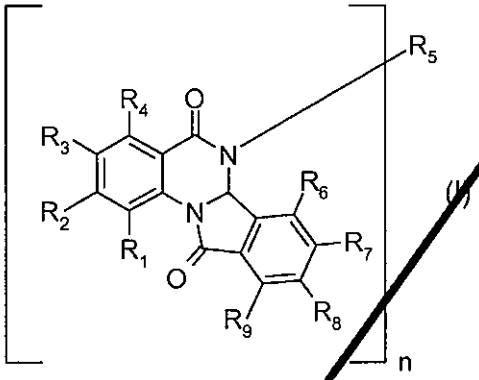
Claims

1. A composition, which comprises

a) an organic material susceptible to oxidative, thermal or light-induced degradation, which is a polymer, an oligohydroxy compound, a wax, a fat or a mineral oil, with the proviso that the polymer is not a polypeptide, agar-agar or a component of agar-agar and the oligohydroxy compound is not glucose or a component of agar-agar; and

b) a compound of formula I



(I)

wherein

when n is 1,

$R_5$ is H, $C_1$-$C_{30}$-alkyl, $C_3$-$C_{10}$-cycloalkyl, $C_6$-$C_{14}$-aryl, which is unsubstituted or substituted by $C_1$-$C_8$-alkyl, $C_1$-$C_8$-alkoxy, halogen or one phenyl, $C_7$-$C_{13}$-aralkyl, $C_2$-$C_{22}$-alkenyl, $C_3$-$C_{12}$-alkinyl, OH, $C_1$-$C_{30}$-alkyloxy, $C_3$-$C_{10}$-cycloalkyloxy, $C_6$-$C_{12}$-aryloxy, $C_7$-$C_{13}$-aralkyloxy, hydroxy-$C_1$-$C_8$-alkyl, carboxy-$C_1$-$C_{12}$-alkyl, $C_1$-$C_{12}$-alkoxycarbonyl-$C_1$-$C_{12}$-alkyl, $C_2$-$C_{30}$-alkyl, which is interrupted by one or more oxygen atoms, $C_2$-$C_{16}$-alkyl, which is interrupted by one sulfur atom, or $NR'_1R'_2$;

when n is 2,

$R_5$ is $C_1$-$C_{12}$-alkane-diyl, $C_6$-$C_{14}$-arylene, $C_4$-$C_8$-cycloalkane-bis-($C_1$-$C_4$-alkylene), $C_6$-$C_{14}$-arene-bis-($C_1$-$C_4$-alkylene), $C_4$-$C_{24}$-alkane-diyl, which is interrupted by one or more oxygen atoms, $C_4$-$C_{20}$-alkane-diyl, which is interrupted by one or more -NH-, -N($C_1$-$C_8$-alkyl)- or -N(hydroxy-$C_1$-$C_8$-alkyl)-, piperazine-N,N'-bis-($C_1$-$C_4$-alkylene) or $C_2$-$C_{10}$-alkane-diyl, which is interrupted by one sulfur atom;

when n is 3,

$R_5$ is $C_5$-$C_{12}$-alkane-triyl, $C_5$-$C_{24}$-alkane-triyl, which is interrupted by one or more oxygen atoms, $C_5$-$C_{24}$-alkane-triyl, which is interrupted by one or more -NH-, -N($C_1$-$C_8$-alkyl)- or -N(hydroxy-$C_1$-$C_8$-alkyl)-;

when n is 4,

$R_5$ is $C_5$-$C_{24}$-alkane-tetrayl, $C_6$-$C_{24}$-alkane-tetrayl, which is interrupted by one or more oxygen atoms, or $C_6$-$C_{24}$-alkane-tetrayl, which is interrupted by one or more -NH-, -N($C_1$-$C_8$-alkyl)- or -N(hydroxy-$C_1$-$C_8$-alkyl)-;

n is 1, 2, 3 or 4;

