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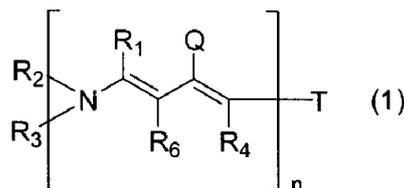
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(54) Abstract Title: **Use of myocyanine derivatives for the protection of human hair and skin from UV radiation**

(57) The use of myocyanine derivatives of the general formula (1) for the protection of human hair and skin from the damaging effect of ultraviolet radiation:



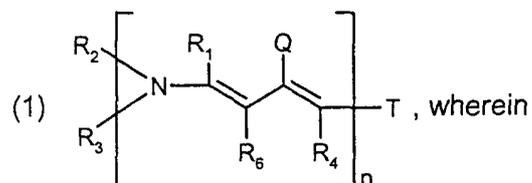
wherein Q is hydrogen, C₁₋₂₂ alkyl, OH, OR₇, NR₇R₈, or N=R₉; R₁ or substituents; R₄ is cyano, COR₇, COOR₇ or other substituents; R₅ is COR₇, COOR₇ or other substituents; R₆ is hydrogen, C₁₋₂₂ alkyl, C₁₋₂₂ alkoxy or COR₇; R₇ and R₈ are hydrogen, C₁₋₂₂ alkyl or other substituents including silicon-containing substituents; R₉ is a C₁₋₆ alkylidene radical; R₁ and R₂, R₁ and Q, R₁ and R₆, R₁ and T, R₂ and R₃, R₂ and R₄, R₂ and R₆, R₂ and Q, R₄ and R₆, R₄ and T, R₆ and Q, T and Q may each be linked together so that 1-4 carbocyclic or N, O and/or S-containing heterocyclic rings are formed wherein each ring may be condensed with an aromatic or heteroaromatic ring; n is 1 to 4; wherein at least one of R₁, R₆ or Q is not hydrogen; and T is COR₅, CN or other substituents. Cosmetic compositions and UV absorber dispersions comprising these compounds are also claimed. Monomeric or polymeric compounds wherein group T comprises a carbonyl group are also claimed per se.

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Merocyanine derivatives

The present invention relates to the use of the compounds of formula



Q is hydrogen; C₁-C₂₂alkyl; -OH; -OR₇; -NR₇R₈; or -N=R₉;

R₁ is hydrogen; C₁-C₂₂alkyl; -OR₇; -SR₇; -NR₇R₈; C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; C₁-C₁₂heteroalkyl; C₂-C₁₁heteroaryl; C₆-C₁₀aryl; or C₁-C₉heteroaryl;

R₄ is cyano; COR₇; COOR₇; CONR₇R₈; SO₂(C₆-C₁₂)aryl; C₂-C₁₂alk-1-enyl; C₃-C₁₂cycloalk-1-enyl; C₂-C₁₂alk-1-inyl; C₂-C₁₂heteroalkyl; C₃-C₅heterocycloalkyl; C₆-C₁₀aryl; or C₁-C₉heteroaryl;

R₅ is -COR₇; -COOR₇; -OR₇; -SR₇; -NHR₇; -NR₇R₈; C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; C₁-C₁₂alkylphenyl; C₁-C₁₂alkoxy-C₆-C₁₀aryl; C₁-C₁₂heteroalkyl; C₂-C₁₁heteroaryl; C₃-C₁₂cycloheteroalkyl; C₆-C₁₀aryl; C₁-C₁₂alkoxy-C₆-C₁₀aryl; or C₁-C₉heteroaryl;

R₆ is hydrogen; C₁-C₂₂alkyl; C₁-C₂₂alkoxy; or COR₇;

R₇ and R₈ independently from each other are hydrogen; C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; -(CH₂)_tCOOH; C₇-C₁₂aralkyl; C₁-C₁₂heteroalkyl; C₂-C₁₁heteroaryl; C₆-C₁₀aryl; C₁-C₉heteroaryl; Si-R₁₀R₁₁R₁₂; Si(OR₁₀)(OR₁₁)(OR₁₂); SiR₁₀(OR₁₁)(OR₁₂); SiR₁₀R₁₁(OR₁₂); -(CH₂)_u-O-(CH₂)_v-SiR₁₀R₁₁R₁₂; or a radical X-Sil;

t, u and v, independently from each other are a number from 1 to 5;

R₉ is a (C₁-C₆)alkylidene radical;

R₁₀, R₁₁, R₁₂ independently from each other are C₁-C₂₂alkyl;

X is a linker;

Sil is a silane-, oligosiloxane- or polysiloxane radical;

R₁ and R₂, R₁ and Q, R₁ and R₆, R₁ and T, R₂ and R₃, R₂ and R₄, R₂ and R₆, R₂ and Q, R₄ and R₆, R₄ and T, R₆ and Q, T and Q, each independently, are linked together, so that 1, 2, 3 or 4 carbocyclic or N, O and/or S-heterocyclic rings are formed, wherein each of them, independently from each other, may be condensed with an aromatic or

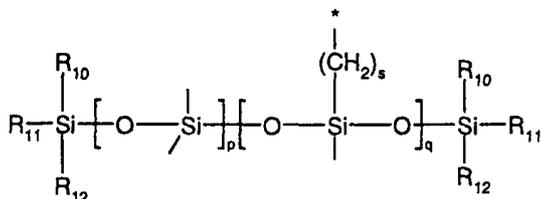
heteroaromatic ring, and/or more N-, O- and/or S-heterocyclic rings, and each N atom in a N-heterocyclic ring may be substituted by C₁-C₂₂alkyl;

n is a number from 1 to 4; wherein at least one of the radicals R₁, R₆ or Q is different from hydrogen;

if n = 1

T is -COR₅; -CN; C₆-C₁₀aryl; -NHR₅; or -SO₂-(C₆-C₁₂)aryl;

R₂ and R₃ independently from each other are C₁-C₂₂alkyl; hydroxy-C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkynyl; C₃-C₁₂cycloalkyl, C₃-C₁₂cycloalkenyl; C₇-C₁₂ aralkyl; C₁-C₁₂heteroalkyl; C₃-C₁₂cycloheteroalkyl; C₆-C₁₀aryl; C₁-C₉heteroaryl; or a radical of formula



p is a number from 5 to 100

q is a number from 1 to 5;

s is a number from 0 to 4;

if n = 2

R₂ and R₃ are each C₁-C₅alkylene; and simultaneously T is defined as for n = 1; or

T is a bivalent radical of formula -NR₇-V-NR₇-, wherein

V is phenylene; or C₁-C₅alkylene;

R₇ is hydrogen; or C₁-C₅alkyl; and R₂ and R₃ simultaneously are defined as for n = 1;

if n = 3

one of R₂, R₃ or T is a trivalent radical;

if n = 4

one of R₂, R₃ or T is a tetravalent radical;

for protecting of human hair and skin against the damaging effect of UV radiation.

Halogen ist chloro, bromo, fluoro or iodo, preferably chloro.

Alkyl, cycloalkyl, alkenyl, alkylidene or cycloalkenyl may be straight chained or branched, monocyclic or polycyclic.

Alkyl ist for example methyl, ethyl, n-propyl, isopropyl, n-butyl, sec.-butyl, isobutyl, tert.-butyl, n-pentyl, 2-pentyl, 3-pentyl, 2,2-dimethylpropyl, n-hexyl, n-octyl, 1,1,3,3-tetramethylbutyl, 2-ethylhexyl, nonyl, decyl, n-octadecyl, eicosyl or dodecyl.

Alkenyl is for example straight-chain C_2 - C_{12} alkenyl or preferably branched C_3 - C_{12} alkenyl. C_1 - C_{12} alkyl, like vinyl, allyl, 2-propen-2-yl, 2-buten-1-yl, 3-buten-1-yl, 1,3-butadien-2-yl, 2-cyclobuten-1-yl, 2-penten-1-yl, 3-penten-2-yl, 2-methyl-1-buten-3-yl, 2-methyl-3-buten-2-yl, 3-methyl-2-buten-1-yl, 1,4-pentadien-3-yl, 2-cyclopenten-1-yl, 2-cyclohexen-1-yl, 3-cyclohexen-1-yl, 2,4-cyclohexadien-1-yl, 1-*p*-menthen-8-yl, 4(10)-thujen-10-yl, 2-norbornen-1-yl, 2,5-norbornadien-1-yl, 7,7-dimethyl-2,4-norcaradien-3-yl oder die verschiedenen isomeren von hexenyl, octenyl, nonenyl, decenyl oder dodecenyl.

C_3 - C_{12} cycloalkyl is for example cyclopropyl, cyclobutyl, cyclopentyl, trimethylcyclohexyl or preferably cyclohexyl.

C_7 - C_{18} aralkyl is for example benzyl, 2-benzyl-2-propyl, β -phenyl-ethyl, 9-fluorenyl, α,α -dimethylbenzyl, ω -phenyl-butyl, ω -phenyl-octyl, ω -phenyl-dodecyl oder 3-methyl-5-(1',1',3',3'-tetramethyl-butyl)-benzyl.

(C_1 - C_6)alkylidene is for example methylene, ethyl-1-ene, propyl-2-ene.

C_6 - C_{14} aryl is for example phenyl, naphthyl, biphenyl, 2-fluorenyl, phenanthryl, anthracenyl or terphenyl.

C_1 - C_{12} heteroaryl is an unsaturated or aromatic radical having $4n+2$ conjugated π -electrons, for example 2-thienyl, 2-furyl, 2-pyridyl, 2-thiazolyl, 2-oxazolyl, 2-imidazolyl, isothiazolyl, triazolyl, tetrazolyl or another ring system from thiophene-, furan-, pyridine, thiazol, oxazol, imidazol, isothiazol, triazol, pyridine- and benzene rings, which are unsubstituted or substituted by 1 to 6 ethyl, methyl, ethylene and/or methylene, like benzotriazolyl, bei N-heterocycles optionally in the form of their N-oxides.

C_2 - C_{16} heteroaralkyl is for example C_1 - C_8 alkyl substituted with C_1 - C_8 heteroaryl.

Preferably compounds of formula (1) are used, w herein

Q is -OH; -OR₇; -NR₇R₈; or -N=R₉;

T is -COR₅; -CN; or -SO₂-(C₆-C₁₂)aryl;

R₁ is hydrogen; -OR₇, -SR₇; -NR₇R₈; C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; C₁-C₁₂heteroalkyl; C₂-C₁₁heteroaralkyl; C₆-C₁₀aryl; or C₁-C₉heteroaryl;

R₂ and R₃ independently from each other are C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl, C₃-C₁₂cycloalkenyl; C₇-C₁₂ aralkyl; C₁-C₁₂heteroalkyl; C₃-C₁₂cycloheteroalkyl; C₂-C₁₁heteroaralkyl, C₆-C₁₀aryl; or C₁-C₉heteroaryl;

R₄ is cyano; COR₇, COOR₇; CONR₇R₈; SO₂(C₆-C₁₂)aryl, C₂-C₁₂alk-1-enyl; C₃-C₁₂cycloalk-1-enyl; C₂-C₁₂alk-1-inyl; C₂-C₁₂heteroalkyl, C₃-C₅heterocycloalkyl, C₆-C₁₀aryl; or C₁-C₉heteroaryl;

R₅ is -COR₇; -COOR₇; -OR₇; -SR₇; -NR₇R₈; C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; C₁-C₁₂alkylphenyl; C₁-C₁₂alkoxy-C₆-C₁₀aryl; C₁-C₁₂heteroalkyl; C₂-C₁₁heteroaralkyl; C₃-C₁₂cycloheteroalkyl; C₆-C₁₀aryl; C₁-C₁₂alkoxy-C₆-C₁₀aryl or C₁-C₉heteroaryl;

R₆ is C₁-C₂₂alkyl; C₁-C₂₂alkoxy; or COR₇;

R₇ and R₈ independently from each other are hydrogen; C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; C₁-C₁₂heteroalkyl; C₂-C₁₁heteroaralkyl; C₆-C₁₀aryl; o-C₆-C₁₀aryl; or C₁-C₉heteroaryl;

R₉ is a (C₁-C₆)alkylidene radical; or

R₁ and R₂, R₁ and Q, R₁ and R₄, R₁ and R₆, R₂ and R₃, R₃ and Q, R₆ and Q, T and Q, each independently, are linked together, so that 1, 2, 3 or 4 carbocyclic or N, O and/or S-heterocyclic rings are formed, wherein each of them, independently from each other, may be condensed with an aromatic or heteroaromatic ring, and/or more N-, O- and/or S-heterocyclic rings, and each N atom in a N-heterocyclic ring may be substituted by C₁-C₂₂alkyl; and

n is 1.

More preferred is the use of the compounds of formula (1), wherein

Q is -OH; -OR₆; or -NR₇R₈;

T is -COR₅ -CN; or -SO₂-(C₆-C₁₂)aryl;

R₁ is hydrogen; -OR₇, -SR₇; -NR₇R₈; C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; or C₆-C₁₀aryl;

R₂ and R₃ independently from each other are C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂ aralkyl; or C₆-C₁₀aryl;

R₄ is cyano; -COR₅; -COOR₇; -CONR₇R₈; -SO₂(C₆-C₁₂)aryl; -C₁-C₂₂alkylcarbonylamino-C₆-C₁₀aryl; or C₆-C₁₀aryl;

R₅ is -COR₇; -COOR₇; -CONR₇R₈; -OR₇; -SR₇; -NR₇R₈; C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; C₆-C₁₀aryl; or C₁-C₁₂alkoxy-C₆-C₁₀aryl;

R₆, R₇ and R₈ independently from each other are hydrogen; C₁-C₂₂alkyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; or C₆-C₁₀aryl; or

R₁ and R₂, R₁ and Q, R₁ and R₄, R₁ and R₆, R₂ and R₃, R₃ and Q, R₆ and Q, T and Q are linked together pairwise, so that 1, 2, 3 or 4 carbocyclic or N-, O- and/or S-heterocyclic rings are formed, wherein each of them, independently from each other may be condensed with an aromatic or heteroaromatic ring, and/or more N, O and/or S-heterocyclic rings, and each N atom in a N-heterocyclic ring may be substituted by C₁-C₂₂alkyl.

Even more preferred is the use of the compounds of formula (1), wherein

R₁ is hydrogen; -S-C₁-C₂₂alkyl; or R₁ and R₂, or R₁ and R₄ together with the linking nitrogen atom form an alkylene radical which may be interrupted by one or more -O- and/or -NR₇- or may be condensed with an aromatic ring; and

R₇ is C₁-C₂₂alkyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; or C₆-C₁₀aryl.

Most preferred is the use of the compounds of formula (1), wherein

R₁ is hydrogen.

Furthermore, the use of compounds formula (1) is preferred, wherein

R₂ and R₃ independently from each other are C₁-C₅alkyl; phenyl-C₁-C₃alkyl; hydroxy-C₁-C₁₂alkyl; or R₂ and R₃, or R₂ and R₄, or R₂ and Q together with the linking nitrogen atom form an alkylene radical which may be interrupted by one or more -O- and/or -NR₇- or may be condensed with an aromatic ring; and

R₇ is C₁-C₂₂alkyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; or C₆-C₁₀aryl;

And most preferably the use of the compounds of formula (1), wherein

R₂ and R₃ independently from each other are C₁-C₅alkyl; or R₂ and R₃ together with the linking nitrogen atom form a C₂-C₄alkylene radical which may be interrupted by -O- or -NR₇; and

R₇ is hydrogen; or C₁-C₅alkyl.

Preferred is also the use of compounds of formula (1), wherein

R₄ is -COR₅; phenyl, which is optionally substituted by C₁-C₅alkyl; -CN; or -SO₂-(C₆-C₁₀)aryl;
or

R₄ and T together with a bivalent C₃-C₇alkylene radical which may be interrupted by one or more -O- and/or -NR₇- form a carbocyclic ring which may be condensed with an aromatic ring; and

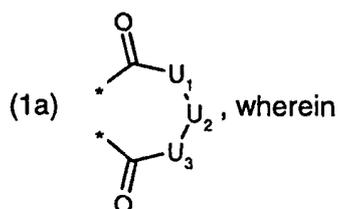
R₇ is hydrogen; or C₁-C₅alkyl.

Furthermore the use of compounds of formula (1) is preferred, wherein

R₄ is -CN; or COR₅;

R₅ is C₁-C₁₂alkyl; or C₁-C₁₂alkoxy; or

R₄ and T together with the bivalent radical of the formula

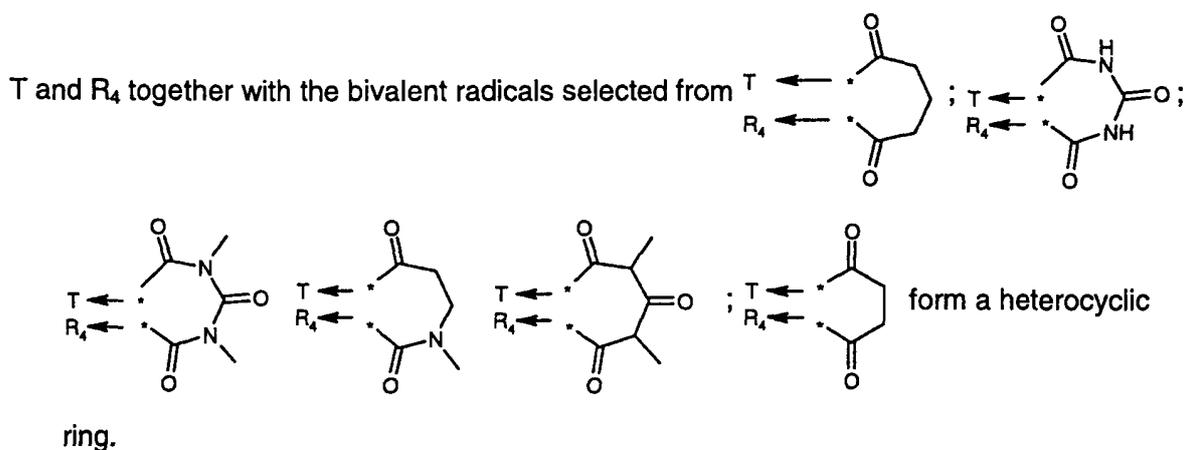


U₁ and U₃ independently from each other are a radical of formula -CHR₇; -NHR₇; or -O-;

U₂ is -CH₂; or -CO-; or the direct bond;

R₇ is hydrogen; or C₁-C₁₂alkyl; form an aromatic ring.

Most preferred is the use of compounds of formula (1), wherein



Furthermore, the use of compounds of formula (1) is preferred, wherein

R₆ is hydrogen; C₁-C₅alkyl; C₁-C₅alkoxy; -O-(C₆-C₁₀)aryl); or

R₆ and Q together with a bivalent C₃-C₇alkylene radical which may be interrupted by one or more -O- and/or -NR₇- or may be condensed with an aromatic ring, form a heterocyclic ring; and

R₇ is hydrogen; or C₁-C₁₂alkyl; and most preferably wherein

R₆ is hydrogen.

Furthermore, the use of compounds of formula (1) is preferred, wherein

T is -CN; -COR₅; or -SO₂-phenyl;

R₅ is C₁-C₅alkyl; C₁-C₅alkoxy; or NR₇R₈;

R₇ and R₈ independently from each other are hydrogen; or C₁-C₅alkyl; or

T and Q together with the bivalent C₃-C₇alkylene radical which may be interrupted by one or more -O- and/or -NR₇- or may be condensed with an aromatic ring, form a heterocyclic ring; and most preferably the use of compounds of formula (1), wherein

T is -CN; or -COR₅; and

R₅ is C₁-C₅alkyl; or C₁-C₅alkoxy.

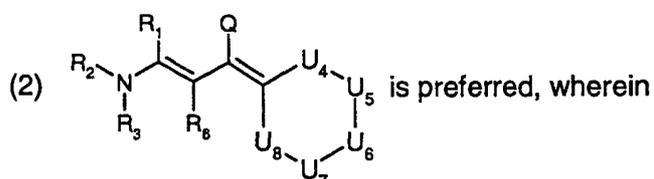
Furthermore, the use of compounds of formula (1) is preferred, wherein

Q is hydroxy; C₁-C₅alkoxy; or -NR₇R₈; and

R₇ and R₈ independently from each other are hydrogen; C₁-C₅alkyl; or phenyl, which may be substituted by one or more C₁-C₅alkyl or C₁-C₅alkoxy groups; and most preferably, wherein

Q is hydroxy.

Furthermore, the use of compounds of formula

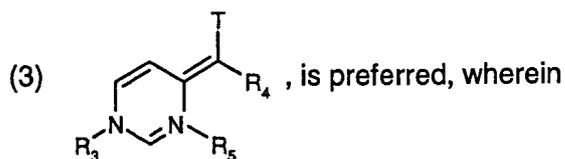


U₄, U₅, U₆, U₇ and U₈ independently of each other are -CHR₅-; -CO-; -NR₇-; -CS-; or -O-;

R₅ is hydrogen; or C₁-C₅alkyl; and

R₁, R₂, R₃, R₆, R₇ and Q are defined as in formula (1).

Furthermore, the use of compounds of formula



R₅ is hydrogen; or C₁-C₅alkyl; and

R₃, R₄, and T are defined as in formula (1); more preferably, wherein

R₃ is C₁-C₂₂alkyl; C₆-C₁₀aryl; or C₇-C₁₂aralkyl; and most preferably, wherein

R₃ is C₆-C₁₀aryl.

Furthermore, the use of compounds of formula (1) is preferred, wherein at least one of the radicals R₁, R₆ or Q is different from hydrogen.

Preferred is also the use of compounds of formula (1), wherein

Q is hydrogen; or C₁-C₂₂alkyl;

T is -COR₅; -CN; or -SO₂-(C₆-C₁₂)aryl;

R₁ is hydrogen; or C₁-C₂₂alkyl;

R₂ and R₃ independently from each other are C₁-C₂₂alkyl;

R₄ is CN; COR₅; CONH₂; or SO₂(C₆-C₁₂)aryl,

R₅ is -OR₇; -SR₇; -NHR₇; -NR₇R₈; C₁-C₂₂alkyl; C₇-C₁₂aralkyl;

R₇ and R₈ independently from each other are hydrogen; C₁-C₂₂alkyl; -(CH₂)_m-Si-R₁₀R₁₁R₁₂;
Si(OR₁₀)(OR₁₁)(OR₁₂); SiR₁₀(OR₁₁)(OR₁₂); SiR₁₀R₁₁(OR₁₂), or a radical X-Sil;

R₉ is a (C₁-C₆)alkylidene radical;

R₁₀, R₁₁, R₁₂ independently from each other are C₁-C₂₂alkyl;

X is a linker;

Sil is a silane-, oligosiloxane- or polysiloxane radical;

R₁ and R₂, R₁ and Q, R₁ and R₆, R₁ and T, R₂ and R₃, R₂ and R₄, R₂ and R₆, R₂ and Q, R₄ and R₆, R₄ and T, R₆ and Q, T and Q, each independently, are linked together, so that 1, 2, 3 or 4 carbocyclic or N, O and/or S-heterocyclic rings are formed, wherein each of them, independently from each other, may be condensed with an aromatic or heteroaromatic ring, and/or more N-, O- and/or S-heterocyclic rings, and each N atom in a N-heterocyclic ring may be substituted by C₁-C₂₂alkyl;

n is a number from 1 to 4; and

m is a number for 0 to 4; wherein at least one of the radicals R₁, R₆ or Q is different from hydrogen;

Preferred is the use of compounds of formula (1), wherein

R_1 , R_6 and Q , independently from each other are hydrogen; or C_1 - C_{22} alkyl, wherein at least one of R_1 , R_6 and Q is different from hydrogen; and most preferred the use of compounds of formula (1), wherein

R_1 , R_6 and Q , independently from each other are hydrogen; or C_1 - C_5 alkyl, wherein at least one of R_1 , R_6 and Q is different from hydrogen.

