CLAIMS

1. A dental device comprising:

a multi-layer plastic film containing a layer A located between two layers B, wherein:

the layer A contains a polycarbonate or copolycarbonate and/or a polyester or copolyester having a glass transition temperature Tg from 80 °C to 200°C,

and each layer B contains at least one thermoplastic polyurethane and/or polyester or copolyester exhibiting a hardness from 45 Shore D to 85 Shore D.

2. The dental device according to claim 1, wherein the layer A contains at least one polyester or copolyester having an inherent viscosity from 0.50 dL/g to 1.20 dL/g and a glass transition temperature Tg from 80 °C to 200°C.

3. The dental device according to claim 1, wherein each layer B contains at least one thermoplastic polyurethane exhibiting a hardness from 45 Shore D to 85 Shore D.

4. The dental device according to claim 1, wherein

the layer A contains a copolyester that exhibits residues from

(a) a dicarboxylic acid component comprising

i) 70 mole % to 100 mole % terephthalic acid residues,

ii) 0 mole % to 30 mole % aromatic dicarboxylic acid residues with up to 20 carbon atoms, and

iii) 0 mole% to 10 mole% aliphatic dicarboxylic acid residues with up to 16 carbon atoms, and

(b) a diol component comprising

i) 5 mole % to 50 mole % 2,2,4,4-tetramethyl-1,3-cyclobutanediol residues, and

ii) 50 mole% to 95 mole% 1,4-cyclohexanedimethanol residues,

wherein the sum of the mole % of residues i) - iii) of the dicarboxylic acid component amounts to I00 mole % and the sum of the mole % of residues i) and ii) of the diol component amounts to 100 mole%,

and wherein the inherent viscosity of the copolyester amounts to 0.50 dL/g to 1.20 dL/g and the copolyester exhibits a glass transition temperature Tg from 80 °C to 150 °C,

and the layer A is located next to at least one layer B containing at least one thermoplastic polyurethane, the thermoplastic polyurethane exhibiting a hardness from 45 Shore D to 85 Shore D and being obtainable from

a) one or more linear polyether diols with mean molecular weights from 500 g/mol to 10,000 g/mol, preferably 500 g/mol to 6000 g/mol, and, on average, in each instance at least 1.8 and at most 3.0, preferably 1.8 to 2.2, Tserevitinov-active hydrogen atoms

b) one or more organic diisocyanates,

c) one or more diol chain-extenders with molecular weights from 60 g/mol to 500 g/mol and with, on average, 1.8 to 3.0 Tserevitinov-active hydrogen atoms

in the presence of

d) optionally, one or more catalysts with addition of

e) optionally, auxiliary substances and additives,

wherein the molar ratio of the NCO groups in b) to the groups in a) and c) that are reactive towards isocyanate amounts to 0.85:1 to 1.2:1, preferably 0.9:1 to 1.1:1.

5. The dental device according to claim 1, wherein the thermoplastic polyurethane exhibits a hardness from 50 Shore D to 80 Shore D.

6. The dental device according to claim 4, wherein the polyether diols a) used for producing the thermoplastic polyurethane are selected from one or more polyether diols of the group based on 1,4-butanediol units and/or 1,3-propylene glycol units.

7. The dental device according to claim 4, wherein the organic diisocyanate b) used for producing the thermoplastic polyurethane is selected from one or more isocyanates of the group containing 4,4'-diphenylmethane diisocyanate, isophorone diisocyanate, dicyclohexylmethane-4,4'-diisocyanate or 1,6-hexamethylene diisocyanate.

8. The dental device according to claim 4, wherein the diol chain-extender c) used for producing of the thermoplastic polyurethane is selected from one or more chain-extenders of the group containing 1,4-butanediol, 1,3-propanediol, 1,2-propanediol, 1,2-ethylene glycol, 1,6-hexanediol, 1,4-di(β-hydroxyethyl)hydroquinone or 1,4-di(β-hydroxyethyl)bisphenol A.

9. The dental device according to claim 4, wherein the thermoplastic polyurethane was produced in the prepolymer process.

10. The dental device according to claim 4, wherein the diol component of the copolyester comprises 10 mole% to 35 mole% 2,2,4,4-tetramethyl-1,3-cyclobutanediol residues and 65 mole % to 90 mole % 1,4-cyclohexanedimethanol residues, the sum of the mole % of these two components of the diol component amounting to 100 mole%.

11. The dental device according to claim 4, wherein the residues from the dicarboxylic acid component of the polyester include 95 mole % to 100 mole % terephthalic acid residues.

12. The dental device according to claim 1, wherein the film has been co-extruded.

13. The dental device according to a claim 1, wherein the multi-layer plastic film has a total thickness from 300 µm to 2000 µm.

14. The dental device according to claim 1, wherein the layer A has a layer thickness from 250 µm to 1600 µm.

15. The dental device according to claim 1, wherein each layer B has a layer thickness from 25 µm to 500 µm.

16. The dental device according to claim 2, wherein the polyester or copolyester exhibits an inherent viscosity from 0.50 dL/g to 0.80 dL/g.

17. The dental device according to claim 1, wherein the polyester or copolyester exhibits a glass transition temperature Tg from 85 °C to 130 °C.