$R_1$ to $R_4$ and $R_6$ to $R_9$ are each independently from each other H, $C_1$-$C_{12}$-alkyl, $C_3$-$C_{10}$-cycloalkyl, $C_3$-$C_{22}$-alkenyl, $C_1$-$C_{12}$-alkoxy, $C_1$-$C_{12}$-alkylsulfanyl, hydroxy-$C_1$-$C_8$-alkyl, halogen, $NR''_1R''_2$, $NO_2$, CN, phenyl, phenyloxy or $R_1$ and $R_2$ or $R_2$ and $R_3$ or $R_3$ and $R_4$ or $R_6$ and $R_7$ or $R_7$ and $R_8$ or $R_8$ and $R_9$ are linked together to form a five- or 6-membered alicylic, aromatic or heterocyclic ring together with their 2 corresponding carbons atoms, to which they are attached; and

$R'_1$, $R'_2$, $R''_1$ and $R''_2$ are each independently from each other H, $C_1$-$C_{12}$-alkyl, $C_3$-$C_{10}$-cycloalkyl, hydroxy-$C_1$-$C_8$-alkyl, $C_3$-$C_{22}$-alkenyl, $C_6$-$C_{10}$-aryl, which is unsubstituted or substituted by $C_1$-$C_8$-alkyl, $C_1$-$C_8$-alkoxy, halogen or one phenyl, $C_7$-$C_{12}$-aralkyl, carboxy-$C_1$-$C_{12}$-alkyl, $C_1$-$C_{12}$-alkoxycarbonyl-$C_1$-$C_{12}$-alkyl, or carboxy-$C_6$-$C_{10}$-aryl, or $R'_1$ and $R'_2$ or $R''_1$ and $R''_2$ form together with the nitrogen atom, to which they are attached, a 5- or 6-membered alicyclic, aromatic or heterocyclic ring.

2. A composition according to claim 1, wherein the organic material is a polyolefin or a copolymer thereof, a polystyrene or a copolymer thereof, a polyurethane or a copolymer thereof, a polyether, which is obtainable by the polycondensation of an expoxide, an oxetane or tetrahydrofuran, or a copolymer thereof, a polyol, a polyester or a copolymer thereof, a polycarbonate or a copolymer thereof, a polyvinyl chloride or a copolymer thereof, a polyvinylidene chloride or a copolymer thereof, a polysulfone or a copolymer thereof, a polybutadiene or a copolymer thereof, a polyvinylacetate or a copolymer thereof, a polyvinylalcohol or a copolymer thereof, polyvinylacetale or a copolymer thereof, a polyamide, which is obtainable by polycondensation of a diamine and a dicarboxylic acid, or a copolymer thereof, a polyamide, which is obtainable by polycondensation of $H_2N$-$(CH_2)_x$-$CH_2$-COOH with x = 1 to 10, or a copolymer thereof, an oligohydroxy compound, a wax, a fat or a mineral oil.

3. A composition according to claim 1 or 2, wherein at formula I

when n is 1,

$R_5$ is H, $C_1$-$C_{30}$-alkyl, $C_3$-$C_{10}$-cycloalkyl, $C_6$-$C_{10}$-aryl, which is unsubstituted or substituted by $C_1$-$C_8$-alkyl, $C_1$-$C_8$-alkoxy, halogen or one phenyl, $C_7$-$C_{13}$-aralkyl, $C_2$-$C_{22}$-alkenyl, $C_3$-$C_{12}$-alkinyl, OH, $C_1$-$C_{30}$-alkyloxy, $C_3$-$C_{10}$-cycloalkyloxy, $C_6$-$C_{12}$-aryloxy, $C_7$-$C_{13}$-aralkyloxy, hydroxy-$C_1$-$C_8$-alkyl, carboxy-$C_1$-$C_{12}$-alkyl, $C_1$-$C_{12}$-alkoxycarbonyl-$C_1$-$C_{12}$-alkyl, $C_2$-$C_{30}$-alkyl, which is interrupted by one or more oxygen atoms, $C_2$-$C_{16}$-alkyl, which is interrupted by one sulfur atom, or $NR'_1R'_2$;