Preferred is also the use according of compounds of formula (1), wherein

T and R_4 independently from each other are $-COR_5$; $-CN$; or $-SO_2$ -(C_6 - C_{12})aryl; and

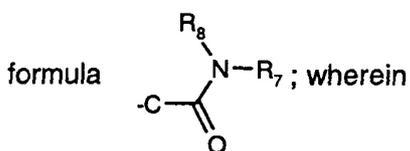
R_5 is $-OR_7$; $-NR_7R_8$; C_1 - C_{22} alkyl; C_7 - C_{12} aralkyl;

R_7 and R_8 independently from each other are hydrogen; C_1 - C_{22} alkyl; $-(CH_2)_m$ -Si- $R_{10}R_{11}R_{12}$;
and

R_{10} , R_{11} , and R_{12} independently from each other are C_1 - C_{22} alkyl.

Most preferred is the use of compounds of formula (1), wherein

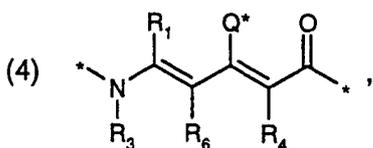
T and R_4 independently from each other are $-CN$; $SO_2C_6H_5$; $-C \begin{array}{l} \diagup O-R_7 \\ \diagdown O \end{array}$; or a radical of



R_7 and R_8 , independently from each other are C_1 - C_{12} alkyl; or a radical of formula $-SiR_{10}R_{11}R_{12}$; and

R_{10} , R_{11} and R_{12} are C_1 - C_5 alkyl.

Furthermore the present invention relates to the use of monomeric and polymeric compounds having the structural element of formula



wherein at least one of the asterix-marked radicals are joint with the monomeric or polymeric radical; and

R_1 , R_2 , R_4 and R_6 are defined as in formula (1).

Examples of merocyanine derivatives used in the present invention are listed in Table 1:

Table MC2a							
	R_2	R_3	Q	R_6	R_1	I	R_4
MC01	i-propyl	i-propyl	OH	H	H		
MC02	CH ₃	CH ₃	OH	H	H		$\lambda_{max} = 374 \text{ nm}$
MC03	CH ₃	CH ₃	OH	H	H		$\lambda_{max} = 375 \text{ nm}$
MC04	CH ₃	CH ₃	OH	H	H		$\lambda_{max} = 363 \text{ nm}$
MC05	$R_2 + R_1$ 	CH ₃	OH	H	-		$\lambda_{max} = 371 \text{ nm}$
MC06	CH ₃	CH ₃	OH	H	H		$\lambda_{max} = 384 \text{ nm}$
MC07			OH	H	H		

Table MC2a							
	R_2	R_3	Q	R_6	R_1	I	R_4
MC08	CH ₃	n-butyl	OH	H	H		
MC09	CH ₃	CH ₃	OH	H			
MC10	CH ₃	CH ₃	OH			-CN	-(CO)-CH ₃
MC11	CH ₃	CH ₃	OH	H	H		
MC12			OH	H	H		
MC13	$R_2 + R_1$ 	CH ₃	OH	H	-	-(CO)N(C ₂ H ₅) ₂	-(CO)-CH ₃
MC14	CH ₃	CH ₃	OH				-(CO)-CH ₃
MC15			OH	H	H		

Table MC2a							
	R_2	R_3	Q	R_6	R_1	I	R_4
MC16 $\lambda_{max} = 399 \text{ nm}$	CH ₃	CH ₃	OH	H	H		
MC17 $\lambda_{max} = 373 \text{ nm}$	CH ₃	i-propyl	OH	H	H		
MC18	i-propyl	i-propyl	OH	H	H		
MC19 $\lambda_{max} = 380 \text{ nm}$	CH ₃	CH ₃	OH	CH ₃	H		
MC20 $\lambda_{max} = 368 \text{ nm}$	CH ₃	CH ₃	OH	H	H		
MC21	CH ₃	CH ₃	-O-C ₆ H ₅	H	H	-(CO)-CH ₃	CN
MC22	CH ₃	CH ₃	-O-CH ₃	H	H	-(CO)-O-CH ₃	CN
MC23			-OC ₂ H ₅	H			-(CO)OCH ₃

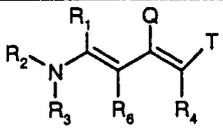
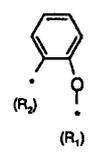
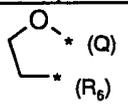
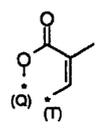
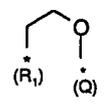
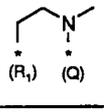
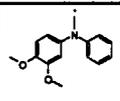
Table MC2a							
							
	<u>R₂</u>	<u>R₃</u>	<u>Q</u>	<u>R₆</u>	<u>R₁</u>	<u>I</u>	<u>R₄</u>
MC24	<u>R₂+R₁</u> : 	C ₂ H ₅	-OC ₂ H ₅	H	-	-(CO)OC ₂ H ₅	-(CO)OC ₂ H ₅
MC25	CH ₃	CH ₃		H	H	-CO-O-C ₂ H ₅	-CN
MC26	CH ₃	CH ₃	<u>Q+T</u> : 	H	H	-	-(CO)OC ₂ H ₅
MC27	CH ₃	CH ₃	<u>Q+R₁</u> : 	H	-	-(CO)-O-CH ₃	-CN
MC28	CH ₃	CH ₃	<u>Q+R₁</u> : 	H	-	-(CO)-O-CH ₃	-SO ₂ -C ₆ H ₅
MC29	CH ₃	CH ₃	-N(CH ₃) ₂	H	H	-(CO)-CH ₃	-(CO)OC ₂ H ₅
	$\lambda_{\max} = 321 \text{ nm}$						
MC30	CH ₃	CH ₃	-N(CH ₃) ₂	H	H	-CN	-(CO)-OCH ₃
MC31	CH ₃	CH ₃	-N(CH ₃) ₂	H	H	-(CO)OC ₂ H ₅	-(CO)OC ₂ H ₅
	$\lambda_{\max} = 321 \text{ nm}$						
MC32	CH ₃	CH ₃	-NH ₂	H	H	-CN	-(CO)OC ₂ H ₅
MC33	CH ₃	CH ₃		H	H	-CN	-(CO)OC ₂ H ₅

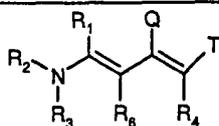
Table MC2a							
	<u>R₂</u>	<u>R₃</u>	<u>Q</u>	<u>R₆</u>	<u>R₁</u>	<u>I</u>	<u>R₄</u>
MC34	CH ₃	CH ₃	<u>R₆+Q:</u> 	H	H	-CN	-(CO)OC ₂ H ₅
MC35	CH ₃	CH ₃	<u>R₆+Q:</u> 	H	H	-CN	-(CO)OC ₂ H ₅
MC36	<u>R₂+Q:</u> 	CH ₃	-	H	H	-CN	-(CO)OC ₂ H ₅
MC37	<u>R₂+Q:</u> 		-	H	H	-CN	-(CO)OC ₂ H ₅
MC38	<u>R₂+Q:</u> 		-	H	H	-CN	-(CO)OC ₂ H ₅
MC39	<u>R₂+Q:</u> 	CH ₃	-	H	H	-CN	
MC40	<u>R₂+Q:</u> 		-	H	H	-CN	-(CO)-O-C ₂ H ₅
MC41	CH ₃	CH ₃	OH	H	H		

Table MC2a							
	R_2	R_3	Q	R_6	R_1	I	R_4
MC42	CH ₃	CH ₃	$\underline{Q+T}$ 	H	H	-	-(CO)-O-C ₂ H ₅
MC43	$\underline{R_2+Q}$: 	HO 	-	H	H	-CN	-(CO)-O-C ₂ H ₅
MC44	$\underline{R_2+Q}$: 	CH ₃	-	H	H	-(CO)-O-C ₂ H ₅	-(CO)-O-C ₂ H ₅
MC45	$\underline{R_2+Q}$: $\lambda_{max} = 364 \text{ nm}$		-	H	H	-CN	-(CO)-O-C ₂ H ₅
MC46	$\underline{R_2+Q}$: 	H	-	H	H	-CN	-(CO)-O-C ₂ H ₅
MC47	$\underline{R_2+Q}$: 		-	H	H	-CN	
MC48	$\underline{R_2+Q}$: 		-	H	H	-CN	-(CO)-O-C ₂ H ₅
MC49	CH ₃	CH ₃	OH	H	H		
MC50	CH ₃	CH ₃	CH ₃	H	H	-COOCH ₃	-COOCH ₃

Table MC2a

	\underline{R}_2	\underline{R}_3	\underline{Q}	\underline{R}_6	\underline{R}_1	\underline{I}	\underline{R}_4
MC51	CH ₃	CH ₃	CH ₃	H	H	-COO C ₂ H ₅	-COO C ₂ H ₅
MC52	CH ₃	CH ₃	CH ₃	H	H	-COO C ₃ H ₇ (n)	-COO C ₃ H ₇ (n)
MC53	CH ₃	CH ₃	CH ₃	H	H	-COOC ₃ H ₇ (i)	-COO C ₃ H ₇ (i)
MC54	CH ₃	CH ₃	CH ₃	H	H	-COO C ₄ H ₉ (n)	-COO C ₄ H ₉ (n)
MC55	CH ₃	CH ₃	CH ₃	H	H	-COO C ₄ H ₉ (t)	-COO C ₄ H ₉ (t)
MC56	CH ₃	CH ₃	CH ₃	H	H	-COO C ₂ H ₅	-COOC ₄ H ₉ (t)
MC57	CH ₃	CH ₃	CH ₃	H	H	-COOCH ₃	-COOC ₄ H ₉ (t)
MC58	CH ₃	CH ₃	CH ₃	H	H	-COOC ₂ H ₅	-COOSi(CH ₃) ₃
MC59	CH ₃	CH ₃	CH ₃	H	H	-COOSi(CH ₃) ₃	-COOSi(CH ₃) ₃
MC60	CH ₃	CH ₃	CH ₃	H	H	-CO ₂ (CH ₂) ₃ Si(CH ₃) ₃	-CO ₂ (CH ₂) ₃ Si(CH ₃) ₃
MC61	CH ₃	CH ₃	CH ₃	H	H	-CONHC ₂ H ₅	-CONHC ₂ H ₅
MC62	CH ₃	CH ₃	CH ₃	H	H	-CON(C ₂ H ₅) ₂	-CON(C ₂ H ₅) ₂
MC63	CH ₃	CH ₃	CH ₃	H	H	CN	CN
MC64	CH ₃	CH ₃	CH ₃	H	H	CN	SO ₂ C ₆ H ₆
MC65	CH ₃	CH ₃	CH ₃	H	H	CN	COOC ₄ H ₉ (n)
MC66	CH ₃	CH ₃	CH ₃	H	H	CN	COOC ₈ H ₁₇ (i)
MC67	CH ₃	CH ₃	CH ₃	H	H	CN	COOCH ₃
MC68	CH ₃	CH ₃	CH ₃	H	H	CN	COOC ₂ H ₅
MC69	CH ₃	CH ₃	CH ₃	H	H	CN	-CONHC ₂ H ₅
MC70	CH ₃	CH ₃	CH ₃	H	H	CN	-CON(C ₂ H ₅) ₂
MC71	CH ₃	CH ₃	CH ₃	H	H	SO ₂ C ₆ H ₆	COOCH ₃
MC72	CH ₃	CH ₃	CH ₃	H	H	SO ₂ C ₆ H ₆	COOC ₂ H ₅
MC73	CH ₃	CH ₃	CH ₃	H	H	SO ₂ C ₆ H ₆	COOC ₃ H ₇
MC74	CH ₃	CH ₃	CH ₃	H	H	SO ₂ C ₆ H ₆	COOC ₄ H ₉
MC75	CH ₃	CH ₃	CH ₃	H	H	SO ₂ C ₆ H ₆	-COOC ₈ H ₁₇ (n)
MC76	CH ₃	CH ₃	CH ₃	H	H	SO ₂ C ₆ H ₆	COOC ₈ H ₁₇ (i)
MC77	CH ₃	CH ₃	CH ₃	H	H	SO ₂ C ₆ H ₆	-CONHC ₂ H ₅
MC78	CH ₃	CH ₃	CH ₃	H	H	SO ₂ tolyl	COOC ₂ H ₅

Table MC2a



	<u>R₂</u>	<u>R₃</u>	<u>Q</u>	<u>R₆</u>	<u>R₁</u>	<u>I</u>	<u>R₄</u>
MC79	CH ₃	CH ₃	CH ₃	H	CH ₃	-COOCH ₃	-COOCH ₃
MC80	CH ₃	CH ₃	CH ₃	H	CH ₃	-COOC ₂ H ₅	-COOC ₂ H ₅
MC81	CH ₃	CH ₃	CH ₃	H	CH ₃	-COOC ₃ H ₇ (n)	-COO C ₃ H ₇ -(n)
MC82	CH ₃	CH ₃	CH ₃	H	CH ₃	-COOC ₃ H ₇ (i)	-COO C ₃ H ₇ -(i)
MC83	CH ₃	CH ₃	CH ₃	H	CH ₃	-COO C ₄ H ₉ -(n)	-COO C ₄ H ₉ (n)
MC84	CH ₃	CH ₃	CH ₃	H	CH ₃	-COO C ₄ H ₉ -(t)	-COO C ₄ H ₉ (t)
MC85	CH ₃	CH ₃	CH ₃	H	CH ₃	-COO C ₂ H ₅	-COOC ₄ H ₉ -(t)
MC86	CH ₃	CH ₃	CH ₃	H	CH ₃	-COOCH ₃	-COOC ₄ H ₉ -(t)
MC87	CH ₃	CH ₃	CH ₃	H	CH ₃	-COOC ₂ H ₅	-COOSi(CH ₃) ₃
MC88	CH ₃	CH ₃	CH ₃	H	CH ₃	-COOSi(CH ₃) ₃	-COOSi(CH ₃) ₃
MC89	CH ₃	CH ₃	CH ₃	H	CH ₃	-CONHC ₂ H ₅	-CONHC ₂ H ₅
MC90	CH ₃	CH ₃	CH ₃	H	CH ₃	-CON(C ₂ H ₅) ₂	-CON(C ₂ H ₅) ₂
MC91	CH ₃	CH ₃	CH ₃	H	CH ₃	CN	CN
MC92	CH ₃	CH ₃	CH ₃	H	CH ₃	CN	SO ₂ C ₆ H ₆
MC93	CH ₃	CH ₃	CH ₃	H	CH ₃	CN	COOC ₄ H ₉ -(n)
MC94	CH ₃	CH ₃	CH ₃	H	CH ₃	CN	COOC ₈ H ₁₇ -(i)
MC95	CH ₃	CH ₃	CH ₃	H	CH ₃	CN	COOCH ₃
MC96	CH ₃	CH ₃	CH ₃	H	CH ₃	CN	COOC ₂ H ₅
MC97	CH ₃	CH ₃	CH ₃	H	CH ₃	CN	-CONHC ₂ H ₅
MC98	CH ₃	CH ₃	CH ₃	H	CH ₃	CN	-CON(C ₂ H ₅) ₂
MC99	CH ₃	CH ₃	CH ₃	H	CH ₃	SO ₂ C ₆ H ₆	COOCH ₃
MC100	CH ₃	CH ₃	CH ₃	H	CH ₃	SO ₂ C ₆ H ₆	COOC ₂ H ₅
MC101	CH ₃	CH ₃	CH ₃	H	CH ₃	SO ₂ C ₆ H ₆	COOC ₃ H ₇
MC102	CH ₃	CH ₃	CH ₃	H	CH ₃	SO ₂ C ₆ H ₆	COOC ₄ H ₉
MC103	CH ₃	CH ₃	CH ₃	H	CH ₃	SO ₂ C ₆ H ₆	COOC ₈ H ₁₇ -(n)
MC104	CH ₃	CH ₃	CH ₃	H	CH ₃	SO ₂ C ₆ H ₆	COOC ₈ H ₁₇ -(i)
MC105	CH ₃	CH ₃	CH ₃	H	CH ₃	SO ₂ C ₆ H ₆	-CONHC ₂ H ₅
MC106	CH ₃	CH ₃	CH ₃	H	CH ₃	SO ₂ tolyl	COOC ₂ H ₅

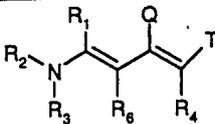
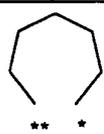
Table MC2a							
							
	<u>R₂</u>	<u>R₃</u>	<u>Q</u>	<u>R₆</u>	<u>R₁</u>	<u>T</u>	<u>R₄</u>
MC107	CH ₃	CH ₃	CH ₃	H	CH ₃	SO ₂ tolyl	-CONHC ₂ H ₅
MC108			CH ₃	H	H	-COO C ₂ H ₅	-COO C ₂ H ₅
MC109			CH ₃	H	H	-COOSi(CH ₃) ₃	-COOSi(CH ₃) ₃
MC110			CH ₃	H	H	CN	CN
MC111			CH ₃	H	H	CN	SO ₂ C ₆ H ₆
MC112			CH ₃	H	H	CN	COOC ₂ H ₅
MC113			CH ₃	H	H	SO ₂ C ₆ H ₆	COOCH ₃
MC114			CH ₃	H	H	SO ₂ tolyl	COOC ₂ H ₅
MC115			CH ₃	H	CH ₃	-COO C ₂ H ₅	-COO C ₂ H ₅
MC116			CH ₃	H	CH ₃	-COOSi(CH ₃) ₃	-COOSi(CH ₃) ₃
MC117			CH ₃	H	CH ₃	CN	CN
MC118			CH ₃	H	CH ₃	CN	SO ₂ C ₆ H ₆
MC119			CH ₃	H	CH ₃	CN	COOC ₈ H ₁₇ -(i)
MC120			CH ₃	H	CH ₃	SO ₂ C ₆ H ₆	COOCH ₃
MC121			CH ₃	H	H	-COOC ₂ H ₅	-COOC ₂ H ₅
MC122			CH ₃	H	H	-COOSi(CH ₃) ₃	-COOSi(CH ₃) ₃
MC123			CH ₃	H	H	CN	CN
MC124			CH ₃	H	H	CN	SO ₂ C ₆ H ₆
MC125			CH ₃	H	H	CN	COOC ₈ H ₁₇ -(i)
MC126			CH ₃	H	H	SO ₂ C ₆ H ₆	COOCH ₃
MC127			CH ₃	H	CH ₃	-COO C ₂ H ₅	-COO C ₂ H ₅
MC128			CH ₃	H	CH ₃	-COOSi(CH ₃) ₃	-COOSi(CH ₃) ₃
MC129			CH ₃	H	CH ₃	CN	CN
MC130			CH ₃	H	CH ₃	CN	SO ₂ C ₆ H ₆
MC131			CH ₃	H	CH ₃	CN	COOC ₈ H ₁₇ (i)
MC132			CH ₃	H	CH ₃	SO ₂ C ₆ H ₆	COOCH ₃
MC133			CH ₃	H	CH ₃	SO ₂ tolyl	-CONHC ₂ H ₅

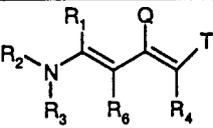
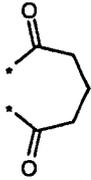
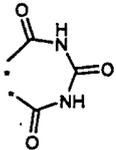
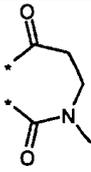
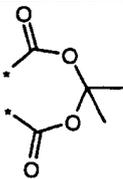
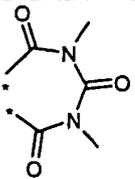
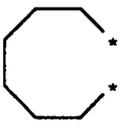
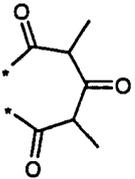
Table MC2a							
							
	\underline{R}_2	\underline{R}_3	\underline{Q}	\underline{R}_6	\underline{R}_1	\underline{I}	\underline{R}_4
MC134	i-propyl	i-propyl	CH ₃	H	H		
MC135	CH ₃	CH ₃	CH ₃	H	H		
MC136	CH ₃	CH ₃	CH ₃	H	H		
MC137			CH ₃	H	H		
MC138	$\underline{R}_2+\underline{R}_1$: 	CH ₃	CH ₃	H	-		
MC139	CH ₃	H	CH ₃	H	CH ₃	-(CO)OCH ₃	-(CO)OCH ₃
MC140			H	CH ₃	H		
MC141	CH ₃	n-C ₄ H ₉	CH ₃	H	CH ₃	-(CO)-O-C ₂ H ₅	-(CO)-O-C ₂ H ₅
MC142	CH ₃	CH ₃	CH ₃	H	CH ₃	-(CO)-O-Na	-(CO)-O-Na

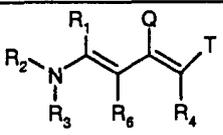
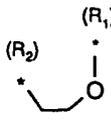
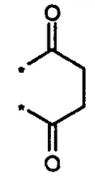
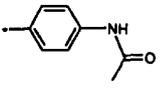
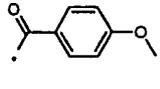
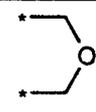
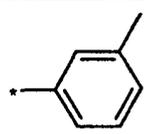
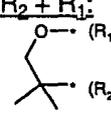
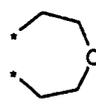
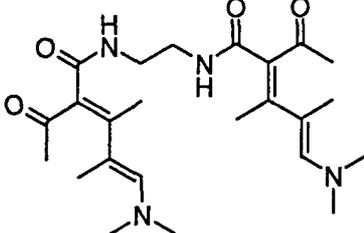
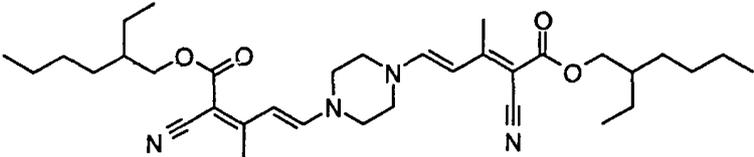
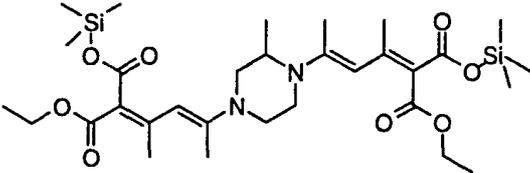
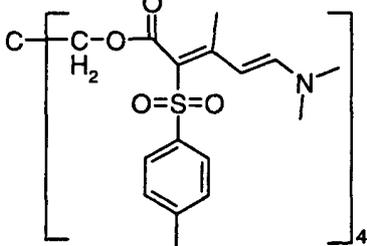
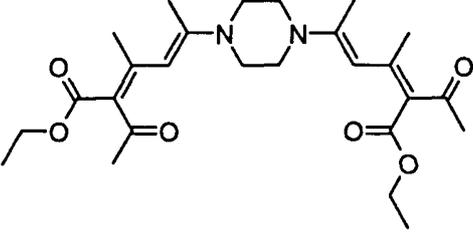
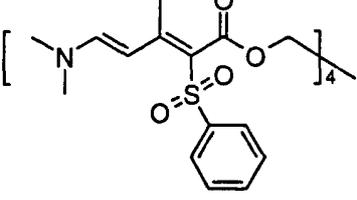
Table MC2a							
							
