, methyl salicylate, ethyl salicylate, n-propyl salicylate, isopropyl salicylate, n-butyl salicylate, isobutyl salicylate, tert-butyl salicylate, phenyl salicylate and benzyl salicylate.

[0084] 4-tert-Butylphenol, 4-isooctylphenol and 3-pentadecylphenol are preferred.

[0085] The monohydroxyaryl compound(s) should be chosen so that the melting point thereof is above that of the monohydroxyaryl compound which was used for the preparation of the diaryl carbonate used. The monohydroxyaryl compound may be added at any time in the course of the reaction. It is preferably added at the beginning of the reaction. The proportion of free monohydroxyaryl compound may be 0.2 to 20 mol %, preferably 0.4 to 10 mol %, based on the dihydroxyaryl compound.

[0086] It is also possible to change the terminal groups of the resulting polycarbonates by addition of at least one additional diaryl carbonate, the base monohydroxyaryl compound of which has a higher boiling point than the base monohydroxyaryl compound of the diaryl carbonate mainly used. Here too, the additional diaryl carbonate may be added at any time in the course of the reaction. It is preferably added at the beginning of the reaction. The proportion of the diaryl carbonate having the higher-boiling base monohydroxyaryl compound, based on the total amount of diaryl carbonate used, may be 1 to 40 mol %, preferably 1 to 20 mol % and particularly preferably 1 to 10 mol %.

[0087] Catalysts which may be used in the melt transesterification method for the preparation of polycarbonates are the basic catalysts known in the literature, such as, for example, alkali metal and alkaline earth metal hydroxides and oxides and/or onium salts, such as, for example, ammonium or phosphonium salts. Preferably onium salts, particularly preferably phosphonium salts, are used in the synthesis. Such phosphonium salts are, for example those of the general formula (IV)



in which

[0088] R^{7-10} represent identical or different optionally substituted C_1 - C_{10} -alkyl-, C_6 - C_{14} -aryl-, C_7 - C_{15} -arylalkyl or C_5 - C_6 -cycloalkyl radicals, preferably methyl or C_6 - C_{14} -aryl, particularly preferably methyl or phenyl, and

[0089] X^- represents an anion selected from the group consisting of hydroxide, sulphate, hydrogen sulphate, bicarbonate, carbonate, halide, preferably chloride, and alkylate or arylate of the formula $-\text{OR}^{11}$, in which R^{11} represents an optionally substituted C_6 - C_{14} -aryl-, C_7 - C_{15} -arylalkyl or C_5 - C_6 -cycloalkylrest, C_1 - C_{20} -alkyl, preferably phenyl.