when n is 2,

$R_5$ is $C_1$-$C_{12}$-alkane-diyl, $C_6$-$C_{14}$-arylene, $C_4$-$C_8$-cycloalkane-bis-($C_1$-$C_4$-alkylene), $C_6$-$C_{14}$-arene-bis-($C_1$-$C_4$-alkylene), $C_4$-$C_{24}$-alkane-diyl, which is interrupted by one or more oxygen atoms, $C_4$-$C_{20}$-alkane-diyl, which is interrupted by one or more -NH-, -N($C_1$-$C_8$-alkyl)- or -N(hydroxy-$C_1$-$C_8$-alkyl)-, piperazine-N.N'-bis-($C_1$-$C_4$-alkylene) or $C_2$-$C_{10}$-alkane-diyl, which is interrupted by one sulfur atom;

n is 1 or 2;

$R_1$ to $R_4$ and $R_6$ to $R_9$ are each independently from each other H, $C_1$-$C_{12}$-alkyl, $C_3$-$C_{10}$-cycloalkyl, $C_3$-$C_{22}$-alkenyl, $C_1$-$C_{12}$-alkoxy, $C_1$-$C_{12}$-alkylsulfanyl, hydroxy-$C_1$-$C_8$-alkyl, halogen, $NR''_1R''_2$, $NO_2$, CN, phenyl, phenyloxy or $R_1$ and $R_2$ or $R_2$ and $R_3$ or $R_3$ and $R_4$ or $R_6$ and $R_7$ or $R_7$ and $R_8$ or $R_8$ and $R_9$ are linked together to form a five- or 6-membered alicylic, aromatic or heterocyclic ring together with their 2 corresponding carbons atoms; and

$R'_1$, $R'_2$, $R''_1$ and $R''_2$ are each independently from each other H, $C_1$-$C_{12}$-alkyl, $C_3$-$C_{10}$-cycloalkyl, hydroxy-$C_1$-$C_8$-alkyl, $C_3$-$C_{22}$-alkenyl, $C_6$-$C_{10}$-aryl, which is unsubstituted or substituted by $C_1$-$C_8$-alkyl, $C_1$-$C_8$-alkoxy, halogen or one phenyl, $C_7$-$C_{12}$-aralkyl, carboxy-$C_1$-$C_{12}$-alkyl, $C_1$-$C_{12}$-alkoxycarbonyl-$C_1$-$C_{12}$-alkyl, or carboxy-$C_6$-$C_{10}$-aryl, or $R'_1$ and $R'_2$ or $R''_1$ and $R''_2$ form together with the nitrogen atom, to which they are attached, a 5- or 6-membered alicyclic, aromatic or heterocyclic ring.

4. A composition according to anyone of claims 1 to 3, wherein at formula I

when n is 1,

$R_5$ is H, $C_1$-$C_{30}$-alkyl, $C_3$-$C_{10}$-cycloalkyl, $C_6$-$C_{10}$-aryl, which is unsubstituted or substituted by $C_1$-$C_8$-alkyl, $C_1$-$C_8$-alkoxy, halogen or one phenyl, $C_7$-$C_{13}$-aralkyl, $C_2$-$C_{22}$-alkenyl, $C_3$-$C_{12}$-alkinyl, OH, $C_1$-$C_{30}$-alkyloxy, $C_3$-$C_{10}$-cycloalkyloxy, $C_6$-$C_{12}$-aryloxy, $C_7$-$C_{13}$-aralkyloxy, hydroxy-$C_1$-$C_8$-alkyl, carboxy-$C_1$-$C_{12}$-alkyl, $C_1$-$C_{12}$-alkoxycarbonyl-$C_1$-$C_{12}$-alkyl, $C_2$-$C_{30}$-alkyl, which is interrupted by one or more oxygen atoms, $C_2$-$C_{16}$-alkyl, which is interrupted by one sulfur atom, or $NR'_1R'_2$;