	$\underline{R_2}$	$\underline{R_3}$	\underline{Q}	$\underline{R_6}$	$\underline{R_1}$	\underline{I}	$\underline{R_4}$
MC143	$\underline{R_2 + R_1}$: 	H	CH ₃	H	-	-(CO)-O-Na	-(CO)-O-Na
MC144	CH ₃	CH ₃	H	H	CH ₃		
MC145	CH ₃	CH ₃	H			-CN	-(CO)-CH ₃
MC146	CH ₃	CH ₃	CH ₃	H	H		
MC147			CH ₃	H	CH ₃		-(CO)(CO)OC ₂ H ₅
MC148	$\underline{R_2 + R_1}$: 	CH ₃	t-butyl	H	H	-(CO)N(C ₂ H ₅) ₂	-CO-CH ₃
MC149	i-propyl	i-propyl			H	-CN	-CN
MC150	CH ₃	CH ₃			H	-CN	-CN
MC151	-(CH ₂) ₃ -Si(CH ₃) ₃		CH ₃	H	H	-CO-C(CH ₃) ₃	-CO-O-C ₂ H ₅
MC152			H	CH ₃	H	-(CO)OSi(CH ₃) ₃	-(CO)OSi(CH ₃) ₃

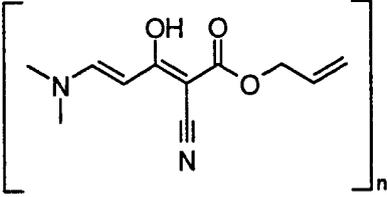
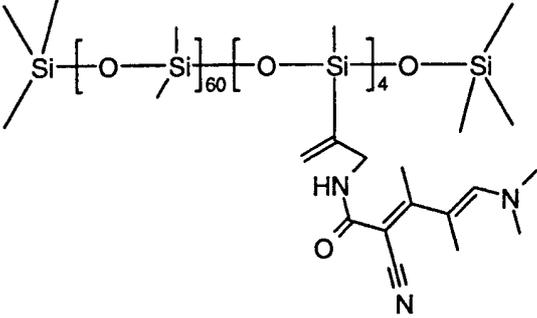
Table MC2a							
	<u>R₂</u>	<u>R₃</u>	<u>Q</u>	<u>R₆</u>	<u>R₁</u>	<u>I</u>	<u>R₄</u>
MC153	n-C ₃ H ₇		CH ₃	H	H	-CO-CH ₃	
MC154	CH ₃	CH ₃	C ₂ H ₅	H	H	-NH(CO)C ₅ H ₁₂	-CN
MC155	C ₂ H ₅	C ₂ H ₅	CH ₃	CH ₃	CH ₃	-(CO)-O-C ₂ H ₅	-(CO)-O-C ₂ H ₅
MC156	CH ₃	CH ₃		H	CH ₃	-(CO)-O-C ₂ H ₅	-(CO)-O-C ₂ H ₅
MC157	CH ₃	CH ₃	H		CH ₃	-(CO)-O-C ₂ H ₅	-CN
MC158	CH ₃	CH ₃		H	phenyl	-(CO)-O-C ₂ H ₅	-(CO)-O-C ₂ H ₅
MC159	CH ₃	CH ₃	C ₆ H ₅ Br	H	CH ₃	-CN	-(CO)-O-C ₂ H ₅
MC160	CH ₃	CH ₃	biphenyl	H	CH ₃	CN	-(CO)-O-C ₂ H ₅
MC161	CH ₃	CH ₃			H	CN	-(CO)-O-C ₂ H ₅
MC162	CH ₃	CH ₃	phenyl	H	CH ₃	CN	-(CO)-O-C ₂ H ₅
MC163		CH ₃	H	H		CN	-(CO)-O-C ₂ H ₅
MC164	n-butyl	n-butyl	CH ₃	H	H	-(CO)-O-C ₂ H ₅	-SO ₂ -C ₆ H ₅
MC165	CH ₃	CH ₃	H	H	phenyl	-(CO)-CH ₃	
MC166	CH ₃	CH ₃	H	H		-(CO)-CH ₃	-CN
MC167	CH ₃	CH ₃		H	H	-(CO)-O-CH ₃	-(CO)-O-CH ₃
MC168	CH ₃	CH ₃	H	H	phenyl	-CN	-(CO)OC(CH ₃) ₃

Table MC2a							
	\underline{R}_2	\underline{R}_3	\underline{Q}	\underline{R}_6	\underline{R}_1	\underline{T}	\underline{R}_4
MC169	n-butyl	n-butyl	H	H		-CN	-(CO)OC(CH ₃) ₃
MC170	C ₂ H ₅	C ₂ H ₅	H	H		-CN	
MC171	CH ₃	CH ₃		H	CH ₃	-CN	
MC172			H	H		-CN	
MC173	C ₂ H ₅	C ₂ H ₅	H	H		-CN	-(CO)-O-C ₂ H ₅
MC174	CH ₃	CH ₃	H	H	-CN	-CN	-(CO)-O-CH ₃
MC175	-C ₂ H ₅ OH	-C ₂ H ₅ OH	H	H		-CN	-(CO)-O-C ₂ H ₅
MC176	H	C ₂ H ₅	H	H		-CN	-(CO)-O-C ₂ H ₅
MC177	C ₂ H ₅	n-butyl		H	H	-CN	-CN
MC178	C ₂ H ₅	C ₂ H ₅	C ₂ H ₅	H	H	(T = R ₄) 	

Table MC2a							
	\underline{R}_2	\underline{R}_3	\underline{Q}	\underline{R}_6	\underline{R}_1	\underline{I}	\underline{R}_4
MC179	C ₂ H ₅ OH	C ₂ H ₅ OH	CH ₃	CH ₃	H	-CN	
MC180	H		CH ₃	H	H		-(CO)CH ₃
MC181			C ₂ H ₅	H	H	-CN	
MC182			C ₂ H ₅	H	H		

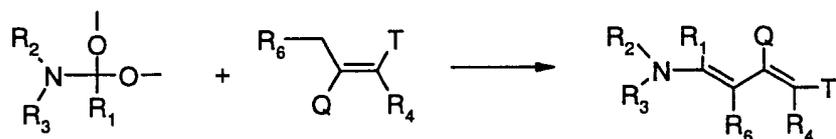
MC183	
MC184	
MC185	
MC186	
MC187	
MC188	
MC189	

MC190	
MC191	
MC192	
MC193	
MC194	
MC195	
MC196	

MC197	
MC198	

The compounds of formula (1) are prepared according to known processes, as disclosed for example in J.Org.Chem. USSR (Engl.Transl.) 26(8), p. 1562f (1990); J.Heterocycl.Chem. 33(3), p. 763-766 (1996); Khimiya Geterotsiklicheskikh Soedinenii 11, p. 1537-1543 (1984); Khimiya Geterotsiklicheskikh Soedinenii 3, p. 397-404 (1982); Chem.Heterocycl.Comp. (Engl.Transl.) 24(8), 914-919 (1988).

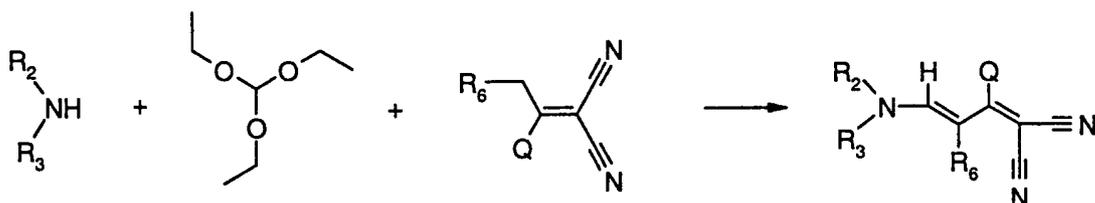
The synthesis of the compounds used in the present invention is also disclosed in WO 0234710, Eur. J. Org. Chem. 2003, 2250-2253, J. Med. Chem. 1996, 39, 1112-1124 and J. Org. Chem., Vol. 37, No. 8, 1972, 1141-1145 as follows:



Vinylogene CH-acid compounds are reacted with acetals of amides.

In J. Heterocyclic Chem., 27, 1990, 1143-1151 aminoacrylic acid esters or aminoacrylonitriles are reacted with ethoxymehtylenecyanoacetates in ethanol to the corresponding compounds used in the present invention.

In J. Prakt. Chem. 327 (1985) 4, 567-579 iminoformylation reactions are carried out on substituted crotonnitriles:



The compounds of the formula (1) according to the present invention are particularly suitable as UV filters, i.e. for protecting ultraviolet-sensitive organic materials, in particular the skin and hair of humans and animals, from the harmful effects of UV radiation. These compounds are therefore suitable as sunscreens in cosmetic, pharmaceutical and veterinary medical preparations. These compounds can be used both in dissolved form and in the micronized state.

The UV absorbers according to the present invention can be used either in the dissolved state (soluble organic filters, solubelized organic filters) or in the micronised state (nanoscalar organic filters, particulate organic filters, UV-absorber pigments).

Any known process suitable for the preparation of microparticles can be used for the preparation of the micronised UV absorbers, for example:

- wet-milling (low viscous micronisation process for pumpable dispersions), with a hard grinding medium, for example zirconium silicate balls in a ball mill and a protective surfactant or a protective polymer in water or in a suitable organic solvent;
- wet-kneading (high viscous micronisation process non pump-able pastes) using a continuous or discontinuous (batch) kneader. For a wet-kneading process a solvent (water or cosmetically acceptable oils), a grinding-aid (surfactant, emulsifier) and a polymeric grinding aid may be used.
- spray-drying from a suitable solvent, for example aqueous suspensions or suspensions containing organic solvents, or true solutions in water, ethanol, dichloroethane, toluene or N-methylpyrrolidone etc..
- by the expansion according to the RESS process (Rapid Expansion of Supercritical Solutions) of supercritical fluids (e.g. CO₂) in which the UV filter or filters is/are dissolved, or the expansion of fluid carbon dioxide together with a solution of one or more UV filters in a suitable organic solvent;

- by reprecipitation from suitable solvents, including supercritical fluids (GASR process = Gas Anti-Solvent Recrystallisation / PCA process = Precipitation with Compressed Anti-solvents).

As milling apparatus for the preparation of the micronised organic UV absorbers there may be used, for example, a jet mill, ball mill, vibratory mill or hammer mill, preferably a high-speed mixing mill. Even more preferably used are modern ball mills; manufactures of these mill-types are for example Netzsch (LMZ-mill), Drais (DCP-viscoflow or cosmo), Bühler AG (centrifugal mills) or Bachhofer. The grinding is preferably carried out with a grinding aid. As kneading apparatus for the preparation of the micronised organic UV absorbers examples are typically sigma-hook batch kneaders but also serial batch kneaders (IKA-Werke) or continuous kneaders (Contiuna from Werner und Pfeleiderer).

Useful low molecular weight grinding aids for all the above micronizing processes are surfactants and emulsifiers as disclosed below in the chapters "emulsifiers" and "surfactants" and "fatty alcohols".

Useful polymeric grinding aids for water dispersion are cosmetically acceptable water soluble polymers with $M_n > 500$ g/mol for example acrylates (Salcare types), modified or non-modified polysaccharides, polyglucosides or xanthan gum. Furthermore an alkylated vinylpyrrolidone polymer, a vinylpyrrolidone/vinyl acetate copolymer, an acyl glutamate, an alkyl polyglucoside, cetareth-25 or a phospholipid may be used. Oil dispersions may contain cosmetically acceptable waxy polymers or natural waxes as polymeric grinding aid in order to adjust viscosity during and after processing. Examples of other useful polymeric grinding aids are disclosed below in the chapter "polymers".

Useful solvents for the grinding process are water, brine, (poly-)ethylenglycol, glycerine or cosmetically acceptable oils. Other useful solvents are disclosed below in the chapters "esters of fatty acids", "natural and synthetic triglycerides including glyceryl esters and derivatives", "perlescent waxes", "hydrocarbon oils" and "silicones or siloxanes".

The micronised UV absorbers so obtained usually have an average particle size from 0.02 to 2, preferably from 0.03 to 1.5, and more especially from 0.05 to 1.0 micrometer.

A further object of the present invention is a UV absorber dispersion, comprising
(a) a micronised UV absorber of formula (1), each of them having a particle size from 0,02 to 2 μm , and
(b) a suitable dispersing agent.

The UV absorbers according to the present invention can also be used as dry substrates in powder form. For that purpose the UV absorbers are subjected to known grinding methods, such as vacuum atomization, countercurrent spray-drying etc.. Such powders have a particle size from 0.1 micrometer to 2 micrometer. In order to avoid the occurrence of agglomeration, the UV absorbers may be coated with a surface-active compound prior to the pulverization process, for example with an anionic, non-ionic or amphoteric surfactant, e.g. a phospholipid or a known polymer, such as PVP, an acrylate etc..

The UV absorbers according to the present invention can also be used in specific carriers for cosmetics, for example in solid lipid nanoparticles (SLN) or in inert sol-gel microcapsules wherein the UV absorbers are encapsulated (Pharmazie, 2001 (56), p. 783-786). Lipid nanoparticles (CLN, = Crystalline Lipid Nanoparticles) as described in Internat. J. Pharmaceutics, 2002, 242, P. 373-375 can be used as active carrier for UV filter according to the invention.

The cosmetic formulations or pharmaceutical compositions according to the present invention may additionally contain one or more than one further UV filter as listed in Tables 1-3.

The cosmetic or pharmaceutical preparations can be prepared by physically mixing the UV absorber(s) with the adjuvant using customary methods, for example by simply stirring together the individual components, especially by making use of the dissolution properties of already known cosmetic UV absorbers, like octyl methoxy cinnamate, salicylic acid isooctyl ester, etc. The UV absorber can be used, for example, without further treatment, or in the micronised state, or in the form of a powder.

Cosmetic or pharmaceutical preparations contain from 0.05-40% by weight, based on the total weight of the composition, of one UV absorber or UV absorber mixtures.

Preference is given to the use of mixing ratios of the UV absorber of formula (1) according to the present invention and optionally further light-protective agents (as described in table 1-3) from 1:99 to 99:1, preferably from 1:95 to 95:1 and most preferably from 10:90 to 90:10, based on weight. Of special interest are mixing ratios of from 20:80 to 80:20, preferably from 40:60 to 60:40 and most preferably approximately 50:50. Such mixtures can be used, *inter alia*, to improve the solubility or to increase UV absorption.

The UV absorbers of formula (1) according to the present invention or combinations of UV filters are useful to protect skin, hair and/or natural or artificial hair color.

<u>Table 2: Suitable UV filter substances which can be additionally used with the UV absorbers according to the present invention</u>
p-aminobenzoic acid derivatives, for example 4-dimethylaminobenzoic acid 2-ethylhexyl ester;
salicylic acid derivatives, for example salicylic acid 2-ethylhexyl ester;
benzophenone derivatives, for example 2-hydroxy-4-methoxybenzophenone and its 5-sulfonic acid derivative;
dibenzoylmethane derivatives, for example 1-(4-tert-butylphenyl)-3-(4-methoxyphenyl)-propane-1,3-dione;
diphenylacrylates, for example 2-ethylhexyl 2-cyano-3,3-diphenylacrylate, and 3-(benzofuranyl) 2-cyanoacrylate;
3-imidazol-4-ylacrylic acid and esters;
benzofuran derivatives, especially 2-(p-aminophenyl)benzofuran derivatives, described in EP-A-582 189, US-A-5 338 539, US-A-5 518 713 and EP-A-613 893;
polymeric UV absorbers, for example the benzylidene malonate derivatives described in EP-A-709 080;
cinnamic acid derivatives, for example the 4-methoxycinnamic acid 2-ethylhexyl ester and isoamyl ester or cinnamic acid derivatives described in US-A-5 601 811 and WO 97/00851;
camphor derivatives, for example 3-(4'-methyl)benzylidene-bornan-2-one, 3-benzylidene-bornan-2-one, N-[2(and 4)-2-oxyborn-3-ylidene-methyl]-benzyl]acrylamide polymer, 3-(4'-trimethylammonium)-benzylidene-bornan-2-one methyl sulfate, 3,3'-(1,4-phenylenedimethine)-bis(7,7-dimethyl-2-oxo-bicyclo[2.2.1]heptane-1-methanesulfonic acid) and salts, 3-(4'-sulfo)benzylidene-bornan-2-one and salts; camphorbenzalkonium methosulfate;
hydroxyphenyltriazine compounds, for example 2-(4'-methoxyphenyl)-4,6-bis(2'-hydroxy-4'-n-octyloxyphenyl)-1,3,5-triazine; 2,4-bis[[4-(3-(2-propyloxy)-2-hydroxy-propyloxy)-2-hydroxy]-phenyl]-6-(4-methoxyphenyl)-1,3,5-triazine; 2,4-bis[[4-(2-ethyl-hexyloxy)-2-hydroxy]-phenyl]-6-[4-(2-methoxyethyl-carboxyl)-phenylamino]-1,3,5-triazine; 2,4-bis[[4-(tris(trimethylsilyloxy-silylpropyloxy)-2-hydroxy)-phenyl]-6-(4-methoxyphenyl)-1,3,5-triazine; 2,4-bis[[4-(2"-methylpropenyloxy)-2-hydroxy]-phenyl]-6-(4-methoxyphenyl)-1,3,5-triazine; 2,4-bis[[4-(1',1',1',3',5',5',5'-heptamethyltrisilyl-2"-methyl-propyloxy)-2-hydroxy]-phenyl]-6-(4-methoxyphenyl)-1,3,5-triazine; 2,4-bis[[4-(3-(2-propyloxy)-2-hydroxy-propyloxy)-2-

hydroxy]-phenyl)-6-[4-ethylcarboxy)-phenylamino]-1,3,5-triazine;
benzotriazole compounds, for example 2,2'-methylene-bis(6-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)-phenol);
trianilino-s-triazine derivatives, for example 2,4,6-trianiline-(p-carbo-2'-ethyl-1'-oxy)-1,3,5-triazine and the UV absorbers disclosed in US-A-5 332 568, EP-A-517 104, EP-A-507 691, WO 93/17002 and EP-A-570 838;
2-phenylbenzimidazole-5-sulfonic acid and salts thereof;
menthyl o-aminobenzoates;
physical sunscreens coated or not as titanium dioxide, zinc oxide, iron oxides, mica, MnO, Fe ₂ O ₃ , Ce ₂ O ₃ , Al ₂ O ₃ , ZrO ₂ . (surface coatings: polymethylmethacrylate, methicone (methylhydrogenpolysiloxane as described in CAS 9004-73-3), dimethicone, isopropyl titanium triisostearate (as described in CAS 61417-49-0), metal soaps as magnesium stearate (as described in CAS 4086-70-8), perfluoroalcohol phosphate as C9-15 fluoroalcohol phosphate (as described in CAS 74499-44-8; JP 5-86984 , JP 4-330007)). The primary particle size is an average of 15nm–35nm and the particle size in dispersion is in the range of 100nm – 300nm.
aminohydroxy-benzophenone derivatives disclosed in DE 10011317, EP 1133980 and EP 1046391
phenyl-benzimidazole derivatives as disclosed in EP 1167358
the UV absorbers described in "Sunscreens", Eds. N.J. Lowe, N.A.Shaath, Marcel Dekker, Inc. , New York and Basle or in Cosmetics & Toiletries (107), 50ff (1992) also can be used as additional UV protective substances.