when n is 2,

$R_5$ is $C_1$-$C_{12}$-alkane-diyl, $C_4$-$C_{24}$-alkane-diyl, which is interrupted by one or more oxygen atoms, $C_4$-$C_{20}$-alkane-diyl, which is interrupted by one or more -NH-, -N($C_1$-$C_8$-alkyl)- or -N(hydroxy-$C_1$-$C_8$-alkyl)-, piperazine-N,N'-bis-($C_1$-$C_4$-alkylene) or $C_2$-$C_{10}$-alkane-diyl, which is interrupted by one sulfur atom;

n is 1 or 2;

2 substituents out of $R_1$ to $R_4$ and 2 substituents out of $R_6$ to $R_9$ are H and the other remaining 4 substituents out of $R_1$ to $R_4$ and $R_6$ to $R_9$ are each independently from each other H, $C_1$-$C_{12}$-alkyl, $C_3$-$C_{10}$-cycloalkyl, $C_3$-$C_{22}$-alkenyl, $C_1$-$C_{12}$-alkoxy, $C_1$-$C_{12}$-alkylsulfanyl, hydroxy-$C_1$-$C_8$-alkyl, halogen, $NR''_1R''_2$, $NO_2$, CN, phenyl, phenyloxy; and $R'_1$, $R'_2$, $R''_1$ and $R''_2$ are each independently from each other H, $C_1$-$C_{12}$-alkyl, $C_3$-$C_{10}$-cycloalkyl, hydroxy-$C_1$-$C_8$-alkyl, $C_3$-$C_{22}$-alkenyl, $C_6$-$C_{10}$-aryl, which is unsubstituted or substituted by $C_1$-$C_8$-alkyl, $C_1$-$C_8$-alkoxy, halogen or one phenyl, $C_7$-$C_{12}$-aralkyl, carboxy-$C_1$-$C_{12}$-alkyl, $C_1$-$C_{12}$-alkoxycarbonyl-$C_1$-$C_{12}$-alkyl, or carboxy-$C_6$-$C_{10}$-aryl, or $R'_1$ and $R'_2$ or $R''_1$ and $R''_2$ form together with the nitrogen atom, to which they are attached, a pyrrolidine, a piperidine or a morpholine ring.

5. A compostion according to anyone of claims 1 to 4, wherein at formula I

n is 1,

$R_5$ is H, $C_1$-$C_{30}$-alkyl, $C_3$-$C_{10}$-cycloalkyl, $C_6$-$C_{10}$-aryl, which is unsubstituted or substituted by $C_1$-$C_8$-alkyl or $C_1$-$C_8$-alkoxy, $C_7$-$C_{13}$-aralkyl, $C_2$-$C_{22}$-alkenyl, OH, $C_1$-$C_{30}$-alkyloxy,

$C_3$-$C_{10}$-cycloalkyloxy, $C_6$-$C_{12}$-aryloxy, $C_7$-$C_{13}$-aralkyloxy, hydroxy-$C_1$-$C_8$-alkyl, carboxy-$C_1$-$C_{12}$-alkyl, $C_1$-$C_{12}$-alkoxycarbonyl-$C_1$-$C_{12}$-alkyl, $C_2$-$C_{30}$-alkyl, which is interrupted by one or more oxygen atoms, or $NR'_1R'_2$;

3 substituents out of $R_1$ to $R_4$ and 2 substituents out of $R_6$ to $R_9$ are H and the other remaining 3 substituents out of $R_1$ to $R_4$ and $R_6$ to $R_9$ are each independently from each other H, $C_1$-$C_{12}$-alkyl, $C_1$-$C_{12}$-alkoxy or halogen; and

$R'_1$ and $R'_2$ are each independently from each other H, $C_1$-$C_{12}$-alkyl, $C_3$-$C_{10}$-cycloalkyl, $C_3$-$C_{22}$-alkenyl, $C_6$-$C_{10}$-aryl, which is unsubstituted or substituted by $C_1$-$C_8$-alkyl or $C_1$-$C_8$-alkoxy, $C_7$-$C_{12}$-aralkyl, or $R'_1$ and $R'_2$ form together with the nitrogen atom, to which they are attached, a pyrrolidine, a piperidine or a morpholine ring.

6. A composition according to anyone of claims 1 to 5, wherein the organic material is a polymer, which is a polyolefin or a copolymer thereof, a polystyrene or a copolymer thereof, or a polyurethane or a copolymer thereof.

7. A composition according to anyone of claims 1 to 6, wherein component b) is contained in an amount of 0.0005% to 10% based on the weight of component a).

8. A composition according to anyone of claims 1 to 7, which comprises as component c) a further additive.

9. A composition according to claim 8, which comprises as component c) a further additive, which is a phosphite or phosphonite, an acid scavenger, a phenolic antioxidant or an aminic antioxidant.

10. A composition according to claims 8 or 9, which comprises

a) an organic material susceptible to oxidative, thermal or light-induced degradation as defined in claim 1,

b) a compound of formula I as defined in claim 1, and

c) a further additive, which is a phenolic antioxidant or a phosphite or phosphonite.

11. A composition according to anyone of claims 8 to 10, wherein component c) is tetrakis-[β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionyloxymethyl]methane or stearyl β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate.

12. A composition according to anyone of claims 8 to 10, wherein component c) is tris-(2,4-di-tert-butyl) phosphite.

13. A composition according to anyone of claims 8 to 12, wherein the weight ratio of component b) to component c) is from 4 : 1 to 1 : 20 and the combined amount of component b) and component c) is below 80% based on the weight of component a).

14. A composition according to anyone of claims 8 to 13, which comprises as component d) a second further additive, which is a phosphite or phosphonite, an acid scavenger, a phenolic antioxidant or an aminic antioxidant; with the proviso that component d) is a different substance than component c).

15. A composition according to anyone of claims 8 to 10, 13 or 14, which comprises
a) an organic material susceptible to oxidative, thermal or light-induced degradation as defined in claim 1,
b) a compound of formula I as defined in claim 1,
c) a further additive, which is a phenolic antioxidant, and
d) a second further additive, which is a phosphite or phosphonite.

16. A composition according to claim 15, wherein component c) is tetrakis-[β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionyloxymethyl]methane or stearyl β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate.

17. A composition according to claims 15 or 16, wherein component d) is tris-(2,4-di-tert-butyl) phosphite.

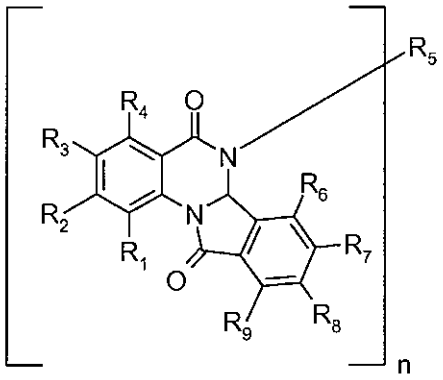
18. A composition according to anyone of claims 15 to 17, wherein component c) is tetrakis-[β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionyloxymethyl]methane or stearyl β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate, and component d) is tris-(2,4-di-tert-butyl) phosphite.

19. A process for protection of an organic material susceptible to oxidative, thermal or light-induced degradation as defined in claim 1, which comprises the step of incorporation into or application onto an organic material as defined in claim 1 a compound of formula I as defined in claim 1.

20. A process according to claim 19, wherein the organic material is a polymer, and which comprises the step of incorporation of a compound of formula I into the organic material and wherein a part or the complete incorporation takes place at a temperature between 135°C to 350°C.