<u>Table 3: Suitable UV filter substances which can be additionally used with the UV absorbers according to the present invention</u>	
(Abbreviations T: table, R: row, Comp: compound, Ex: compound(s) of patent example, p: page); the generic scope of the UV absorbers is described in the left-hand column; specific compounds are indicated in the right-hand column	
DE 100331804	Tab 1 p 4, tab 2 + 3 p 5
EP 613893	Ex 1-5 + 15, T 1, pp 6-8
EP 1000950	Comp. in table 1, pp 18-21
EP 1005855	T 3, p 13
EP 1008586	Ex 1-3, pp 13-15
EP 1008593	Ex 1-8, pp 4-5
EP 1027883	Compound VII, p 3
EP 1027883	Comp I-VI, p 3
EP 1028120	Ex 1-5, pp 5-13
EP 1059082	Ex 1; T 1, pp 9-11
EP 1060734	T 1-3, pp 11-14
EP 1064922	Compounds 1-34, pp 6-14

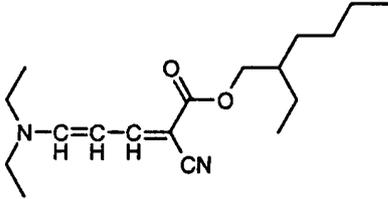
<u>Table 3: Suitable UV filter substances which can be additionally used with the UV absorbers according to the present invention</u> (Abbreviations T: table, R; row, Comp: compound, Ex: compound(s) of patent example, p: page); the generic scope of the UV absorbers is described in the left-hand column; specific compounds are indicated in the right-hand column	
EP 1081140	Ex 1-9, pp 11-16
EP 1103549	Compounds 1-76, pp 39-51
EP 1108712	4,5-Dimorpholino-3-hydroxypyridazine
EP 1123934	T 3, p 10
EP 1129695	Ex 1-7, pp 13-14
EP 1167359	Ex 1 p11 and ex 2 p 12
EP 1258481	Ex 1, pp 7,8
EP 420707 B1	Ex 3, p 13 (CAS Regno 80142-49-0)
EP 503338	T 1, pp 9-10
EP 517103	Ex 3,4,9,10 pp 6-7
EP 517104	Ex 1, T 1, pp 4-5; Ex 8, T 2, pp 6-8
EP 626950	all compounds
EP 669323	Ex 1-3, p 5
EP 780382	Ex 1-11, pp 5-7
EP 823418	Ex 1-4, pp 7-8
EP 826361	T 1, pp 5-6
EP 832641	Ex 5+6 p 7; t 2, p 8
EP 832642	Ex 22, T 3 pp, 10-15; T 4, p 16
EP 852137	T 2, pp 41-46
EP 858318	T 1, p 6
EP 863145	Ex 1-11, pp 12-18
EP 895776	Comp. in rows 48-58, p 3; R 25+33, p 5
EP 911020	T 2, p 11-12
EP 916335	T 2-4, pp 19-41
EP 924246	T 2, p 9
EP 933376	Ex 1-15, pp 10-21
EP 944624	Ex 1+2, pp13-15
EP 945125	T 3 a+b, pp 14-15
EP 967200	Ex 2; T 3-5, pp 17-20
EP 969004	Ex 5, T 1, pp 6-8

<u>Table 3: Suitable UV filter substances which can be additionally used with the UV absorbers according to the present invention</u>	
(Abbreviations T: table, R: row, Comp: compound, Ex: compound(s) of patent example, p: page); the generic scope of the UV absorbers is described in the left-hand column; specific compounds are indicated in the right-hand column	
JP 2000319629	CAS Regno. 80142-49-0, 137215-83-9, 307947-82-6
US 5635343	all compounds on pp 5-10
US 5338539	Ex 1-9, pp 3+4
US 5346691	Ex 40, p 7; T 5, p 8
US 5801244	Ex 1-5, pp 6-7
WO 0149686	Ex 1-5, pp 16-21
WO 0168047	Tables on pp 85-96
WO 0181297	Ex 1-3 pp 9-11
WO 0238537	All compounds p 3, compounds on rows 1-10 p 4
WO 9217461	Ex 1-22, pp 10-20
WO 9220690	Polymeric comp in examples 3-6
WO 9301164	T 1+2, pp 13-22
WO 9714680	Ex 1-3, p 10

<u>Table 4: Suitable UV filter substances and adjuvants which can be additionally used with the UV absorbers according to the present invention</u>		
<u>No.</u>	<u>Chemical Name</u>	<u>CAS No.</u>
1	(+/-)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one; p-methyl benzylidene camphor	36861-47-9
2	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one; benzylidene camphor	15087-24-8
3	(2-Hydroxy-4-methoxyphenyl)(4-methylphenyl)methanone	1641-17-4
4	2,4-dihydroxybenzophenone	131-56-6
5	2,2',4,4'-tetrahydroxybenzophenone	131-55-5
6	2-Hydroxy-4-methoxy benzophenone	131-57-7
7	2-Hydroxy-4-methoxy benzophenone-5-sulfonic acid	4065-45-6
8	2,2'-dihydroxy-4,4'-dimethoxybenzophenone	131-54-4
9	2,2'-Dihydroxy-4-methoxybenzophenone	131-53-3
10	Alpha-(2-oxoborn-3-ylidene)toluene-4-sulphonic acid and its salts; Mexoryl SL	56039-58-8
11	1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-	70356-09-1

Table 4: Suitable UV filter substances and adjuvants which can be additionally used with the UV absorbers according to the present invention		
No.	Chemical Name	CAS No.
	dione; avobenzone	
12	Methyl N,N,N-trimethyl-4-[(4,7,7-trimethyl-3-oxobicyclo[2,2,1]hept-2-ylidene)methyl]anilinium sulphate; Mexoryl SO	52793-97-2
22	3,3,5-Trimethyl cyclohexyl-2-hydroxy benzoate; homosalate	118-56-9
23	Isopentyl p-methoxycinnamate; isoamyl methoxy cinnamate	71617-10-2
27	Menthyl-o-aminobenzoate	134-09-8
28	Menthyl salicylate	89-46-3
29	2-Ethylhexyl 2-cyano,3,3-diphenylacrylate; Octocrylene	6197-30-4
30	2- ethylhexyl 4- (dimethylamino)benzoate	21245-02-3
31	2- ethylhexyl 4- methoxycinnamate; octyl methoxy cinnamate	5466-77-3
32	2- ethylhexyl salicylate	118-60-5
33	Benzoic acid, 4, 4', 4''- (1, 3, 5- triazine- 2, 4, 6- triyltriimino)tris-, tris(2-ethylhexyl)ester; 2,4,6-Trianiilino-(p-carbo-2'-ethylhexyl-1'-oxi)-1,3,5-triazine; octyl triazone	88122-99-0
34	4- aminobenzoic acid	150-13-0
35	Benzoic acid, 4-amino-, ethyl ester, polymer with oxirane	113010-52-9
38	2- phenyl- 1H- benzimidazole- 5- sulphonic acid; phenylbenzimidazolsulfonic acid	27503-81-7
39	2-Propenamide, N-[[4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]phenyl]methyl]-, homopolymer	147897-12-9
40	Triethanolamine salicylate	2174-16-5
41	3, 3'-(1,4-phenylenedimethylene)bis[7, 7-dimethyl- 2-oxo-bicyclo[2.2.1]heptane-1 methanesulfonic acid]; Cibafast H	90457-82-2
42	Titanium dioxide	13463-67-7
44	Zinc oxide	1314-13-2
45	2,2'-Methylene-bis-[6-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethyl-butyl)-phenol]; Tinosorb M	103597-45-1
46	2,4-bis{[4-(2-ethylhexyloxy)-2-hydroxy]-phenyl}-6-(4-methoxyphenyl)-(1,3,5)-triazine; Tinosorb S	187393-00-6
47	1H-Benzimidazole-4,6-disulfonic acid, 2,2'-(1,4-phenylene)bis-, disodium salt	180898-37-7
48	Benzoic acid, 4,4'-[[6-[[4-[[[(1,1-dimethylethyl)amino]carbonyl]phenyl]-amino]1,3,5-triazine-2,4-diyl]diimino]bis-, bis(2-ethylhexyl)ester; di-ethylhexyl butamido triazone; Uvasorb HEB	154702-15-5
49	Phenol, 2-(2H-benzotriazol-2-yl)-4-methyl-6-[2-methyl-3-[1,3,3,3-	155633-54-8

Table 4: Suitable UV filter substances and adjuvants which can be additionally used with the UV absorbers according to the present invention		
No.	Chemical Name	CAS No.
	tetramethyl-1-[(trimethylsilyloxy)disiloxanyl]propyl]-; drometrisole trisiloxane; Mexoryl XL	
50	Dimethicodiethylbenzalmalonate; Polysilicone 15; Parsol SLX	207574-74-1
51	Benzenesulfonic acid, 3-(2H-benzotriazol-2-yl)-4-hydroxy-5-(1-methylpropyl)-, monosodium salt ; Tinogard HS	92484-48-5
52	Benzoic acid, 2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester; Uvinul a plus	302776-68-7
53	1-Dodecanaminium, N-[3-[[4-(dimethylamino)benzoyl]amino]propyl]-N,N-dimethyl-, salt with 4-methylbenzenesulfonic acid (1:1); Escalol HP610	156679-41-3
54	1-Propanaminium, N,N,N-trimethyl-3-[(1-oxo-3-phenyl-2-propenyl)-amino]-, chloride	177190-98-6
55	1H-Benzimidazole-4,6-disulfonic acid, 2,2'-(1,4-phenylene)bis-	170864-82-1
56	1,3,5-Triazine, 2,4,6-tris(4-methoxyphenyl)-	7753-12-0
57	1,3,5-Triazine, 2,4,6-tris[4-[(2-ethylhexyl)oxy]phenyl]-	208114-14-1
58	1-Propanaminium, 3-[[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]amino]-N,N-diethyl-N-methyl-, methyl sulfate (salt)	340964-15-0
59	2-Propenoic acid, 3-(1H-imidazol-4-yl)-	104-98-3
60	Benzoic acid, 2-hydroxy-, [4-(1-methylethyl)phenyl]methyl ester	94134-93-7
61	1,2,3-Propanetriol, 1-(4-aminobenzoate); glyceryl PABA	136-44-7
62	Benzeneacetic acid, 3,4-dimethoxy-a-oxo-	4732-70-1
63	2-Propenoic acid, 2-cyano-3,3-diphenyl-, ethyl ester	5232-99-5
64	Anthralinic acid, p-menth-3-yl ester	134-09-8
65	2,2'-bis(1,4-phenylene)-1H-benzimidazole-4,6-disulphonic acid mono sodium salt or Disodium phenyl dibenzimidazole tetrasulfonate or Neoheliopan AP	349580-12-7,
66	1,3,5-Triazine-2,4,6-triamine, N,N'-bis[4-[5-(1,1-dimethylpropyl)-2-benzoxazolyl]phenyl]-N''-(2-ethylhexyl)- or Uvasorb K2A	288254-16-0
67	Merocyanine derivatives as described in WO 2004006878 and in IPCOM000022279D	

Table 4: Suitable UV filter substances and adjuvants which can be additionally used with the UV absorbers according to the present invention		
No.	Chemical Name	CAS No.
68		
68	sterols (cholesterol, lanosterol, phytosterols), as described in WO0341675	
69	mycosporines and/or mycosporine-like amino acids as described in WO2002039974, e.g. Helioguard 365 from Milbelle AG, isolated mycosporine like amino acids from the red alga porphyra umbilicalis (INCI: Porphyra Umbilicalis) that are encapsulated into liposomes,)	
70	alpha-lipoic-acid as described in DE 10229995	
71	synthetic organic polymers as described in EP 1371358, [0033]-[0041]	
72	phyllosilicates as described in EP 1371357 [0034]-[0037]	
73	silica compounds as described in EP1371356, [0033]-[0041]	
74	inorganic particles as described in DE10138496 [0043]-[0055]	
75	latex particles as described in DE10138496 [0027]-[0040]	
76	1H-Benzimidazole-4,6-disulfonic acid, 2,2'-(1,4-phenylene)bis-, disodium salt ; Bisimidazylate; Neo Heliopan APC	180898-37-7

Preferred cosmetic and/or dermatological compositions according to the present invention are :

- 1a. Cosmetic and/or dermatological compositions for the protection from UV radiation comprising a merocyanine derivative of formula (1) and powders having a core of at least one siloxane elastomer coated with trimethylsiloxylate and/or its derivatives as described in DE 101 57 489 from page 2, line 46 to page 4, line 6 and page 4, line 49 – 54.
- 1b. Cosmetic and/or dermatological compositions for the protection from UV radiation comprising a merocyanine derivative of formula (1) and powders having a core of at least one siloxane elastomer coated with trimethylsiloxylate and/or its derivatives and a further UV filter selected from the group of triazines, benzotriazoles, UV filters being liquid at room temperature, sulfonated, water soluble UV filters, oil soluble UV broad-

band filters and organic and/or anorganic pigments, which are preferably surface-coated as described in DE 101 57 489, § [051] – [0079].

2. Self-tanning composition comprising a cosmetic acceptable carrier:
 - (a) at least a self tanning agent; and
 - (b) at least a merocyanine derivative of formula (1) as described in EP-A-1,317,920.

3. Cosmetic and/or dermatological composition for topical use comprising in a cosmetic acceptable medium
 - (a) 0.1 – 15% b.w. of 1.4-di(3-methylidene-10-comphosulfonic) benzoic acid; and
 - (b) 0.1 – 15 % b.w. of merocyanine derivative of formula (1).As described in EP-A-1,317,919.

4. Cosmetic and/or dermatological composition for topical use, preferably for the photoprotection of the skin and/or hair comprising in a cosmetic acceptable medium
 - (a) at least an insoluble organic UV filter having a particle size from 10 nm to 5 µm as first filter as described, for example in EP-A-1,317,918 § [0025] – [0050]; and
 - (b) as second filter at least one merocyanine derivative of formula (1).

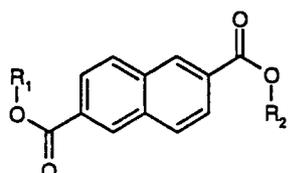
5. Cosmetic and/or dermatological composition for the protection against UV radiation with UV filters selected from a merocyanine derivative of formula (1), anorganic micro pigments and at least one siloxane elastomer selected from the group existing of siloxane elastomers obtainable either by the reaction of vinyl-terminal polymethylsiloxane and methylhydrodimethylsiloxane or by reaction of hydroxy-terminal dimethylpolysiloxane and trimethylsiloxy-terminal methylpolysiloxane in form of spheric powder or in form of gels as described in DE 101 55 865, § [0009] - [0013], [0020] – [0021] and [0045] - [0050].

6. Cosmetic and/or dermatological compositions for the protection against UV radiation comprising
 - (a) at least one merocyanine derivative of formula (1);
 - (b) at least one triazine- or benzotriazole derivative as described in WO 03/039507, pages 5 – 16; and

optionally further cosmetic actives, adjuvants and additives as described in WO 03/039507, pages 17 – 26.

7a. Cosmetic and/or dermatological compositions comprising

(a) at least one merocyanine derivative of formula (1);

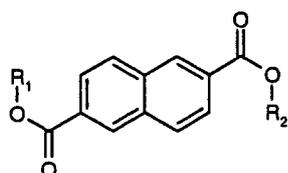
(b) at least one dialkylnaphthalate of formula , wherein

R_1 and R_2 independently from each other are branched or unbranched C_6 - C_{24} alkyls

As described in WO 03/039,506.

7b. Cosmetic and/or dermatological compositions comprising

(a) at least a merocyanine derivative of formula (1);

(b) at least a dialkylnaphthalate of formula , wherein

R_1 and R_2 independently from each other are branched or unbranched C_6 - C_{24} alkyls; and

(c) a further UV filter selected from the group of triazines, benzotriazoles, liquid UV filters and organic and/or inorganic pigments as described in WO 03/039506, page 17, line 20 and page 18 – 20.

8a. Cosmetic and/or dermatological composition comprising

(a) a merocyanine derivative of formula (1) and

(b) 8-hexadecene-1.16-dicarboxylic acid;

as described in WO 03/039,502.

8b. Cosmetic and/or dermatological composition comprising

(a) a merocyanine derivative of formula (1);

(b) 8-hexadecene-1.16-dicarboxylic acid; and

- (c) a further UV-A filter and/or broadband filter selected from the group of dibenzoylmethane derivatives, preferably 4-(tert.butyl)-4'-methoxydibenzoylmethane, phenylene-1,4-bis-(2-benzimidazolyl)-3,3'-5,5'-tetrasulfonic-bissodium salt, 1,4-di(2-oxo-10-sulfo-3-bornylidenemethyl)-benzene and the salts thereof and 2,4-bis-{4-(2-ethylhexyloxy)-2-hydroxy]-phenyl}-6-(4-methoxyphenyl)-1,3,5-triazine, wherein the filters may be present as single substances or in any combination of each substance.
9. Self-foaming, foaming, after-foaming or foamable cosmetic and/or dermatological compositions comprising
- I. an emulsifier system as described for example in WO 03/039493, pages 6 – 19, consisting of
- A. at least one emulsifier A selected from the group of totally partially or not neutralized, branched and/or unbranched, saturated and/or unsaturated C₁₀-C₄₀fatty acids;
- B at least one emulsifier B selected from the group of polyethoxylated C₁₀-C₄₀fatty acid esters having an ethoxylation degree of 5 – 50;
- C at least one co-emulsifier C selected from the group of saturated and/or unsaturated branched and/or unbranched C₁₀-C₄₀fatty alcohols;
- and
- II. until 30 % b.w., based on the overall weight of the composition, of a lipid phase comprising
- (a) one or more lipids selected from silicon oils and silicon waxes; and
- (b) one or more lipids selected from in polar lipids having a polarity ≥ 30 mM/m wherein the ratio (a) : (b) is in the range of 1:3 – 3:1; and
- (c) 0.5 – 10, preferably 0.5 – 10 % b.w. of at least one merocyanine derivative of formula (1).
10. Cosmetic and/or dermatological compositions for the protection against UV radiation comprising
- (a) at least a merocyanine derivative of formula (1); and
- (b) potassium-ethylenediaminetetramethylenephosphonate as described in EP-A-1,310,239 § [0027] – [0028].

11. Cosmetic and/or dermatological compositions for the protection against UV radiation comprising
 - (a) at least one merocyanine derivative of formula (1); and
 - (b) at least an acrylamide polymer, acrylamide copolymer, and derivatives thereof and/or an acrylamide polymer, acrylamide copolymer and derivatives thereof; as described in EP-A-1,310,239.

12. Cosmetic and/or dermatological compositions for the protection from UV radiation comprising
 - (a) at least one merocyanine derivative of formula (1); and
 - (b) imidosuccinic acid and/or derivatives thereof as described for example in EP-A-1,310,236 § [0028] – [0030].

13. Pickering emulsions comprising fine disperse systems of W/O or O/W type comprising
 - (1) an oil phase
 - (2) an aqueous phase,
 - (3) at least one type of a micronised particle, which
 - (a) have a mean particle size of < 200 nm and which
 - (b) have hydrophilic and lipophilic properties which have also amphiphilic character and are dispersible in water and in oil and which have
 - (4) at least one merocyanine derivative of formula (1)as described in EP-A-1,310,235.

14. Cosmetic and/or dermatological compositions for the protection against UV radiation producing a permanent and non-covering coloration on the skin natural bronzing comprising in a cosmetical acceptable medium at least a susceptible pigment obtained from the extraction with an organic or hydroorganic solvent in a medium of myromydetate culture of the type monascus; and at least a merocyanine derivative of formula (1): as described in EP-A-1,302,199.

15. Cosmetic and/or dermatological composition in form of an O/W emulsion comprising at least one merocyanine derivative of formula (1). The basic components of the O/W emulsion are disclosed in EP-A-1,291,012, § [0049] – [0277].

16. Cosmetic and/or dermatological composition in form of an W/O emulsion comprising at least one merocyanine derivative of formula (1). The basic components of the W/O emulsion are disclosed in EP-A-1,291,009, § [0047] – [0245].

17. Cosmetic and/or dermatological composition representing finedisperse systems of O/W type comprising

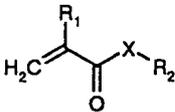
- (a) an oil phase,
- (b) an aqueous phase,
- (c) one or more stabilizers as disclosed in EP-A-1,291,007 § [0022] – [0080].
- (d) at most 2.00 % b.w. of one or more emulsifiers, and
- (e) at least one merocyanine derivative of formula (1).

Further basic components of this cosmetic or dermatological composition are disclosed in EP-A-1,291,007.

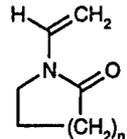
18. Cosmetics sticks comprising

- a) a lipid phase comprising at least an oil component and/or at least a wax component as described in EPA-1,290,999 § [0031] – [0058] and
- b) at least one merocyanine derivative of formula (1).

19. Cosmetic and/or dermatological composition comprising in a cosmetic acceptable medium at least a cationic polymerisate as described in DE-A-101 29 527, and at least one sun screen agent of formula (1), wherein the cationic polymerisate is obtainable by radical copolymerisation of

(a) 50 to 70 % b.w. of one or more momomers of formula (A) , wherein

X is O or NR₁; R₁ is hydrogen or C₁-C₈alkyl; and R₂ is tert.butyl;

(b) 5 to 45 % b.w. of one or more monomers of the formula B , wherein

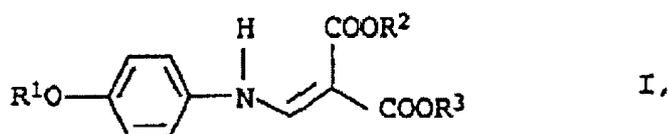
n is 1 to 3;

(c) 5 to 40 % b.w. of a monethylenic unsaturated monomer having at least an amino containing group

wherein up to 40 % b.w., based on (a), (b), (c) and (d), of the monomer (a) may be substituted by a monomer of formula A, wherein R₂ is C₂-C₂₂alkyl.

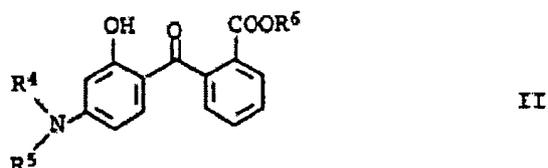
20. UV filter combination, comprising

- (a) a compound which absorbs essentially in the UVA range, and
- (b) further compounds which absorb in the UV-A-, UV-B-range and in the UV-A- and UV-B-range, is wherein the moiety in the UV-A-range
- (a) an effective amount of at least one compound of formula



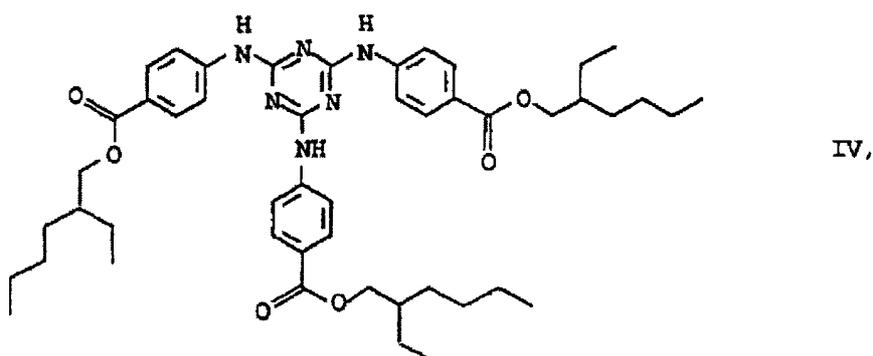
wherein R¹, R² and R³ independently from each other are C₁-C₈alkyl; and

- (b) an effective amount of one or more compounds selected from
 - ba) at least one merocyanine derivative of formula (1);
 - bb) a compound of formula

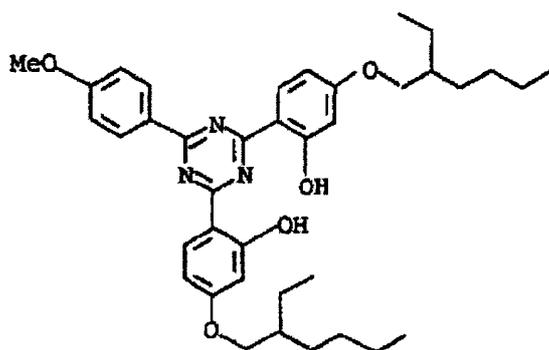


wherein R⁷ and R⁸ independently from each other are C₁-C₁₂alkyl or C₃-C₁₀cycloalkyl;

- bc) the compound of formula

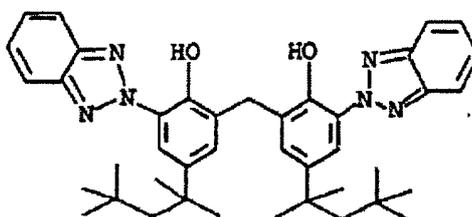


- bd) the compound of formula



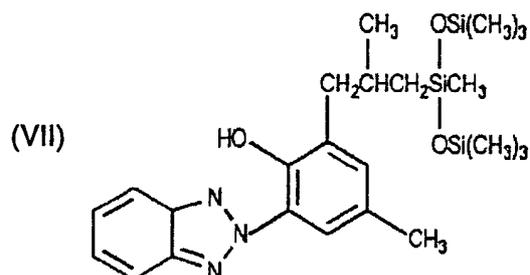
V.

b) the compound of formula

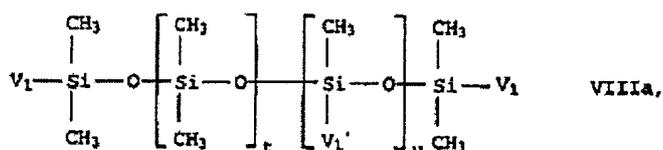


VI.

bf) the compound of formula

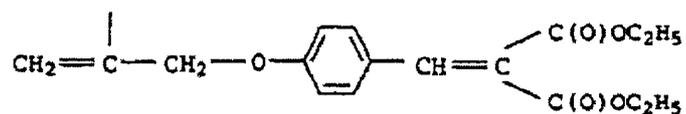


bg) the compound of formula

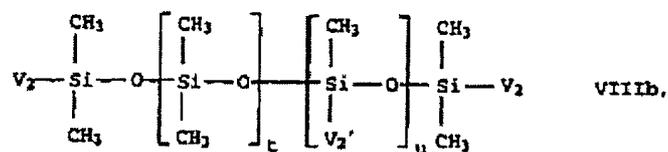


wherein

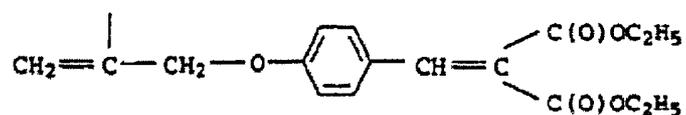
V₁' is the group of formula



V₁ is methyl or V₁' is group of formula



wherein V_2' is a group of formula

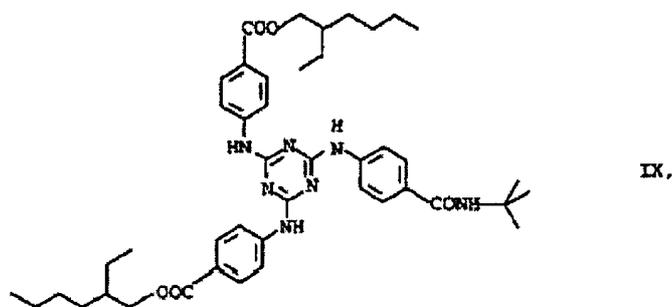


V_2 is methyl or V_2' ;

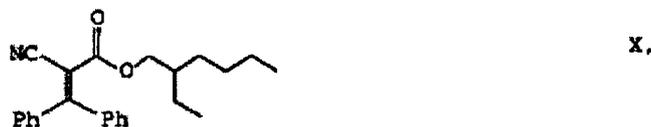
or mixtures of the compounds VIIIa and VIIIb,

wherein t is a number up to 100 and u is a value up to 20 with the proviso that u is = 0, when $V_1 = V_1'$ and/or $V_2 = V_2'$, and u has a value from 1 – 20, when V_1 is CH_3 and/or V_3 is CH_3 ;

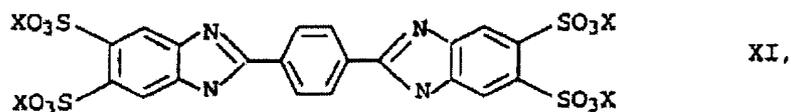
bh) a compound of formula



bi) a compound of formula

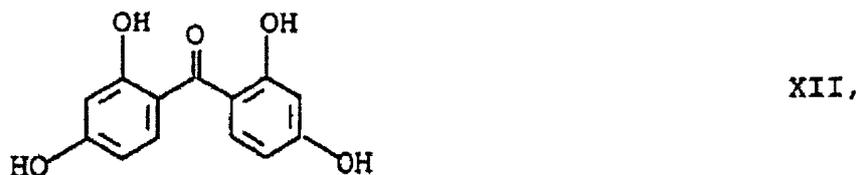


bj) a compound of formula



wherein X is hydrogen, sodium, potassium, ammonium or triethanolammonium;

bk) a compound of formula

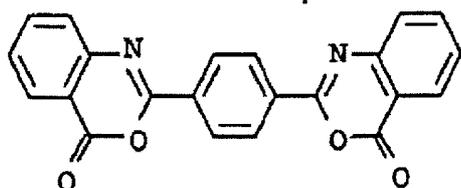


as photostable UV filter formulation for the protection of the human skin and hair from Uv radiation, optionally together with further known cosmetic UV filters.

21. Cosmetic and/or dermatological composition for the protection of the human epidermis or hair from UV radiation in the range of 280 – 400 nm, comprising in a cosmetic or pharmaceutical suitable carrier an effective amount of UV filter combinations as photostable UV filters,

wherein the effective component of the absorbing part in the UV-A range consists of

a) an effective amount of a compound of formula

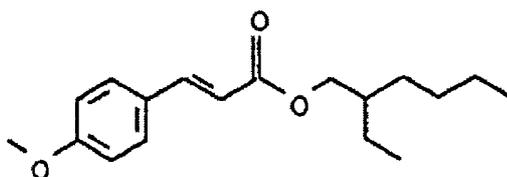


I,

and component

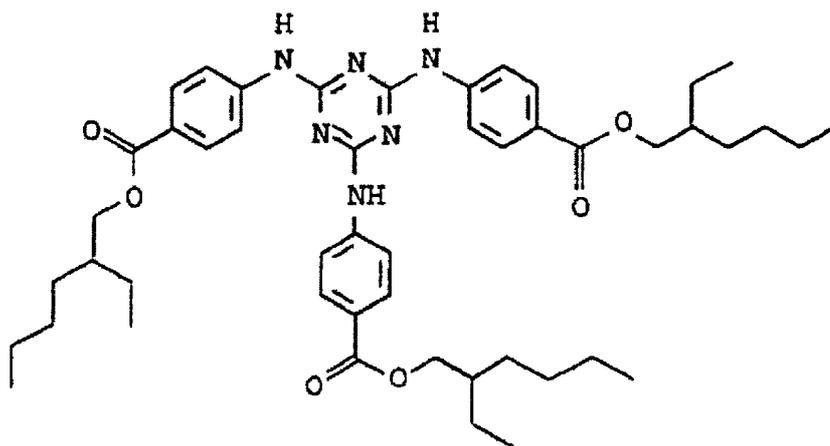
b) comprises an effective amount of one or more compounds selected from

ba) the compound of formula



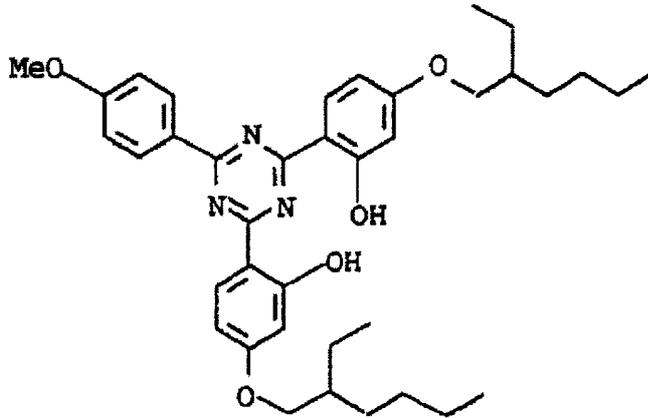
II,

bb) the compound of formula



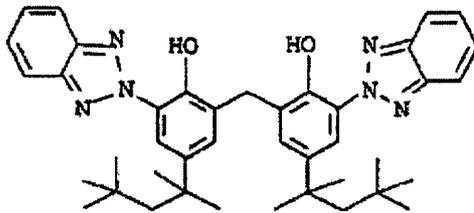
III,

bc) the compound of formula



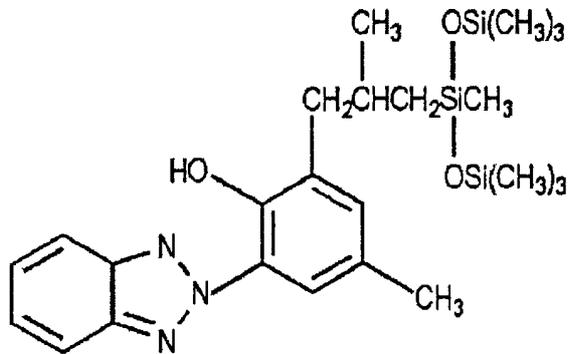
IV,

bd) the compound of formula

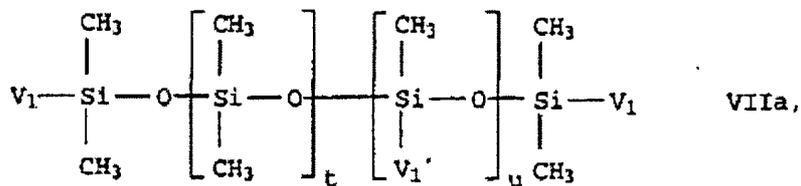


V,

be)

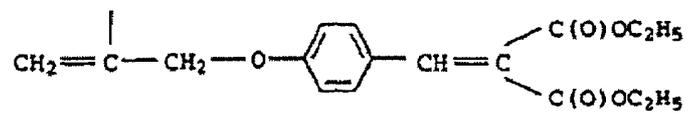


bf) an organosiloxanebenzalmalonate of formula

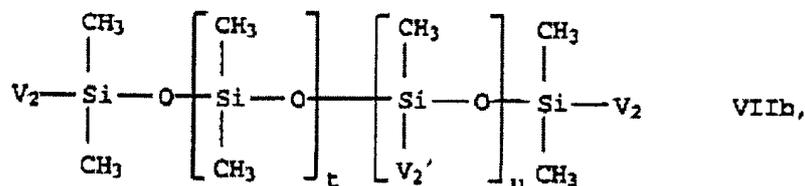


wherein

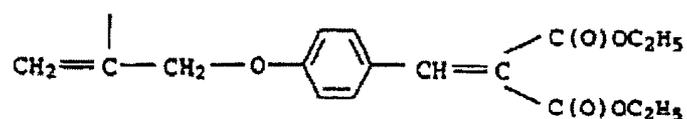
V₁' is the group of formula



V_1 is methyl or V_1' is group of formula



wherein V_2' is a group of formula

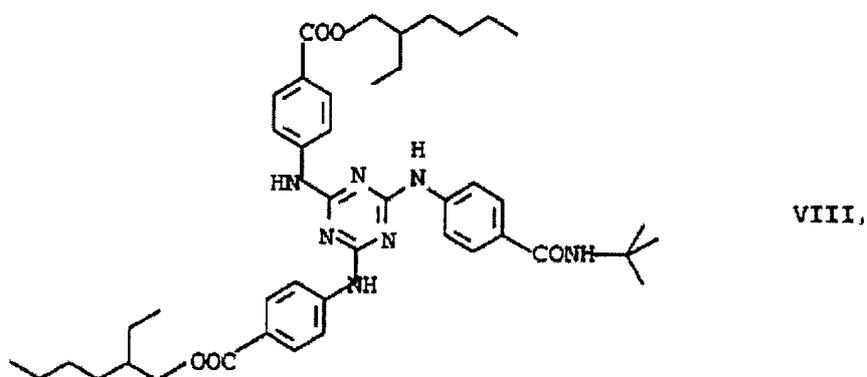


V_2 is methyl or V_2' ;

or mixtures of compounds VIIa and VIIb,

wherein t is a number up to 100 and u is a value up to 20 with the proviso that u is = 0, when $V_1 = V_1'$ and/or $V_2 = V_2'$ and u has a value from 1 – 20, when V_1 is CH_3 and/or V_2 is CH_3 ;

bg) the compound of formula



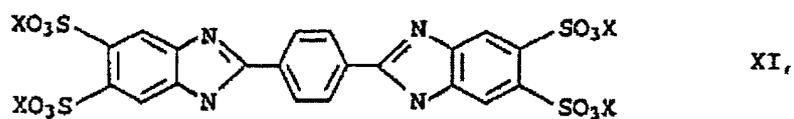
bh) the compound of formula



bi) the compound of formula

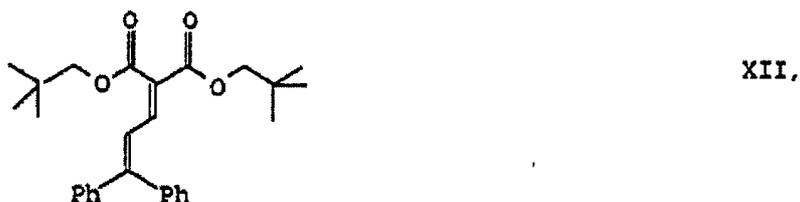


bj) a compound of formula



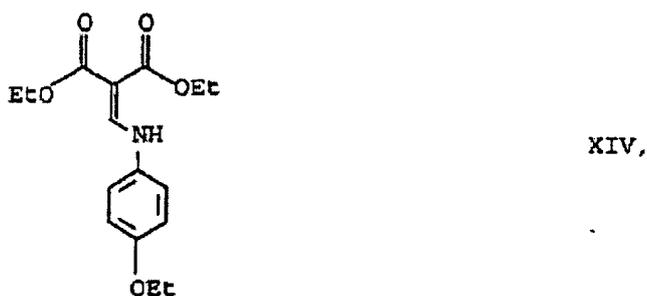
wherein X is hydrogen, sodium, potassium, ammonium or triethanolammonium;

bk) the compound of formula

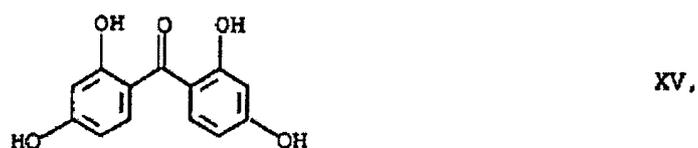


bj) the compound of formula (1)

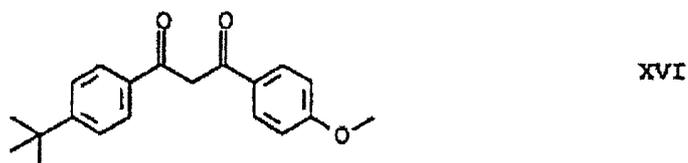
bm) the compound of formula



bn) the compound of formula



bo) the compound of formula



and

bp) tin oxide and/or titanium dioxide,

optionally together with further known cosmetic UV filters.

22. Cosmetic and/or dermatological composition for topical use, preferably for the photoprotection of the skin and/or hair comprising in a cosmetic acceptable medium

- (a) at least one dibenzoyl methane derivative as described in EP-A-1,323,413 § [0027 - 0030]
 - (b) at least one 1,3,5-triazine derivative as described in EP-A-1,323,413 § [0019 – 0027] being photosensitive in the presence of the dibenzoylmethane derivative;
 - (c) at least one merocyanine derivative of formula (1)
23. Cosmetic and/or dermatological composition for topical use, preferably for the photoprotection of the skin and/or hair comprising in a cosmetic acceptable medium
- (a) at least one dibenzoyl methane derivative as described in EP-A-1,323,412 § [0040 - 0042];
 - (b) at least one merocyanine derivative of formula (1).
24. Cosmetic and/or dermatological composition for topical use, preferably for the photoprotection of the skin and/or hair comprising in a cosmetic acceptable medium
- (a) at least one *silicie* derivative benzotriazole (first filter) as described in EP-A-1,323,411 § [0021 - 0036]
 - (b) at least one dibenzoyl methane derivative
 - (c) at least one merocyanine derivative of formula (1) (= third filter)
25. Cosmetic and/or dermatological composition comprising one or more lecithins for increasing the light protection factor and/or UVA protection as described in EP-A-1,166,759; and at least one merocyanine derivative of formula (1).
26. Cosmetic and/or dermatological composition comprising
- (a) triglyceride waxes as described in EP-A-1,000,611 to increase the UVA protection factor of cosmetic or dermatological compositions containing conventional UV-A- filters; and/or
 - (b) at least one merocyanine derivative of formula (1) that also provide protection against UV radiation with a wavelength above 355 nm.
27. Cosmetic and/or dermatological composition comprising
- (a) ethylhexyl 2-cyano-3,3-diphenylacrylate (octocrylene) as described in EP A-1,034,778; and

- (b) at least one merocyanine derivative of formula (1)
for solubilizing and for increasing the light protection factor and/or the UV-A protection performance of the merocyanine derivative of formula (1).
28. Oil-free cosmetic or dermatological composition comprising
- (a) at least one merocyanine derivative of formula (1) and
 - (b) at least one UV filter liquid at room temperature as described in EP-A-1,074,241
29. OW emulsion, preferably OW-microemulsion or O/W/O-emulsions or O/W/O'-emulsions comprising
- (a) water phase
 - (b) optionally usual water soluble or dispersible substances,
 - (c) an oil phase, wherein at least one cosmetic or dermatologic UV filter substance selected from at least one merocyanine derivative of formula (1) is present in suspended form,
 - (d) at least one emulsifier (A) selected from emulsifiers with the following properties
 - the lipophilic property is either dependent on the pH inasmuch rising or lowering the pH the lipophilic property will increase or decrease being insubstantial which of both alternatives of changing the lipophilic properties by rising or lowering the pH is effected and/or
 - the lipophilic property is dependent on the temperature, inasmuch the lipophilic properties will increase with rising temperature and the hydrophilic properties will increase with rising temperature,
 - (e) and further substances which are optionally soluble or dispersible in the oil phase, preferably those substances which are outside the definition of emulsifier (A), preferably those substances which predominantly act as W/O emulsifiers.
30. Cosmetic light protection formulation comprising
- (a) one or more amide oils as described in DE-A-19942714; and
 - (b) at least one merocyanine derivative of formula (1)

The cosmetic or pharmaceutical preparations may be, for example, creams, gels, lotions, alcoholic and aqueous/alcoholic solutions, emulsions, wax/fat compositions, stick preparations, powders or ointments. In addition to the above-mentioned UV filters, the cosmetic or pharmaceutical preparations may contain further adjuvants as described below.

As water- and oil-containing emulsions (e.g. W/O, O/W, O/W/O and W/O/W emulsions or microemulsions) the preparations contain, for example, from 0.1 to 30 % by weight, preferably from 0.1 to 15 % by weight and especially from 0.5 to 10 % by weight, based on the total weight of the composition, of one or more UV absorbers, from 1 to 60 % by weight, especially from 5 to 50 % by weight and preferably from 10 to 35 % by weight, based on the total weight of the composition, of at least one oil component, from 0 to 30 % by weight, especially from 1 to 30 % by weight and preferably from 4 to 20 % by weight, based on the total weight of the composition, of at least one emulsifier, from 10 to 90 % by weight, especially from 30 to 90 % by weight, based on the total weight of the composition, of water, and from 0 to 88.9 % by weight, especially from 1 to 50 % by weight, of further cosmetically acceptable adjuvants.

The compounds of formula (1) may also be used as as an anti-wrinkle perception modifier (see Example 29). This is a futher object of the present invention.

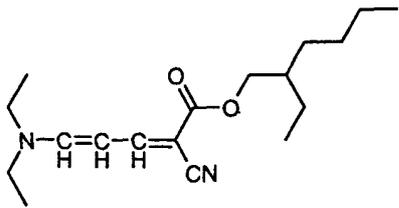
Preferably, the following combinations comprising UV absorbers are of special interest:

<u>No.</u>	<u>A</u>	<u>CAS No. of A</u>	<u>B</u> UV absorber dispersion comprising the compound of formula MC 02, MC 06, MC 51 or MC 55
Comb 001	(+/-)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one; p-methyl benzylidene camphor	36861-47-9	X
Comb 002	1,7,7-trimethyl-3-(phenylmethylidene)-bicyclo[2.2.1]heptan-2-one; benzylidene camphor	15087-24-8	X
Comb 003	(2-Hydroxy-4-methoxyphenyl)(4-methylphenyl)methanone	1641-17-4	X
Comb 004	2,4-dihydroxybenzophenone	131-56-6	X
Comb 005	2,2',4,4'-tetrahydroxybenzophenone	131-55-5	X
Comb	2-Hydroxy-4-methoxy benzophenone;	131-57-7	X

<u>No.</u>	<u>A</u>	<u>CAS No. of A</u>	<u>B</u> UV absorber dispersion comprising the compound of formula MC 02, MC 06, MC 51 or MC 55
006			
Comb 007	2-Hydroxy-4-methoxy benzophenone-5-sulfonic acid	4065-45-6	X
Comb 008	2,2'-dihydroxy-4,4'-dimethoxybenzophenone	131-54-4	X
Comb 009	2,2'-Dihydroxy-4-methoxybenzophenone	131-53-3	X
Comb 010	Alpha-(2-oxoborn-3-ylidene)toluene-4-sulphonic acid and its salts; Mexoryl SL	56039-58-8	X
Comb 011	1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione; avobenzone	70356-09-1	X
Comb 012	Methyl N,N,N-trimethyl-4-[(4,7,7-trimethyl-3-oxobicyclo[2,2,1]hept-2-ylidene)methyl]anilinium sulphate; Mexoryl SO	52793-97-2	X
Comb 013	3,3,5-Trimethyl cyclohexyl-2-hydroxy benzoate; homosalate	118-56-9	X
Comb 014	Isopentyl p-methoxycinnamate; isoamyl methoxy cinnamate	71617-10-2	X
Comb 015	Menthyl-o-aminobenzoate	134-09-8	X
Comb 016	Menthyl salicylate	89-46-3	X
Comb 017	2-Ethylhexyl 2-cyano,3,3-diphenylacrylate; octocrylene	6197-30-4	X
Comb 018	2- ethylhexyl 4-(dimethylamino)benzoate	21245-02-3	X

<u>No.</u>	<u>A</u>	<u>CAS No. of A</u>	<u>B</u> UV absorber dispersion comprising the compound of formula MC 02, MC 06, MC 51 or MC 55
Comb 019	2- ethylhexyl 4-methoxycinnamate; octyl methoxy cinnamate	5466-77-3	X
Comb 020	2- ethylhexyl salicylate	118-60-5	X
Comb 021	Benzoic acid,4,4',4''-(1, 3, 5- triazine-2,4,6-triyltriimino)tris-, tris(2-ethylhexyl)-ester; 2,4,6-Trianiilino-(p-carbo-2'-ethylhexyl-1'-oxi)-1,3,5-triazine; Octyl Triazone	88122-99-0	X
Comb 022	4- aminobenzoic acid	150-13-0	X
Comb 023	Benzoic acid, 4-amino-, ethyl ester, polymer with oxirane	113010-52-9	X
Comb 024	2-phenyl-1H- benzimidazole-5-sulphonic acid; phenylbenzimidazolsulfonic acid	27503-81-7	X
Comb 025	2-Propenamamide, N-[[4-[(4,7,7-trimethyl-3-oxobicyclo[2.2.1]hept-2-ylidene)methyl]-phenyl]methyl]-, homopolymer	147897-12-9	X
Comb 026	Triethanolamine salicylate	2174-16-5	X
Comb 027	3, 3'-(1, 4- phenylenedimethylene)bis-[7,7-dimethyl-2- oxobicyclo[2.2.1]heptane-1methanesulfonic acid]; Cibafast H	90457-82-2	X
Comb 028	Titanium dioxide	13463-67-7	X
Comb 029	Zinc oxide	1314-13-2	X
Comb 030	2,2'-Methylene-bis-[6-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)-phenol]; Tinosorb M	103597-45-1	X
Comb 031	2,4-bis[[4-(2-ethylhexyloxy)-2-hydroxy]-phenyl]-6-(4-methoxyphenyl)-(1,3,5)-triazine; Tinosorb S	187393-00-6	X