21. A use of a compound of formula I as defined in claim 1 for stabilizing an organic material susceptible to oxidative, thermal or light-induced degradation as defined in claim 1 against degradation by oxidation, heat or light.

22. A compound of formula I



(I)

wherein

n is 1,

$R_5$ is $C_1$-$C_{30}$-alkyloxy, $C_3$-$C_{10}$-cycloalkyloxy, $C_6$-$C_{12}$-aryloxy, $C_7$-$C_{13}$-aralkyloxy or $NR'_1R'_2$;

3 substituents out of $R_1$ to $R_4$ and 2 substituents out of $R_6$ to $R_9$ are H and the other remaining 3 substituents out of $R_1$ to $R_4$ and $R_6$ to $R_9$ are each independently from each other H, $C_1$-$C_{12}$-alkyl, $C_1$-$C_{12}$-alkoxy or halogen; and

$R'_1$ and $R'_2$ are each independently from each other H, $C_1$-$C_{12}$-alkyl, $C_3$-$C_{10}$-cycloalkyl, $C_3$-$C_{22}$-alkenyl, $C_6$-$C_{10}$-aryl, $C_7$-$C_{12}$-aralkyl, or $R'_1$ and $R'_2$ form together with the nitrogen atom, to which they are attached, a pyrrolidine, a piperidine or a morpholine ring, with the proviso that $R'_1$ and $R'_2$ are not both $C_1$-alkyl.

23. An additive composition, which comprises

b) a compound of formula I as defined in claim 1, and

c) a further additive, which is a phosphite or phosphonite, an acid scavenger, a phenolic antioxidant or an aminic antioxidant.

24. An additive composition according to claim 23, wherein component c) is a phenolic antioxidant or a phosphite or phosphonite.

25. An additive composition according to claims 23 or 24, wherein component c) is tetrakis-[β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionyloxymethyl]methane, stearyl β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate or tris-(2,4-di-tert-butyl) phosphite.

26. An additive composition according to claims 23 or 24, which comprises

b) a compound of formula I as defined in claim 1,

c) a further additive, which is a phenolic antioxidant, and

d) a second further additive, which is a phosphite or phosphonite.

27. An additive composition according to claim 26, wherein component c) is tetrakis-[β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionyloxymethyl]methane or stearyl β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate.

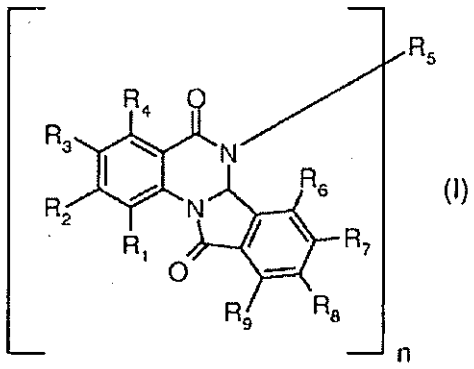
28. An additive composition according to anyone of claims 26 or 27, wherein component d) is tris-(2,4-di-tert-butyl) phosphite.

29. An additive composition according to anyone of claims 26 to 28, wherein component c) is tetrakis-[β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionyloxymethyl]methane or stearyl β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate and component d) is tris-(2,4-di-tert-butyl) phosphite.

# Claims

1. A composition, which comprises

a) an organic material susceptible to oxidative, thermal or light-induced degradation, wherein the organic material is a polymer, which is a polyolefin or a copolymer thereof, a polystyrene or a copolymer thereof, or a polyurethane or a copolymer thereof, with the proviso that the polymer is not a polypeptide, agar-agar or a component of agar-agar; and
b) a compound of formula I