<u>No.</u>	<u>A</u>	<u>CAS No. of A</u>	<u>B</u> UV absorber dispersion comprising the compound of formula MC 02, MC 06, MC 51 or MC 55
Comb 032	1H-Benzimidazole-4,6-disulfonic acid, 2,2'-(1,4-phenylene)bis-, disodium salt	180898-37-7	X
Comb 033	Benzoic acid, 4,4'-[[6-[[4-[[[(1,1-dimethyl-ethyl)amino]carbonyl]phenyl]amino]1,3,5-triazine-2,4-diyl]diimino]bis-, bis(2-ethylhexyl)ester; diethylhexyl butamido triazone; Uvasorb HEB	154702-15-5	X
Comb 034	Phenol, 2-(2H-benzotriazol-2-yl)-4-methyl-6-[2-methyl-3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]propyl]-; drometrizole trisiloxane; Mexoryl XL	155633-54-8	X
Comb 035	Dimethicodiethylbenzalmalonate; Polysilicone 15; Parsol SLX	207574-74-1	X
Comb 036	Benzenesulfonic acid, 3-(2H-benzotriazol-2-yl)-4-hydroxy-5-(1-methylpropyl)-, monosodium salt ; Tinogard HS	92484-48-5	X
Comb 037	Benzoic acid, 2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester; Uvinul a plus	302776-68-7	X
Comb 038	1-Dodecanaminium, N-[3-[[4-(dimethylamino)benzoyl]amino]propyl]N,N-dimethyl-, salt with 4-methylbenzenesulfonic acid (1:1); Escalol HP610	156679-41-3	X
Comb 039	1-Propanaminium, N,N,N-trimethyl-3-[(1-oxo-3-phenyl-2-propenyl)amino]-, chloride	177190-98-6	X
Comb 040	1H-Benzimidazole-4,6-disulfonic acid, 2,2'-(1,4-phenylene)bis-	170864-82-1	X
Comb 041	1,3,5-Triazine, 2,4,6-tris(4-methoxyphenyl)-	7753-12-0	X
Comb 042	1,3,5-Triazine, 2,4,6-tris[4-[(2-ethylhexyl)oxy]phenyl]- (Rinosorb S)	208114-14-1	X
Comb	1-Propanaminium, 3-[[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-	340964-15-0	X

<u>No.</u>	<u>A</u>	<u>CAS No. of A</u>	<u>B</u> UV absorber dispersion comprising the compound of formula MC 02, MC 06, MC 51 or MC 55
043	hydroxyphenyl]-1-oxopropyl]amino]-N,N-diethyl-N-methyl-, methyl sulfate (salt)		
Comb 044	2-Propenoic acid, 3-(1H-imidazol-4-yl)-	104-98-3	X
Comb 045	Benzoic acid, 2-hydroxy-, [4-(1-methyl-ethyl)phenyl]methyl ester	94134-93-7	X
Comb 046	1,2,3-Propanetriol, 1-(4-aminobenzoate); glyceryl PABA	136-44-7	X
Comb 047	Benzeneacetic acid, 3,4-dimethoxy-a-oxo-	4732-70-1	X
Comb 048	2-Propenoic acid, 2-cyano-3,3-diphenyl-, ethyl ester	5232-99-5	X
Comb 049	Anthralinic acid, p-menth-3-yl ester	134-09-8	X
Comb 050	2,2'-bis(1,4-phenylene)-1H-benzimidazole-4,6-disulphonic acid mono sodium salt or Disodium phenyl dibenzimidazole tetrasulfonate (Neoheliopan AP)	349580-12-7,	X
Comb 051	1,3,5-Triazine-2,4,6-triamine, N,N'-bis[4-[5-(1,1-dimethylpropyl)-2-benzoxazolyl]-phenyl]-N''-(2-ethylhexyl)- (Uvasorb K2A)	288254-16-0	X
Comb 052	Merocyanine derivatives as described in WO 2004006878 and in IPCOM000022279D		X
Comb 053			X
Comb 054	sterols (cholesterol, lanosterol, phytosterols), as described in WO0341675		X

<u>No.</u>	<u>A</u>	<u>CAS No. of A</u>	<u>B</u> UV absorber dispersion comprising the compound of formula MC 02, MC 06, MC 51 or MC 55
Comb 55	mycosporines and/or mycosporine-like amino acids as described in WO2002039974, e.g. Helioguard 365 from Milbelle AG, isolated mycosporine like amino acids from the red alga porphyra umbilicalis (INCI: Porphyra Umbilicalis) that are encapsulated into liposomes,)		X
Comb 056	alpha-lipoic-acid as described in DE 10229995		X
Comb 057	synthetic organic polymers as described in EP 1371358, [0033]-[0041]		X
Comb 058	phyllosilicates as described in EP 1371357 [0034]-[0037]		X
Comb 059	silica compounds as described in EP1371356, [0033]-[0041]		X
Comb 060	inorganic particles as described in DE10138496 [0043]-[0055]		X
Comb 061	latex particles as described in DE10138496 [0027]-[0040]		X

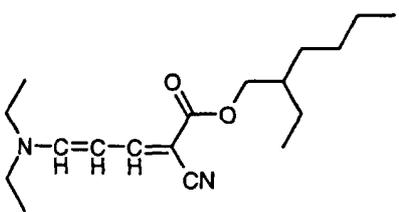
Furthermore, the following specific UV filter combinations are of specific interest:

<u>No.</u>	<u>A</u>	<u>CAS No. of A</u>	<u>B</u> UV absorber dispersion comprising the compound of formula MC 02, MC 06, MC 51 or MC 55
Comb 062	(+/-)-1,7,7-trimethyl-3-[(4-methylphenyl)-methylene]bicyclo[2.2.1]heptan-2-one; p-methyl benzylidene camphor	36861-47-9	X

No.	A	CAS No. of A	UV absorber dispersion comprising the compound of formula MC 02, MC 06, MC 51 or MC 55
Comb 063	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one; benzylidene camphor	15087-24-8	X
Comb 064	(2-Hydroxy-4-methoxyphenyl)(4-methylphenyl)methanone	1641-17-4	X
Comb 065	2,4-dihydroxybenzophenone	131-56-6	X
Comb 066	2,2',4,4'-tetrahydroxybenzophenone	131-55-5	X
Comb 067	2-Hydroxy-4-methoxy benzophenone;	131-57-7	X
Comb 068	2-Hydroxy-4-methoxy benzophenone-5-sulfonic acid	4065-45-6	X
Comb 069	2,2'-dihydroxy-4,4'-dimethoxybenzophenone	131-54-4	X
Comb 070	2,2'-Dihydroxy-4-methoxybenzophenone	131-53-3	X
Comb 071	Alpha-(2-oxoborn-3-ylidene)toluene-4-sulfonic acid and its salts; Mexoryl SL	56039-58-8	X
Comb 072	1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione; avobenzone	70356-09-1	X
Comb 073	Methyl N,N,N-trimethyl-4-[(4,7,7-trimethyl-3-oxobicyclo[2,2,1]hept-2-ylidene)methyl]-anilinium sulphate; Mexoryl SO	52793-97-2	X
Comb 074	3,3,5-Trimethyl cyclohexyl-2-hydroxy benzoate; homosalate	118-56-9	X
Comb 075	Isopentyl p-methoxycinnamate; isoamyl methoxy cinnamate	71617-10-2	X
Comb 076	Menthyl-o-aminobenzoate	134-09-8	X
Comb 077	Menthyl salicylate	89-46-3	X
Comb 078	2-Ethylhexyl 2-cyano,3,3-diphenylacrylate; octocrylene	6197-30-4	X
Comb 079	2- ethylhexyl 4-(dimethylamino)benzoate	21245-02-3	X
Comb 080	2- ethylhexyl 4-methoxycinnamate; octyl methoxy cinnamate	5466-77-3	X
Comb 081	2- ethylhexyl salicylate	118-60-5	X

No.	A	CAS No. of A	UV absorber dispersion comprising the compound of formula MC 02, MC 06, MC 51 or MC 55
Comb 082	Benzoic acid,4,4',4''-(1, 3, 5- triazine-2,4,6-triyltriimino)tris-,tris(2-ethylhexyl)ester;2,4,6-Trianylino-(p-carbo-2'-ethylhexyl-1'-oxi)-1,3,5-triazine; octyl triazone	88122-99-0	X
Comb 083	4- aminobenzoic acid	150-13-0	X
Comb 084	Benzoic acid, 4-amino-,ethyl ester, polymer with oxirane	113010-52-9	X
Comb 085	2-phenyl-1H- benzimidazole-5-sulphonic acid; phenylbenzimidazolsulfonic acid	27503-81-7	X
Comb 086	2-Propenamamide, N-[[4-[(4,7,7-trimethyl-3-oxo-bicyclo[2.2.1]hept-2-ylidene)methyl]phenyl]-methyl]-, homopolymer	147897-12-9	X
Comb 087	Triethanolamine salicylate	2174-16-5	X
Comb 088	3, 3'-(1, 4-phenylenedimethylene)bis[7,7-dimethyl-2-oxo-bicyclo[2.2.1]heptane-1-methanesulfonic acid]; Cibafast H	90457-82-2	X
Comb 089	Titanium dioxide	13463-67-7	X
Comb 090	Zinc oxide	1314-13-2	X
Comb 091	2,2'-Methylene-bis-[6-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)-phenol]; Tinosorb M	103597-45-1	X
Comb 092	2,4-bis[[4-(2-ethylhexyloxy)-2-hydroxy]-phenyl]-6-(4-methoxyphenyl)-(1,3,5)-triazine; Tinosorb S	187393-00-6	X
Comb 093	1H-Benzimidazole-4,6-disulfonic acid, 2,2'-(1,4-phenylene)bis-, disodium salt	180898-37-7	X
Comb 094	Benzoic acid, 4,4'-[[6-[[4-[[[(1,1-dimethylethyl)-amino]carbonyl]phenyl]amino]1,3,5-triazine-2,4-diyl]diimino]bis-, bis(2-ethylhexyl)ester; diethylhexyl butamido triazone; Uvasorb HEB	154702-15-5	X
Comb 095	Phenol, 2-(2H-benzotriazol-2-yl)-4-methyl-6-[2-methyl-3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]propyl]-; drometrizole trisiloxane; Mexoryl XL	155633-54-8	X
Comb 096	Dimethicodiethylbenzalmalonate; Polysilicone 15; Parsol SLX	207574-74-1	X

No.	A	CAS No. of A	UV absorber dispersion comprising the compound of formula MC 02, MC 06, MC 51 or MC 55
Comb 097	Benzenesulfonic acid, 3-(2H-benzotriazol-2-yl)-4-hydroxy-5-(1-methylpropyl)-, monosodium salt ; Tinogard HS	92484-48-5	X
Comb 098	Benzoic acid, 2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester; Uvinul a plus	302776-68-7	X
Comb 099	1-Dodecanaminium, N-[3-[[4-(dimethylamino)benzoyl]amino]propyl]N,N-dimethyl-, salt with 4-methylbenzenesulfonic acid (1:1) (Escalol HP610)	156679-41-3	X
Comb 100	1-Propanaminium, N,N,N-trimethyl-3-[(1-oxo-3-phenyl-2-propenyl)amino]-, chloride	177190-98-6	X
Comb 101	1H-Benzimidazole-4,6-disulfonic acid, 2,2'-(1,4-phenylene)bis-	170864-82-1	X
Comb 102	1,3,5-Triazine, 2,4,6-tris(4-methoxyphenyl)-	7753-12-0	X
Comb 103	1,3,5-Triazine, 2,4,6-tris[4-[(2-ethylhexyl)oxy]phenyl]- (Tinosorb S)	208114-14-1	X
Comb 104	1-Propanaminium, 3-[[3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxopropyl]amino]-N,N-diethyl-N-methyl-, methyl sulfate (salt)	340964-15-0	X
Comb 105	2-Propenoic acid, 3-(1H-imidazol-4-yl)-	104-98-3	X
Comb 106	Benzoic acid, 2-hydroxy-, [4-(1-methylethyl)phenyl]methyl ester	94134-93-7	X
Comb 107	1,2,3-Propanetriol, 1-(4-aminobenzoate); glyceryl PABA	136-44-7	X
Comb 108	Benzeneacetic acid, 3,4-dimethoxy-a-oxo-	4732-70-1	X
Comb 109	2-Propenoic acid, 2-cyano-3,3-diphenyl-, ethyl ester	5232-99-5	X
Comb 110	Anthralinic acid, p-menth-3-yl ester	134-09-8	X
Comb 111	2,2'-bis(1,4-phenylene)-1H-benzimidazole-4,6-disulphonic acid mono sodium salt or Disodium phenyl dibenzimidazole tetrasulfonate or Neoheliopan AP	349580-12-7,	X
Comb 112	1,3,5-Triazine-2,4,6-triamine, N,N'-bis[4-[5-(1,1-dimethylpropyl)-2-benzoxazolyl]phenyl]-	288254-16-0	X

No.	A	CAS No. of A	UV absorber dispersion comprising the compound of formula MC 02, MC 06, MC 51 or MC 55
	N ^o -(2-ethylhexyl)- (Uvasorb K2A)		
Comb 113	Merocyanine derivatives as described in WO 2004006878 and IPCOM000022279D		X
Comb 114			X
Comb 115	sterols (cholesterol, lanosterol, phytosterols), as described in WO0341675		X
Comb 116	mycosporines and/or mycosporine-like amino acids as described in WO2002039974, e.g. Helioguard 365 from Milbelle AG, isolated mycosporine like amino acids from the red alga porphyra umbilicalis (INCI: Porphyra Umbilicalis) that are encapsulated into liposomes,)		X
Comb 117	alpha-lipoic-acid as described in DE 10229995		X
Comb 118	synthetic organic polymers as described in EP 1371358, [0033]-[0041]		X
Comb 119	phyllosilicates as described in EP 1371357 [0034]-[0037]		X
Comb 120	silica compounds as described in EP1371356, [0033]-[0041]		X
Comb 121	inorganic particles as described in DE10138496 [0043]-[0055]		X
Comb 122	latex particles as described in DE10138496 [0027]-[0040]		X
Comb 123	micronized compound of formula (6)		X

Furthermore, the following specific UV filter combinations are of specific interest:

No.	UV filter (A)	UV filter (B)	UV filter (C)
Comb 124	2- ethylhexyl 4- methoxy-cinnamate; octyl methoxy cinnamate	micronized UV absorber of formula (103)	micronized UV absorber of formula MC 02 or MC 06
Comb 125	2- ethylhexyl 4- methoxycinnamate; octyl methoxy cinnamate	Benzoic acid, 2-[4-(diethyl-amino)-2-hydroxybenzoyl]-, hexyl ester; Uvinul a plus	micronized UV absorber of formula MC 02 or MC 06
Comb 126	2- ethylhexyl 4-methoxy-cinnamate; octyl methoxy cinnamate	Benzoic acid, 2-[4-(diethyl-amino)-2-hydroxybenzoyl]-, hexyl ester; Uvinul a plus	micronized UV absorber of formula MC 02 or MC 06
Comb 127	2-ethylhexyl 4-methoxy-cinnamate; octyl methoxy cinnamate	Benzoic acid, 4,4'-[[6-[[4-[[[(1,1-dimethylethyl)amino]carbonyl]phenyl]amino]1,3,5-triazine-2,4-diyl]diimino]bis-, bis(2-ethylhexyl)ester; diethylhexyl butamido triazone (Uvasorb HEB)	micronized UV absorber of formula MC 02 or MC 06
Comb 128	2- ethylhexyl 4-methoxy-cinnamate; octyl methoxy cinnamate	2,2'-bis(1,4-phenylene)-1H-benzimidazole-4,6-disulphonic acid mono sodium salt or Disodium phenyl dibenzimidazole tetrasulfonate or Neoheliopan AP	micronized UV absorber of formula MC 02 or MC 06
Comb 129	2- ethylhexyl 4-methoxy-cinnamate; octyl methoxy cinnamate	2-Ethylhexyl 2-cyano,3,3-diphenylacrylate; octocrylene	micronized UV absorber of formula MC 02 or MC 06
Comb 130	2- ethylhexyl 4-methoxy-cinnamate; octyl methoxy cinnamate	Benzoic acid, 4, 4', 4''-(1, 3, 5-triazine-2,4,6-triyltriimino)tris-, tris(2-ethylhexyl)ester; 2,4,6-Trianiilino-(p-carbo-2'-ethylhexyl-1'-oxi)-1,3,5-triazine; octyl triazone	micronized UV absorber of formula MC 02 or MC 06
Comb 131	2- ethylhexyl 4-methoxy-cinnamate; octyl methoxy cinnamate	2-phenyl-1H- benzimidazole-5-sulphonic acid; phenylbenzimidazolsulfonic acid	micronized UV absorber of formula MC 02 or MC 06
Comb 132	2- ethylhexyl 4-methoxy-cinnamate; octyl methoxy cinnamate	1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione; avobenzone	micronized UV absorber of formula MC 02 or MC 06
Comb 133	2- ethylhexyl 4-methoxy-cinnamate; octyl methoxy cinnamate	Phenol, 2-(2H-benzotriazol-2-yl)-4-methyl-6-[2-methyl-3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]prop	micronized UV absorber of formula MC 02 or MC 06

No.	UV filter (A)	UV filter (B)	UV filter (C)
		yl]-; drometrizole trisiloxane; Mexoryl XL	
Comb 134	2- ethylhexyl 4-methoxycinnamate; octyl methoxy cinnamate	Dimethicodiethylbenzalmalonate; Polysilicone 15; Parsol SLX	micronized UV absorber of formula MC 02 or MC 06
Comb 135	2- ethylhexyl 4-methoxycinnamate; octyl methoxy cinnamate	2,2'-Methylene-bis-[6-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)-phenol]; Tinosorb M	micronized UV absorber of formula MC 02 or MC 06
Comb 136	2- ethylhexyl 4-methoxycinnamate; octyl methoxy cinnamate	2,4-bis[[4-(2-ethylhexyloxy)-2-hydroxy]-phenyl]-6-(4-methoxyphenyl)-(1,3,5)-triazine; Tinosorb S	micronized UV absorber of formula MC 02 or MC 06
Comb 137	2,4-bis[[4-(2-ethylhexyloxy)-2-hydroxy]-phenyl]-6-(4-methoxyphenyl)-(1,3,5)-triazine; Tinosorb S	2,2'-Methylene-bis-[6-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)-phenol]; Tinosorb M	micronized UV absorber of formula MC 02 or MC 06
Comb 138	Benzoic acid, 2-[4-(diethylamino)-2-hydroxybenzoyl]-, hexyl ester; Uvinul a plus	1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione; avobenzone	micronized UV absorber of formula MC 02 or MC 06
Comb 139	2,4-bis[[4-(2-ethylhexyloxy)-2-hydroxy]-phenyl]-6-(4-methoxyphenyl)-(1,3,5)-triazine; Tinosorb S	1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)propane-1,3-dione; avobenzone	micronized UV absorber of formula MC 02 or MC 06
Comb 140	1-[4-(1,1-dimethylethyl)-phenyl]-3-(4-methoxyphenyl)propane-1,3-dione; avobenzone	2,2'-bis(1,4-phenylene)-1H-benzimidazole-4,6-disulphonic acid mono sodium salt or Disodium phenyl dibenzimidazole tetrasulfonate or Neoheliopan AP	micronized UV absorber of formula MC 02 or MC 06

The cosmetic or pharmaceutical preparations may be, for example, creams, gels, lotions, alcoholic and aqueous/alcoholic solutions, emulsions, wax/fat compositions, stick preparations, powders or ointments. In addition to the above mentioned UV filters, the cosmetic or pharmaceutical preparations may contain further adjuvants as described below.

As water- and oil-containing emulsions (e.g. W/O, O/W, O/W/O and W/O/W emulsions or microemulsions) the preparations contain, for example, from 0.1 to 30 % by weight, preferably from 0.1 to 15 % by weight and especially from 0.5 to 10 % by weight, based on the

total weight of the composition, of one or more UV absorbers, from 1 to 60 % by weight, especially from 5 to 50 % by weight and preferably from 10 to 35 % by weight, based on the total weight of the composition, of at least one oil component, from 0 to 30 % by weight, especially from 1 to 30 % by weight and preferably from 4 to 20 % by weight, based on the total weight of the composition, of at least one emulsifier, from 10 to 90 % by weight, especially from 30 to 90 % by weight, based on the total weight of the composition, of water, and from 0 to 88.9 % by weight, especially from 1 to 50 % by weight, of further cosmetically acceptable adjuvants.

The cosmetic or pharmaceutical compositions/preparations according to the invention may also contain one or one more additional compounds as described below.

Fatty alcohols

Guerbet alcohols based on fatty alcohols having from 6 to 18, preferably from 8 to 10 carbon atoms including cetyl alcohol, stearyl alcohol, cetearyl alcohol, oleyl alcohol, octyldodecanol, benzoate of C₁₂-C₁₅ alcohols, acetylated lanolin alcohol, etc..

Esters of fatty acids

Esters of linear C₆-C₂₄ fatty acids with linear C₃-C₂₄ alcohols, esters of branched C₆-C₁₃ carboxylic acids with linear C₆-C₂₄ fatty alcohols, esters of linear C₆-C₂₄ fatty acids with branched alcohols, especially 2-ethylhexanol, esters of hydroxycarboxylic acids with linear or branched C₆-C₂₂ fatty alcohols, especially dioctyl malates, esters of linear and/or branched fatty acids with polyhydric alcohols (for example propylene glycol, dimer diol or trimer triol) and/or Guerbet alcohols, for example caproic acid, caprylic acid, 2-ethylhexanoic acid, capric acid, lauric acid, isotridecanoic acid, myristic acid, palmitic acid, palmitoleic acid, stearic acid, isostearic acid, oleic acid, elaidic acid, petroselinic acid, linoleic acid, linolenic acid, elaeostearic acid, arachidic acid, gadoleic acid, behenic acid and erucic acid and technical-grade mixtures thereof (obtained, for example, in the pressure removal of natural fats and oils, in the reduction of aldehydes from Roelen's oxosynthesis or in the dimerisation of unsaturated fatty acids) with alcohols, for example, isopropyl alcohol, caproic alcohol, capryl alcohol, 2-ethylhexyl alcohol, capric alcohol, lauryl alcohol, isotridecyl alcohol, myristyl alcohol, cetyl alcohol, palmoleyl alcohol, stearyl alcohol, isostearyl alcohol, oleyl alcohol, elaidyl alcohol, petroselinyl alcohol, linoyl alcohol, linolenyl alcohol, elaeostearyl alcohol, arachidyl alcohol, gadoleyl alcohol, behenyl alcohol, erucyl alcohol and brassidyl alcohol and technical-grade

mixtures thereof (obtained, for example, in the high-pressure hydrogenation of technical-grade methyl esters based on fats and oils or aldehydes from Roelen's oxosynthesis and as monomer fractions in the dimerisation of unsaturated fatty alcohols).

Examples of such ester oils are isopropylmyristate, isopropylpalmitate, isopropylstearate, isopropyl isostearate, isopropyloleate, n-butylstearate, n-hexyllaurate, n-decyloleate, isooctylstearate, iso-nonylstearate, isononyl isononanoate, 2-ethylhexylpalmitate, 2-hexyllaurate, 2-hexyldecylstearate, 2-octyldodecylpalmitate, oleyloleate, oleylerucate, erucyloleate, erucyl-erucate, cetearyl octanoate, cetyl palmitate, cetyl stearate, cetyl oleate, cetyl behenate, cetyl acetate, myristyl myristate, myristyl behenate, myristyl oleate, myristyl stearate, myristyl palmitate, myristyl lactate, propylene glycol dicaprylate/caprinate, stearyl heptanoate, diisostearyl malate, octyl hydroxystearate, etc..