(I)

wherein

n is 1,
$R_5$ is H, $C_1$-$C_{30}$-alkyl, $C_3$-$C_{10}$-cycloalkyl, $C_6$-$C_{10}$-aryl, which is unsubstituted or substituted by $C_1$-$C_8$-alkyl or $C_1$-$C_8$-alkoxy, $C_7$-$C_{13}$-aralkyl, $C_2$-$C_{22}$-alkenyl, OH, $C_1$-$C_{30}$-alkyloxy, $C_3$-$C_{10}$-cycloalkyloxy, $C_6$-$C_{12}$-aryloxy, $C_7$-$C_{13}$-aralkyloxy, hydroxy-$C_1$-$C_8$-alkyl, carboxy-$C_1$-$C_{12}$-alkyl, $C_1$-$C_{12}$-alkoxycarbonyl-$C_1$-$C_{12}$-alkyl, $C_2$-$C_{30}$-alkyl, which is interrupted by one or more oxygen atoms, or $NR'_1R'_2$;
3 substituents out of $R_1$ to $R_4$ and 2 substituents out of $R_6$ to $R_9$ are H and the other remaining 3 substituents out of $R_1$ to $R_4$ and $R_6$ to $R_9$ are each independently from each other H, $C_1$-$C_{12}$-alkyl, $C_1$-$C_{12}$-alkoxy or halogen; and
$R'_1$ and $R'_2$ are each independently from each other H, $C_1$-$C_{12}$-alkyl, $C_3$-$C_{10}$-cycloalkyl, $C_3$-$C_{22}$-alkenyl, $C_6$-$C_{10}$-aryl, which is unsubstituted or substituted by $C_1$-$C_8$-alkyl or $C_1$-$C_8$-alkoxy, $C_7$-$C_{12}$-aralkyl, or $R'_1$ and $R'_2$ form together with the nitrogen atom, to which they are attached, a pyrrolidine, a piperidine or a morpholine ring.

2. A composition according to anyone of claim 1, wherein the organic material is a polymer, which is a polyolefin or a copolymer thereof or a polystyrene or a copolymer thereof.

3. A composition according to claim 1 or 2, wherein component b) is contained in an amount of 0.0005% to 10% based on the weight of component a).

4. A composition according to anyone of claims 1 to 3, which comprises as component c) a further additive.

5. A composition according to claim 4, which comprises as component c) a further additive, which is a phosphite or phosphonite, an acid scavenger, a phenolic antioxidant or an aminic antioxidant.

6. A composition according to claims 4 or 5, which comprises

   a) an organic material susceptible to oxidative, thermal or light-induced degradation as defined in claim 1,
   b) a compound of formula I as defined in claim 1, and
   c) a further additive, which is a phenolic antioxidant or a phosphite or phosphonite.

7. A composition according to anyone of claims 4 to 6, wherein component c) is tetrakis-[β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionyloxymethyl]methane or stearyl β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate.

8. A composition according to anyone of claims 4 to 6, wherein component c) is tris-(2,4-di-tert-butyl) phosphite.

9. A composition according to anyone of claims 4 to 8, wherein the weight ratio of component b) to component c) is from 4 : 1 to 1 : 20 and the combined amount of component b) and component c) is below 80% based on the weight of component a).

10. A composition according to anyone of claims 4 to 9, which comprises as component d) a second further additive, which is a phosphite or phosphonite, an acid scavenger, a phenolic antioxidant or an aminic antioxidant; with the proviso that component d) is a different substance than component c).

11. A composition according to anyone of claims 4 to 6, 9 or 10, which comprises.

    a) an organic material susceptible to oxidative, thermal or light-induced degradation as defined in claim 1,
    b) a compound of formula I as defined in claim 1,
    c) a further additive, which is a phenolic antioxidant, and
    d) a second further additive, which is a phosphite or phosphonite.

12. A composition according to claim 11, wherein component c) is tetrakis-[β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionyloxymethyl]methane or stearyl β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate.