Other adjuvants

alpha glucosylrutin (CAS No. 130603-71-3), 2-butyloctyl o-hydroxybenzoate (CAS No. 190085-41-7), vitamin E (CAS No. 1406-18-4), , vitamin E acetate (CAS No. 58-95-7), diethylhexyl 2,6- naphthalate, di-n-butyl adipate, di(2-ethylhexyl)-adipate, di(2-ethylhexyl)-succinate and diisotridecyl acelaat, and also diol esters, such as ethylene glycol dioleate, ethylene glycol diisotridecanoate, propylene glycol di(2-ethylhexanoate), propylene glycol diisostearate, propylene glycol dipelargonate, butanediol diisostearate and neopentyl glycol dicaprylate. Esters of C₆-C₂₄ fatty alcohols and/or Guerbet alcohols with aromatic carboxylic acids, saturated and/or unsaturated, especially benzoic acid, esters of C₂-C₁₂dicarboxylic acids with linear or branched alcohols having from 1 to 22 carbon atoms or polyols having from 2 to 10 carbon atoms and from 2 to 6 hydroxy groups, or iminodisuccinic acid and imiondisuccinic acid salts [CAS 7408-20-0] or latex particles, aloe vera, chamomile, ginkgo biloba, ginseng, coenzyme Q10, laminaria ochroleuca extract, magnolia obovata extract, melaleuca alternifolia leaf oil, rubus idaeus seed oil, vaccinium macrocarpon seed oil, pumpkin seed extract, pumpkin seed oil, grape seed extract, carnosine, alpha-arbutin, madecassoside, termino-laside, tetrahydrocurcuminoids (THC), mycosporines, mycosporine like amino acids from the red alga porphyra umbilicalis, mycosporine-like amino acids (as described in WO2002039974), cis-9-octadecenedioic acid, lipoic acid, laurimino dipropionic acid tocopheryl phosphates (LDTP), microcrystalline cellulose (MCC), polycarbonates as described in WO 0341676, sterols (cholesterol, lanosterol, phytosterols), as described in WO0341675 and linear poly-alpha-glucans as described in US6616935

Natural or synthetic triglycerides including glyceryl esters and derivatives

Di- or tri-glycerides, based on C₆-C₁₈ fatty acids, modified by reaction with other alcohols (caprylic/capric triglyceride, wheat germ glycerides, etc.). Fatty acid esters of polyglycerin (polyglyceryl-n such as polyglyceryl-4 caprate, polyglyceryl-2 isostearate, etc. or castor oil, hydrogenated vegetable oil, sweet almond oil, wheat germ oil, sesame oil, hydrogenated cottonseed oil, coconut oil, avocado oil, corn oil, hydrogenated castor oil, shea butter, cocoa butter, soybean oil, mink oil, sunflower oil, safflower oil, macadamia nut oil, olive oil, hydrogenated tallow, apricot kernel oil, hazelnut oil, borago oil, etc.

Waxes including esters of long-chain acids and alcohols as well as compounds having wax-like properties, e.g., carnauba wax, beeswax (white or yellow), lanolin wax, candellila wax, ozokerite, japan wax, paraffin wax, microcrystalline wax, ceresin, cetearyl esters wax, synthetic beeswax, etc. Also, hydrophilic waxes as Cetearyl Alcohol or partial glycerides.

Pearlescent waxes:

glycol esters, especially ethylene glycol distearate; fatty acid alkanolamides, especially coco fatty acid diethanolamide; partial glycerides, especially stearic acid monoglyceride; esters of polyvalent, unsubstituted or hydroxy-substituted carboxylic acids with fatty alcohols having from 6 to 22 carbon atoms, especially long-chained esters of tartaric acid; fatty substances, for example fatty alcohols, fatty ketones, fatty aldehydes, fatty ethers and fatty carbonates, which in total have at least 24 carbon atoms, especially laurone and distearyl ether; fatty acids, such as stearic acid, hydroxystearic acid or behenic acid, ring-opening products of olefin epoxides having from 12 to 22 carbon atoms with fatty alcohols having from 12 to 22 carbon atoms and/or polyols having from 2 to 15 carbon atoms and from 2 to 10 hydroxy groups, and mixtures thereof.

Hydrocarbon oils:

Mineral oil (light or heavy), petrolatum (yellow or white), microcrystalline wax, paraffinic and isoparaffinic compounds, hydrogenated isoparaffinic molecules as polydecenes and polybutene, hydrogenated polyisobutene, squalane, isohexadecane, isododecane and others from plant and animal kingdom.

Silicones or siloxanes (organosubstituted polysiloxanes)

Dimethylpolysiloxanes, methylphenylpolysiloxanes, cyclic silicones, and also amino-, fatty acid-, alcohol-, polyether-, epoxy-, fluorine-, glycoside- and/or alkyl-modified silicone compounds, which at room temperature may be in either liquid or resinous form. Linear polysiloxanes, dimethicone (Dow Corning 200 fluid, Rhodia Mirasil DM), dimethiconol, cyclic silicone fluids, cyclopentasiloxanes volatiles (Dow Corning 345 fluid), phenyltrimethicone (Dow Corning 556 fluid). Also suitable are simethicones, which are mixtures of dimethicones having an average chain length of from 200 to 300 dimethylsiloxane units with hydrogenated silicates. A detailed survey by Todd *et al.* of suitable volatile silicones may in addition be found in *Cosm. Toil.* 91, 27 (1976).

Fluorinated or perfluorinated oils

Perfluorhexane, dimethylcyclohexane, ethylcyclopentane, polyperfluoromethylisopropyl ether.

Emulsifiers

Any conventionally usable emulsifier can be used for the compositions. Emulsifier systems may comprise for example: carboxylic acids and their salts: alkaline soap of sodium, potassium and ammonium, metallic soap of calcium or magnesium, organic basis soap such as Lauric, palmitic, stearic and oleic acid etc... Alkyl phosphates or phosphoric acid esters, acid phosphate, diethanolamine phosphate, potassium cetyl phosphate. Ethoxylated carboxylic acids or polyethyleneglycol esters, PEG-n acylates. Linear fatty alcohols having from 8 to 22 carbon atoms, branched from 2 to 30 mol of ethylene oxide and/or from 0 to 5 mol propylene oxide with with fatty acids having from 12 to 22 carbon atoms and with alkylphenols having from 8 to 15 carbon atoms in the alkyl group. Fatty alcohol polyglycol-ether such as laureth-n, cetareth-n, steareth-n, oleth-n. Fatty acid polyglycolether such as PEG-n stearate, PEG-n oleate, PEG-n cocoate. Monoglycerides and polyol esters. C12-C22 fatty acid mono- and di-esters of addition products of from 1 to 30 mol of ethylene oxide with polyols. Fatty acid and polyglycerol ester such as monostearate glycerol, diisostearoyl polyglyceryl-3-diisostearates, polyglyceryl-3-diisostearates, triglyceryl diisostearates, polyglyceryl-2-sesquiisostearates or polyglyceryl dimerates. Mixtures of compounds from a plurality of those substance classes are also suitable. Fatty acid polyglycolesters such as monostearate diethylene glycol, fatty acid and polyethylene glycol esters, fatty acid and saccharose esters such as sucro esters, glycerol and saccharose esters such as sucro

glycerides. Sorbitol and sorbitan, sorbitan mono- and di-esters of saturated and unsaturated fatty acids having from 6 to 22 carbon atoms and ethylene oxide addition products. Polysorbate-n series, sorbitan esters such as sesquisteate, sorbitan, PEG-(6)-isosteate sorbitan, PEG-(10)-sorbitan laurate, PEG-17- dioleate sorbitan. Glucose derivatives, C8-C22 alkyl-mono and oligo-glycosides and ethoxylated analogues with glucose being preferred as the sugar component. O/W emulsifiers such as methyl gluceth-20 sesquisteate, sorbitan stearate/sucrose cocoate, methyl glucose sesquisteate, cetearyl alcohol/cetearyl glucoside. W/O emulsifiers such as methyl glucose dioleate/ methyl glucose isosteate. Sulfates and sulfonated derivatives, dialkylsulfosuccinates, dioctyl succinate, alkyl lauryl sulfonate, linear sulfonated parafins, sulfonated tetrapropylene sulfonate, sodium lauryl sulfates, ammonium and ethanolamine lauryl sulfates, lauryl ether sulfates, sodium laureth sulfates, sulfosuccinates, acetyl isothionates, alkanolamide sulfates, taurines, methyl taurines, imidazole sulfates. Amine derivatives, amine salts, ethoxylated amines, oxide amine with chains containing a heterocycle such as alkyl imidazolines, pyridine derivatives, isoquinoline, cetyl pyridinium chloride, cetyl pyridinium bromide, quaternary ammonium such as cetyltrimethylammonium bromide (CTBA), stearylalkonium. Amide derivatives, alkanolamides such as acylamide DEA, ethoxylated amides such as PEG-n acylamide, oxoamide. Polysiloxane/polyalkyl/polyether copolymers and derivatives, dimethicone, copolymers, silicone polyethylene oxide copolymer, silicone glycol copolymer. Propoxylated or POE-n ethers (Merxapols), Polaxamers or poly(oxyethylene)m-block-poly(oxypropylene)n-block(oxyethylene). Zwitterionic surfactants that carry at least one quaternary ammonium group and at least one carboxylate and/or sulfonate group in the molecule. Zwitterionic surfactants that are especially suitable are betaines, such as N-alkyl-N,N-dimethylammonium glycinate, cocoalkyldimethylammonium glycinate, N-acylaminoethyl-N,N-dimethylammonium glycinate, cocoacylaminoethyl-N,N-dimethylammonium glycinate and 2-alkyl-3-carboxymethyl-3-hydroxyethylimidazolines each having from 8 to 18 carbon atoms in the alkyl or acyl group and also cocoacylaminoethylhydroxyethylcarboxymethylglycinate, N-alkylbetaine, N-alkylaminobetaines. Alkylimidazolines, alkylpeptides, lipoaminoacids, self emulsifying bases and the compounds as described in K.F.DePolo, A short textbook of cosmetology, Chapter 8, Table 8-7, p250-251.

Non ionic emulsifiers such as PEG-6 beeswax (and) PEG-6 stearate (and) polyglyceryl – 2-isosteate [Apifac], glyceryl stearate (and) PEG-100 stearate. [Arlacel 165], PEG-5 glyceryl stearate [Arlatone 983 S], sorbitan oleate (and) polyglyceryl-3 ricinoleate.[Arlacel

1689], sorbitan stearate and sucrose cocoate [arlatone 2121], glyceryl stearate and laureth-23 [Cerasynth 945], cetearyl alcohol and ceteth-20 [Cetomacrogol Wax], cetearyl alcohol and colyorbate 60 and PEG-150 and stearate-20 [Polawax GP 200, Polawax NF], cetearyl alcohol and cetearyl polyglucoside [Emulgade PL 1618], cetearyl alcohol and cetareth-20 [Emulgade 1000NI, Cosmowax], cetearyl alcohol and PEG-40 castor oil [Emulgade F Special], cetearyl alcohol and PEG-40 castor oil and sodium cetearyl sulfate [Emulgade F], stearyl alcohol and steareth-7 and steareth-10 [Emulgator E 2155], cetearyl alcohol and steareth-7 and steareth-10 [Emulsifying wax U.S.N.F.], glyceryl stearate and PEG-75 stearate [Gelot 64], propylene glycol ceteth-3 acetate [Hetester PCS], propylene glycol isoceth-3 acetate [Hetester PHA], cetearyl alcohol and ceteth-12 and oleth-12 [Lanbritol Wax N 21], PEG-6 stearate and PEG-32 stearate [Tefose 1500], PEG-6 stearate and ceteth-20 and steareth-20 [Tefose 2000], PEG-6 stearate and ceteth-20 and glyceryl stearate and steareth-20 [Tefose 2561], glyceryl stearate and cetareth-20 [Teginacid H, C, X].

Anionic emulsifiers such as PEG-2 stearate SE, glyceryl stearate SE [Monelgine, Cutina KD], propylene glycol stearate [Tegin P], cetearyl Alcohol and Sodium cetearyl sulfate [Lanette N, Cutina LE, Crodacol GP], cetearyl alcohol and sodium lauryl sulfate [Lanette W], trilaneth-4 phosphatate and glycol stearate and PEG-2 stearate [Sedefos 75], glyceryl stearate and sodium lauryl Sulfate [Teginacid Special]. Cationic acid bases such as cetearyl alcohol and cetrimonium bromide.

The emulsifiers may be used in an amount of, for example, from 1 to 30 % by weight, especially from 4 to 20 % by weight and preferably from 5 to 10 % by weight, based on the total weight of the composition.

When formulated in O/W emulsions, the preferably amount of such emulsifier system could represent 5% to 20% of the oil phase.

Adjuvants and additives

The cosmetic / pharmaceutical preparations, for example creams, gels, lotions, alcoholic and aqueous/alcoholic solutions, emulsions, wax/fat compositions, stick preparations, powders or ointments, may in addition contain, as further adjuvants and additives, mild surfactants, super-fattening agents, consistency regulators, thickeners, polymers, stabilisers, biogenic active ingredients, deodorising active ingredients, anti-dandruff agents, film formers, swelling

agents, further UV light-protective factors, antioxidants, hydrotropic agents, preservatives, insect repellents, self-tanning agents, solubilisers, perfume oils, colourants, bacteria-inhibiting agents and the like.

Super-fatting agents

Substances suitable for use as super-fatting agents are, for example, lanolin and lecithin and also polyethoxylated or acrylated lanolin and lecithin derivatives, polyol fatty acid esters, monoglycerides and fatty acid alkanolamides, the latter simultaneously acting as foam stabilisers.

Surfactants

Examples of suitable mild surfactants, that is to say surfactants especially well tolerated by the skin, include fatty alcohol polyglycol ether sulfates, monoglyceride sulfates, mono- and/or di-alkyl sulfosuccinates, fatty acid isethionates, fatty acid sarcosinates, fatty acid taurides, fatty acid glutamates, α -olefin sulfonates, ethercarboxylic acids, alkyl oligoglucosides, fatty acid glucamides, alkylamidobetaines and/or protein fatty acid condensation products, the latter preferably being based on wheat proteins.

Consistency regulators/thickeners and rheology modifiers

Silicium dioxide, magnesium silicates, aluminium silicates, polysaccharides or derivatives thereof for example hyaluronic acid, xanthan gum, guar-guar, agar-agar, alginates, carrageenan, gellan, pectines, or modified cellulose such as hydroxycellulose, hydroxypropyl-methylcellulose. In addition polyacrylates or homopolymer of reticulated acrylic acids and polyacrylamides, carbomer (carbopol types 980, 981, 1382, ETD 2001, ETD2020, Ultrez 10) or Salcare range such as Salcare SC80(steareth-10 allyl ether/acrylates copolymer), Salcare SC81(acrylates copolymer), Salcare SC91 and Salcare AST(sodium acrylates copolymer/PPG-1 trideceth-6), sepigel 305(polyacrylamide/laureth-7), Simulgel NS and Simulgel EG (hydroxyethyl acrylate / sodium acryloyldimethyl taurate copolymer), Stablen 30 (acrylates / vinyl isodecanoate crosspolymer), Pemulen TR-1(acrylates / C10-30 alkyl acrylate crosspolymer), Luvigel EM (sodium acrylates copolymer), Aculyn 28 (acrylates/behent-25 methacrylate copolymer), etc.

Polymers

Suitable cationic polymers are, for example, cationic cellulose derivatives, for example a quaternised hydroxymethyl cellulose obtainable under the name Polymer JR 400 from Amerchol, cationic starches, copolymers of diallylammonium salts and acrylamides, quaternised vinylpyrrolidone/vinyl imidazole polymers, for example Luviquat® (BASF), condensation products of polyglycols and amines, quaternised collagen polypeptides, for example lauryldimonium hydroxypropyl hydrolyzed collagen (Lamequat®L/Grünau), quaternised wheat polypeptides, polyethyleneimine, cationic silicone polymers, for example amidomethicones, copolymers of adipic acid and dimethylaminohydroxypropyldiethylenetriamine (Cartaretin/Sandoz), copolymers of acrylic acid with dimethyldiallylammonium chloride (Merquat 550 / Chemviron), polyaminopolyamides, as described, for example, in FR-A-2 252 840, and the crosslinked water-soluble polymers thereof, cationic chitin derivatives, for example of quaternised chitosan, optionally distributed as microcrystals; condensation products of dihaloalkyls, for example dibromobutane, with bisdialkylamines, for example bisdimethylamino-1,3-propane, cationic guar gum, for example Jaguar C-17, Jaguar C-16 from Celanese, quaternised ammonium salt polymers, for example Mirapol A-15, Mirapol AD-1, Mirapol AZ-1 from Miranol. As anionic, zwitterionic, amphoteric and non-ionic polymers there come into consideration, for example, vinyl acetate / crotonic acid copolymers, vinylpyrrolidone / vinyl acrylate copolymers, vinyl acetate / butyl maleate / isobornyl acrylate copolymers, methyl vinyl ether / maleic anhydride copolymers and esters thereof, uncrosslinked polyacrylic acids and polyacrylic acids crosslinked with polyols, acrylamidopropyl-trimethylammonium chloride /acrylate copolymers, octyl acrylamide/methyl methacrylate/tert-butylaminoethyl methacrylate/2-hydroxypropyl methacrylate copolymers, polyvinylpyrrolidone, vinylpyrrolidone/vinyl acetate copolymers, vinylpyrrolidone/dimethylaminoethyl methacrylate/vinyl caprolactam terpolymers and also optionally derivatised cellulose ethers and silicones. Furthermore the polymers as described in EP 1093796 (pages 3-8, paragraphs 17-68) may be used.

Biogenic active ingredients

Biogenic active ingredients are to be understood as meaning, for example, tocopherol, tocopherol acetate, tocopherol palmitate, ascorbic acid, deoxyribonucleic acid, retinol, bisabolol, allantoin, phytantriol, panthenol, AHA acids, amino acids, ceramides, pseudoceramides, essential oils, plant extracts and vitamin complexes.

Deodorising active ingredients

As deodorising active ingredients there come into consideration, for example, antiperspirants, for example aluminium chlorohydrates (see J. Soc. Cosm. Chem. 24, 281 (1973)). Under the trade mark Locron® of Hoechst AG, Frankfurt (FRG), there is available commercially, for example, an aluminium chlorohydrate corresponding to formula $Al_2(OH)_5Cl \times 2.5 H_2O$, the use of which is especially preferred (see J. Pharm. Pharmacol. 26, 531 (1975)). Besides the chlorohydrates, it is also possible to use aluminium hydroxyacetates and acidic aluminium/zirconium salts. Esterase inhibitors may be added as further deodorising active ingredients. Such inhibitors are preferably trialkyl citrates, such as trimethyl citrate, tripropyl citrate, triisopropyl citrate, tributyl citrate and especially triethyl citrate (Hydagen CAT, Henkel), which inhibit enzyme activity and hence reduce odour formation. Further substances that come into consideration as esterase inhibitors are sterol sulfates or phosphates, for example lanosterol, cholesterol, campesterol, stigmasterol and sitosterol sulfate or phosphate, dicarboxylic acids and esters thereof, for example glutaric acid, glutaric acid monoethyl ester, glutaric acid diethyl ester, adipic acid, adipic acid monoethyl ester, adipic acid diethyl ester, malonic acid and malonic acid diethyl ester and hydroxycarboxylic acids and esters thereof, for example citric acid, malic acid, tartaric acid or tartaric acid diethyl ester. Antibacterial active ingredients that influence the germ flora and kill or inhibit the growth of sweat-decomposing bacteria can likewise be present in the preparations (especially in stick preparations). Examples include chitosan, phenoxyethanol and chlorhexidine gluconate. 5-chloro-2-(2,4-dichlorophenoxy)-phenol (Triclosan, Irgasan, Ciba Specialty Chemicals Inc.) has also proved especially effective.

Anti-dandruff agents

As anti-dandruff agents there may be used, for example, climbazole, octopirox and zinc pyrithione. Customary film formers include, for example, chitosan, microcrystalline chitosan, quaternised chitosan, polyvinylpyrrolidone, vinylpyrrolidone/vinyl acetate copolymers, polymers of quaternary cellulose derivatives containing a high proportion of acrylic acid, collagen, hyaluronic acid and salts thereof and similar compounds.

Antioxidants

In addition to the primary light-protective substances it is also possible to use secondary light-protective substances of the antioxidant kind that interrupt the photochemical reaction

chain triggered when UV radiation penetrates the skin or hair. Typical examples of such antioxidants are amino acids (e.g. glycine, histidine, tyrosine, tryptophan) and derivatives thereof, imidazoles (e.g. urocanic acid) and derivatives thereof, peptides, such as D,L-carnosine, D-carnosine, L-carnosine and derivatives thereof (e.g. anserine), carotinoids, carotenes, lycopene and derivatives thereof, chlorogenic acid and derivatives thereof, lipoic acid and derivatives thereof (e.g. dihydrolipoic acid), aurothioglycose, propylthiouracil and other thiols (e.g. thioredoxin, glutathione, cysteine, cystine, cystamine and the glycosyl, N-acetyl, methyl, ethyl, propyl, amyl, butyl, lauryl, palmitoyl, oleyl, linoleyl, cholesteryl and glyceryl esters thereof) and also salts thereof, dilauryl thiodipropionate, distearyl thiodipropionate, thiodipropionic acid and derivatives thereof (esters, ethers, peptides, lipids, nucleotides, nucleosides and salts) and also sulfoximine compounds (e.g. buthionine sulfoximines, homocysteine sulfoximine, buthionine sulfones, penta-, hexa-, hepta-thionine sulfoximine), also (metal) chelating agents (e.g. hydroxy fatty acids, palmitic acid phytic acid, lactoferrin), hydroxy acids (e.g. citric acid, lactic acid, malic acid), humic acid, bile acid, bile extracts, bilirubin, biliverdin, EDTA, EDDS, EGTA and derivatives thereof, unsaturated fatty acids and derivatives thereof (e.g. linolenic acid, linoleic acid, oleic acid), folic acid and derivatives thereof, ubiquinone and ubiquinol and derivatives thereof, vitamin C and derivatives (e.g. ascorbyl palmitate, magnesium ascorbyl phosphate, ascorbyl acetate), tocopherols and derivatives (e.g. vitamin E acetate), vitamin A and derivatives (e.g. vitamin A palmitate) and also coniferyl benzoate of benzoin resin, rutinic acid and derivatives thereof, glycosylrutin, ferulic acid, furfurylidene glucitol, carnosine, butyl hydroxytoluene, butyl hydroxyanisole, nordihydroguaiaretic acid, trihydroxybutyrophenone, uric acid and derivatives thereof, mannose and derivatives thereof, superoxide dismutase, N-[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionyl]sulfanilic acid (and salts thereof, for example the disodium salts), zinc and derivatives thereof (e.g. ZnO, ZnSO₄), selenium and derivatives thereof (e.g. selenium methionine), stilbene and derivatives thereof (e.g. stilbene oxide, trans-stilbene oxide) and the derivatives suitable according to the invention (salts, esters, ethers, sugars, nucleotides, nucleosides, peptides and lipids) of those mentioned active ingredients. HALS ("Hindered Amine Light Stabilizers") compounds may also be mentioned.