13. A composition according to claims 11 or 12, wherein component d) is tris-(2,4-di-tert-butyl) phosphite.

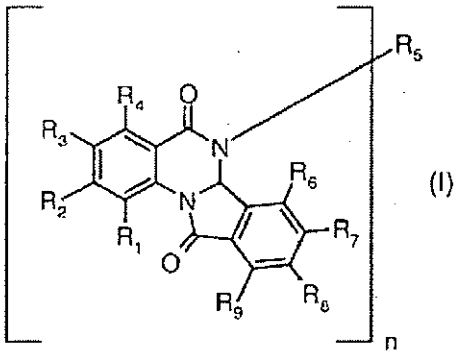
14. A composition according to anyone of claims 11 to 13, wherein component c) is tetrakis-[β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionyloxymethyl]methane or stearyl β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate, and component d) is tris-(2,4-di-tert-butyl) phosphite.

15. A process for protection of an organic material susceptible to oxidative, thermal or light-induced degradation as defined in claim 1, which comprises the step of incorporation into or application onto an organic material as defined in claim 1 a compound of formula I as defined in claim 1.

16. A process according to claim 15, wherein the organic material is a polymer, and which comprises the step of incorporation of a compound of formula I into the organic material and wherein a part or the complete incorporation takes place at a temperature between 135°C to 350°C.

17. A use of a compound of formula I as defined in claim 1 for stabilizing an organic material susceptible to oxidative, thermal or light-induced degradation as defined in claim 1 against degradation by oxidation, heat or light.

18. A compound of formula I



(I)

wherein

n is 1,
$R_5$ is $C_1$-$C_{30}$-alkyloxy, $C_3$-$C_{10}$-cycloalkyloxy, $C_6$-$C_{12}$-aryloxy, $C_7$-$C_{13}$-aralkyloxy or $NR'_1R'_2$;
3 substituents out of $R_1$ to $R_4$ and 2 substituents out of $R_6$ to $R_9$ are H and the other remaining 3 substituents out of $R_1$ to $R_4$ and $R_6$ to $R_9$ are each independently from each other H, $C_1$-$C_{12}$-alkyl, $C_1$-$C_{12}$-alkoxy or halogen; and
$R'_1$ and $R'_2$ are each independently from each other H, $C_1$-$C_{12}$-alkyl, $C_3$-$C_{10}$-cycloalkyl, $C_3$-$C_{22}$-alkenyl, $C_6$-$C_{10}$-aryl, $C_7$-$C_{12}$-aralkyl, or $R'_1$ and $R'_2$ form together with the nitrogen atom, to which they are attached, a pyrrolidine, a piperidine or a morpholine ring, with the proviso that $R'_1$ and $R'_2$ are not both $C_1$-alkyl.

19. An additive composition, which comprises

b) a compound of formula I as defined in claim 1, and
c) a further additive, which is a phosphite or phosphonite, an acid scavenger, a phenolic antioxidant or an aminic antioxidant.

20. An additive composition according to claim 19, wherein component c) is a phenolic antioxidant or a phosphite or phosphonite.

21. An additive composition according to claims 19 or 20, wherein component c) is tetrakis-[β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionyloxymethyl]methane, stearyl β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate or tris-(2,4-di-tert-butyl) phosphite.

22. An additive composition according to claims 19 or 20, which comprises

b) a compound of formula I as defined in claim 1,
c) a further additive, which is a phenolic antioxidant, and
d) a second further additive, which is a phosphite or phosphonite.

23. An additive composition according to claim 22, wherein component c) is tetrakis-[β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionyloxymethyl]methane or stearyl β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate.

24. An additive composition according to anyone of claims 22 or 23, wherein component d) is tris-(2,4-di-tert-butyl) phosphite.

25. An additive composition according to anyone of claims 22 to 24, wherein component c) is tetrakis-[β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionyloxymethyl]methane or stearyl β-(3,5-di-tert-butyl-4-hydroxyphenyl)-propionate and component d) is tris-(2,4-di-tert-butyl) phosphite.