Further synthetic and natural antioxidants are listed e.g. in patent WO 0025731:

Structures 1-3 (page 2), structure 4 (page 6), structures 5-6 (page 7) and compounds 7-33 (page 8-14).

The amount of antioxidants present is usually from 0.001 to 30 % by weight, preferably from 0.01 to 3 % by weight, based on the weight of the UV absorber of formula (1).

Hydrotropic agents

To improve the flow behaviour it is also possible to employ hydrotropic agents, for example ethoxylated or non ethoxylated mono-alcohols, diols or polyols with a low number of carbon atoms or their ethers (e.g. ethanol, isopropanol, 1,2-dipropanediol, propyleneglycol, glycerin, ethylene glycol, ethylene glycol monoethylether, ethylene glycol monobutylether, propylene glycol monomethylether, propylene glycol monoethylether, propylene glycol monobutylether, diethylene glycol monomethylether; diethylene glycol monoethylether, diethylene glycol monobutylether and similar products). The polyols that come into consideration for that purpose have preferably from 2 to 15 carbon atoms and at least two hydroxy groups. The polyols may also contain further functional groups, especially amino groups, and/or may be modified with nitrogen. Typical examples are as follows: glycerol, alkylene glycols, for example ethylene glycol, diethylene glycol, propylene glycol, butylene glycol, hexylene glycol and also polyethylene glycols having an average molecular weight of from 100 to 1000 Dalton; technical oligoglycerol mixtures having an intrinsic degree of condensation of from 1.5 to 10, for example technical diglycerol mixtures having a diglycerol content of from 40 to 50 % by weight; methylol compounds, such as, especially, trimethyloethane, trimethylolpropane, trimethylolbutane, pentaerythritol and dipentaerythritol; lower alkyl-glucosides, especially those having from 1 to 8 carbon atoms in the alkyl radical, for example methyl and butyl glucoside; sugar alcohols having from 5 to 12 carbon atoms, for example sorbitol or mannitol; sugars having from 5 to 12 carbon atoms, for example glucose or saccharose; amino sugars, for example glucamine; dialcohol amines, such as diethanolamine or 2-amino-1,3-propanediol.

Preservatives and Bacteria-inhibiting agents

Suitable preservatives include, for example, Methyl-, Ethyl-, Propyl-, Butyl- parabens, Benzalkonium chloride, 2-Bromo-2-nitro-propane-1,3-diol, Dehydroacetic acid, Diazolidinyl Urea, 2-Dichloro-benzyl alcohol, DMDM hydantoin, Formaldehyde solution, Methylidibromoglutanitrile, Phenoxyethanol, Sodium Hydroxymethylglycinate, Imidazolidinyl Urea, Triclosan and further substance classes listed in the following reference: K.F.DePolo – A short textbook of cosmetology, Chapter 7, Table 7-2, 7-3, 7-4 and 7-5, p210-219.

Typical examples of bacteria-inhibiting agents are preservatives that have a specific action against gram-positive bacteria, such as 2,4,4'-trichloro-2'-hydroxydiphenyl ether, chlorhexidine (1,6-di(4-chlorophenyl-biguanido)hexane) or TCC (3,4,4'-trichlorocarbanilide). A large number of aromatic substances and ethereal oils also have antimicrobial properties. Typical examples are the active ingredients eugenol, menthol and thymol in clove oil, mint oil and thyme oil. A natural deodorising agent of interest is the terpene alcohol farnesol (3,7,11-trimethyl-2,6,10-dodecatrien-1-ol), which is present in lime blossom oil. Glycerol monolaurate has also proved to be a bacteriostatic agent. The amount of the additional bacteria-inhibiting agents present is usually from 0.1 to 2 % by weight, based on the solids content of the preparations.

Perfume oils

There may be mentioned as perfume oils mixtures of natural and/or synthetic aromatic substances. Natural aromatic substances are, for example, extracts from blossom (lilies, lavender, roses, jasmine, neroli, ylang-ylang), from stems and leaves (geranium, patchouli, petitgrain), from fruit (aniseed, coriander, carraway, juniper), from fruit peel (bergamot, lemons, oranges), from roots (mace, angelica, celery, cardamom, costus, iris, calmus), from wood (pinewood, sandalwood, guaiacum wood, cedarwood, rosewood), from herbs and grasses (tarragon, lemon grass, sage, thyme), from needles and twigs (spruce, pine, Scots pine, mountain pine), from resins and balsams (galbanum, elemi, benzoin, myrrh, olibanum, opoponax). Animal raw materials also come into consideration, for example civet and castoreum. Typical synthetic aromatic substances are, for example, products of the ester, ether, aldehyde, ketone, alcohol or hydrocarbon type. Aromatic substance compounds of the ester type are, for example, benzyl acetate, phenoxyethyl isobutyrate, p-tert-butylcyclohexyl acetate, linalyl acetate, dimethylbenzylcarbonyl acetate, phenylethyl acetate, linalyl benzoate, benzyl formate, ethylmethylphenyl glycinate, allylcyclohexyl propionate, styryl propionate and benzyl salicylate. The ethers include, for example, benzyl ethyl ether; the aldehydes include, for example, the linear alkanals having from 8 to 18 hydrocarbon atoms, citral, citronellal, citronellyl oxyacetaldehyde, cyclamen aldehyde, hydroxycitronellal, lilyal and bourgeonal; the ketones include, for example, the ionones, isomethylionone and methyl cedryl ketone; the alcohols include, for example, anethol, citronellol, eugenol, isoeugenol, geraniol, linalool, phenyl ethyl alcohol and terpinol; and the hydrocarbons include mainly the terpenes and balsams. It is preferable, however, to use mixtures of various aromatic substances that together produce an attractive scent. Ethereal oils of relatively low volatility,

which are chiefly used as aroma components, are also suitable as perfume oils, e.g. sage oil, camomile oil, clove oil, melissa oil, oil of cinnamon leaves, lime blossom oil, juniper berry oil, vetiver oil, olibanum oil, galbanum oil, labolanum oil and lavandin oil. Preference is given to the use of bergamot oil, dihydromyrcenol, lillial, lylal, citronellol, phenyl ethyl alcohol, hexyl cinnamaldehyde, geraniol, benzyl acetone, cyclamen aldehyde, linalool, boisambrene forte, ambroxan, indole, hedione, sandelice, lemon oil, tangerine oil, orange oil, allyl amyl glycolate, cyclovertal, lavandin oil, muscatel sage oil, damascone, bourbon geranium oil, cyclohexyl salicylate, vertofix coeur, iso-E-Super, Fixolide NP, evernyl, iraldein gamma, phenylacetic acid, geranyl acetate, benzyl acetate, rose oxide, romillat, irotyl and floramat alone or in admixture with one another.

Colourants

There may be used as colourants the substances that are suitable and permitted for cosmetic purposes, as compiled, for example, in the publication: "Kosmetische Färbemittel" of the Farbstoffkommission der Deutschen Forschungsgemeinschaft, Verlag Chemie, Weinheim, 1984, pages 81 to 106. The colourants are usually used in concentrations of from 0.001 to 0.1 % by weight, based on the total mixture.

Other adjuvants

It is furthermore possible for the cosmetic preparations to contain, as adjuvants, anti-foams, such as silicones, *structurants*, such as maleic acid, *solubilisers*, such as ethylene glycol, propylene glycol, glycerol or diethylene glycol, opacifiers, such as latex, styrene/PVP or styrene/acrylamide copolymers, complexing agents, such as EDTA, NTA, alaninediacetic acid or phosphonic acids, *propellants*, such as propane/butane mixtures, N₂O, dimethyl ether, CO₂, N₂ or air, so-called coupler and developer components as oxidation dye precursors, *reducing agents*, such as thioglycolic acid and derivatives thereof, thiolactic acid, cysteamine, thiomalic acid or mercaptoethanesulfonic acid, or oxidising agents, such as hydrogen peroxide, potassium bromate or sodium bromate.

Suitable insect repellents are, for example, N,N-diethyl-m-toluamide, 1,2-pentanediol or insect repellent 3535; suitable self-tanning agents are, for example, dihydroxyacetone and/or erythrulose or dihydroxy acetone and/or dihydroxy acetone precursors as described in WO 01/85124 and/or erythrulose.

Polymeric beads or hollow spheres as SPF enhancers

The combination of the UV-absorbers and UV-absorber combinations, listed above, with SPF enhancers, such as non-active ingredients like Styrene/acrylates copolymer, silica beads, spheroidal magnesium silicate, crosslinked Polymethylmethacrylates (PMMA ; Micopearl M305 Seppic), can maximize better the UV protection of the sun products. Holosphere additives (Sunspheres® ISP, Silica Shells Kobo.) deflect radiation and the effective path length of the photon is therefore increased.(EP0893119). Some beads, as mentioned previously, provide a soft feel during spreading. Moreover, the optical activity of such beads, e.g.Micopearl M305, cans modulate skin shine by eliminating reflection phenomena and indirectly may scatter the UV light.

Cosmetic or pharmaceutical preparations

Cosmetic or pharmaceutical formulations are contained in a wide variety of cosmetic preparations. There come into consideration, for example, especially the following preparations:

- skin-care preparations, e.g. skin-washing and cleansing preparations in the form of tablet-form or liquid soaps, soapless detergents or washing pastes,
- bath preparations, e.g. liquid (foam baths, milks, shower preparations) or solid bath preparations, e.g. bath cubes and bath salts;
- skin-care preparations, e.g. skin emulsions, multi-emulsions or skin oils;
- cosmetic personal care preparations, e.g. facial make-up in the form of day creams or powder creams, face powder (loose or pressed), rouge or cream make-up, eye-care preparations, e.g. eyeshadow preparations, mascara, eyeliner, eye creams or eye-fix creams; lip-care preparations, e.g. lipsticks, lip gloss, lip contour pencils, nail-care preparations, such as nail varnish, nail varnish removers, nail hardeners or cuticle removers;
- foot-care preparations, e.g. foot baths, foot powders, foot creams or foot balsams, special deodorants and antiperspirants or callus-removing preparations;
- light-protective preparations, such as sun milks, lotions, creams or oils, sunblocks or tropicals, pre-tanning preparations or after-sun preparations;
- skin-tanning preparations, e.g. self-tanning creams;
- depigmenting preparations, e.g. preparations for bleaching the skin or skin-lightening preparations;

- insect-repellents, e.g. insect-repellent oils, lotions, sprays or sticks;
- deodorants, such as deodorant sprays, pump-action sprays, deodorant gels, sticks or roll-ons;
- antiperspirants, e.g. antiperspirant sticks, creams or roll-ons;
- preparations for cleansing and caring for blemished skin, e.g. synthetic detergents (solid or liquid), peeling or scrub preparations or peeling masks;
- hair-removal preparations in chemical form (depilation), e.g. hair-removing powders, liquid hair-removing preparations, cream- or paste-form hair-removing preparations, hair-removing preparations in gel form or aerosol foams;
- shaving preparations, e.g. shaving soap, foaming shaving creams, non-foaming shaving creams, foams and gels, pre shave preparations for dry shaving, aftershaves or aftershave lotions;
- fragrance preparations, e.g. fragrances (eau de Cologne, eau de toilette, eau de parfum, parfum de toilette, perfume), perfume oils or perfume creams;
- cosmetic hair-treatment preparations, e.g. hair-washing preparations in the form of shampoos and conditioners, hair-care preparations, e.g. pretreatment preparations, hair tonics, styling creams, styling gels, pomades, hair rinses, treatment packs, intensive hair treatments, hair-structuring preparations, e.g. hair-waving preparations for permanent waves (hot wave, mild wave, cold wave), hair-straightening preparations, liquid hair-setting preparations, hair foams, hairsprays, bleaching preparations, e.g. hydrogen peroxide solutions, lightening shampoos, bleaching creams, bleaching powders, bleaching pastes or oils, temporary, semi-permanent or permanent hair colourants, preparations containing self-oxidising dyes, or natural hair colourants, such as henna or camomile.

Presentation forms

The final formulations listed may exist in a wide variety of presentation forms, for example:

- in the form of liquid preparations as a W/O, O/W, O/W/O, W/O/W or PIT emulsion and all kinds of microemulsions,
- in the form of a gel,
- in the form of an oil, a cream, milk or lotion,
- in the form of a powder, a lacquer, a tablet or make-up,
- in the form of a stick,
- in the form of a spray (spray with propellant gas or pump-action spray) or an aerosol,

- in the form of a foam, or
- in the form of a paste.

Of special importance as cosmetic preparations for the skin are light-protective preparations, such as sun milks, lotions, creams, oils, sunblocks or tropicals, pretanning preparations or after-sun preparations, also skin-tanning preparations, for example self-tanning creams. Of particular interest are sun protection creams, sun protection lotions, sun protection milk and sun protection preparations in the form of a spray.

Of special importance as cosmetic preparations for the hair are the above-mentioned preparations for hair treatment, especially hair-washing preparations in the form of shampoos, hair conditioners, hair-care preparations, e.g. pretreatment preparations, hair tonics, styling creams, styling gels, pomades, hair rinses, treatment packs, intensive hair treatments, hair-straightening preparations, liquid hair-setting preparations, hair foams and hairsprays. Of special interest are hair-washing preparations in the form of shampoos.

A shampoo has, for example, the following composition: from 0.01 to 5 % by weight of a UV absorber according to the invention, 12.0 % by weight of sodium laureth-2-sulfate, 4.0 % by weight of cocamidopropyl betaine, 3.0 % by weight of sodium chloride, and water ad 100%.

For example, especially the following hair-cosmetic formulations may be used:

- a₁) spontaneously emulsifying stock formulation, consisting of the UV absorber according to the invention, PEG-6-C₁₀oxoalcohol and sorbitan sesquioleate, to which water and any desired quaternary ammonium compound, for example 4 % minkamidopropyl dimethyl-2-hydroxyethylammonium chloride or Quaternium 80 is added;
- a₂) spontaneously emulsifying stock formulation consisting of the UV absorber according to the invention, tributyl citrate and PEG-20-sorbitan monooleate, to which water and any desired quaternary ammonium compound, for example 4 % minkamidopropyl dimethyl-2-hydroxyethylammonium chloride or Quaternium 80 is added;
- b) quat-doped solutions of the UV absorber according to the invention in butyl triglycol and tributyl citrate;
- c) mixtures or solutions of the UV absorber according to the invention with n-alkylpyrrolidone.

<u>W/O systems</u>					
<u>Ingredients</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Emulsifiers	X	X	X	X	X
Polyglyceryl-2 Dipolyhydroxystearate 2%-4%	X	X	X	X	X
PEG-30 Dipolyhydroxystearate 2%-4%		X			
Rapeseed Oil Sorbitol Esters 1%-5%			X		
PEG-45/Dodecyl Glycol Copolymer 1%-5%				X	
Sorbitan Oleate / Polycerol-3 ricinoleate 1%-5%					X
Lipophilic emollient/dispersant oil 10% - 20%	X	X	X	X	X
Fatty Alcohols and/or Waxes 10% - 15%	X	X	X	X	X
Electrolytes (NaCl, MgSO ₄) 0.5%- 1%	X	X	X	X	X
Polyol phase (Propylene glycol, glycerin) 1% - 8%	X	X	X	X	X
Preservatives 0.3% - 0.8%	X	X	X	X	X
Perfume oils 0.1% - 0.4%	X	X	X	X	X
Chelating agents (such as EDTA) 0% - 0.2%	X	X	X	X	X
Antioxidants 0.05% - 0.2%	X	X	X	X	X
Water deionized Qs 100%	X	X	X	X	X
UV-absorber according to the invention 0,1% - 20%.	X	X	X	X	X
UV-absorber as described in table 2-4 0% - 30%.	X	X	X	X	X

<u>W/Silicone systems</u>					
<u>Ingredients</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	
Dimethicone Copolyol / Cyclomethicone 5%-10%	X		X		
Laurylmethicone Copolyol 5%-10%		X		X	
Cyclopentasiloxane 15%-25%	X			X	
Dimethicone 15%-25%		X	X		
Dimethicone/Vinyldimethicone Crosspolymer 1%-10%	X	X	X	X	
Humectant/polyols (Propylene glycol, glycerin...) 2%-8%	X	X	X	X	
Chelating agents (such as EDTA) 0%-0.2%	X	X	X	X	
Antioxidants 0.05%-0.2%	X	X	X	X	
Preservatives 0.3%-0.8%	X	X	X	X	
Perfume oils 0.1%-0.4%	X	X	X	X	
Water deionized Qs 100%	X	X	X	X	

<u>Multiple emulsions</u>												
<u>Ingredients</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>
UV-absorber as described in table 2-4 0% - 30%	X	X	X	X	X	X	X	X	X	X	X	X

O1/W/O2 emulsions

<u>Ingredients</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
Primary emulsion O1/W								
PEG-60 Hydrogenated Castor Oil 25%	X			X	X			X
Steareth-25 25%		X	X			X	X	
Oil phase 75%								
Fatty acid esters	X		X					
Natural and synthetic Triglycerides		X		X				
Hydrocarbon oils					X		X	
Silicone oils						X		X
Preservatives 0.3% - 0.8%	X	X	X	X	X	X	X	X
Water deionized Qs 100%	X	X	X	X	X	X	X	X
Non ionic multifunctional W/O emulsifier 2%-5%	X	X	X	X	X	X	X	X
Waxes 1%-5%	X	X	X	X	X	X	X	X
Oil phase 20%-30%	X	X	X	X	X	X	X	X
Silicone oils								
Primary emulsion O1/W 15%	X	X	X	X	X	X	X	X
Electrolytes (NaCl, MgSO ₄) 0.1%-0.5%	X	X	X	X	X	X	X	X
Water deionized Qs 100%	X	X	X	X	X	X	X	X
Perfume oils 0.1%-0.4%	X	X	X	X	X	X	X	X
UV-absorber according to the invention 0,1%-20%	X	X	X	X	X	X	X	X
UV-absorber as described in table 2-4 0%-30%	X	X	X	X	X	X	X	X

<u>Microemulsions</u>										
<u>Ingredients</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
PEG-8 Caprylic/Capric Glycerides 10%-25%	X			X	X			X	X	
PPG-5-ceteth-20 10%-25%		X	X			X	X			X

<u>Microemulsions</u>										
<u>Ingredients</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Polyglyceryl-6 Isostearate 5%-15%	X		X							
Polyglyceryl-3 Diisostearate 5%-15%		X		X						
Polyglyceryl-6 Dioleate 5%-15%					X		X			
PPG-10 Cetyl Ether 5%-15%						X		X		
Ethoxydiglycol 5%-15%									X	X
Oil phase 10%-80%	X	X	X	X	X	X	X	X	X	X
Isostearyl Benzoate	X	X	X	X	X	X	X	X	X	X
Isostearyl Isostearate	X	X	X	X	X	X	X	X	X	X
PEG-7 Glyceryl Cocoate	X	X	X	X	X	X	X	X	X	X
Cyclomethicone	X	X	X	X	X	X	X	X	X	X
Polyalcohols/Humectants 1%-10%	X	X	X	X	X	X	X	X	X	X
Preservatives 0.3 -0.8%	X	X	X	X	X	X	X	X	X	X
Perfume oils 0.1%-0.4%	X	X	X	X	X	X	X	X	X	X
Water Deioniz. qs 100%	X	X	X	X	X	X	X	X	X	X
UV-absorber according to the invention 0,1%-20%	X	X	X	X	X	X	X	X	X	X
UV-absorber as described in table 2-4 0%-30%	X	X	X	X	X	X	X	X	X	X

<u>O/W Spray emulsions</u>							
<u>Ingredients</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	
Alkyl Phosphates 0.1%-5%	X			X	X		
Glucosidic derivatives 0.1%-5%		X	X				X
Solubilisants							
Ethoxylated Glyceryl ethers 0.1%-1%	X		X				
Polysorbates 0.1%-1%		X		X			
Ethoxylated Oleyl ethers 0.1%-1%					X	X	
PVP/VA Copolymer 1%-10%	X		X		X		
PVM/MA Copolymer 1%-10%		X		X		X	
Oil phase 5%-20%	X	X	X	X	X	X	X
Natural oils (Meadowfoam, Jojoba, Macadamia...)	X	X	X	X	X	X	X
Fatty acids esters	X	X	X	X	X	X	X

<u>Oleogels</u>										
<u>Ingredients</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
UV-absorber as described in table 2-4 (0%-30%)	X	X	X	X	X	X	X	X	X	X

<u>Light/dry cosmetic oils</u>				
<u>Ingredients</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Hydrocarbon oils 30%-70%	X			X
Fatty acid esters branched or not 10%-50%		X	X	
Silicones/Siloxanes 0% - 10%	X		X	
Perfluorinated oils and Perfluoroethers 0%-10%		X		X
Viscosifying agents 0%-10%	X	X	X	X
Esters of long chain acids and alcohols 0% - 2%	X	X	X	X
Antioxidants 0.1%-1%	X	X	X	X
Solubilisants/dispersing agents 0%-5%	X	X	X	X
Perfume oils 0.1%-0.5%	X	X	X	X
UV-absorber according to the invention 0,1%-20%.	X	X	X	X
UV-absorber as described in table 2-4 0%-30%	X	X	X	X

<u>Foaming/mousse products</u>	
<u>Ingredients</u>	<u>1</u>
SD Alcohol 40 0%-8%	X
Propellant 8%-15%	X
Nonionic Emulsifier/Surfactant 0.5% - 3%	X
Corrosion Inhibitor 0% - 1%	X
Perfume oils 0.1% - 0.5%	X
Preservatives 0.1%-1%	X
Miscellaneous 0%-1%	X
UV-absorber according to the invention 0,1%-20%.	X
UV-absorber as described in table 2-4 0%-30%	X

<u>Stick products</u>	
<u>Ingredients</u>	<u>1</u>
Waxes 15%-30%	X
Natural and silicone oils 20%-75%	X

<u>Stick products</u>	
<u>Ingredients</u>	<u>1</u>
Lanoline derivatives 5%->50%	X
Esters of lanolin	x
Acetylated lanolin	x
Lanolin oil	x
Colorants and pigments 10% - 15%	X
Antioxidants 0.1% - 0.8%	X
Perfume oils 0.1% - 2%	X
Preservatives 0.1%-0.7%	X
UV-absorber according to the invention 0,1%-20%	X
UV-absorber as described in table 2-4 0%-30%	X

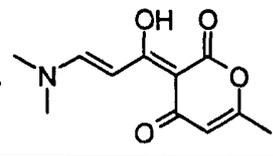
<u>Liquid and compact</u>		
<u>Ingredients</u>	<u>1</u>	<u>2</u>
<u>Liquid foundation</u>		
Powder phase 10%-15%	X	
Oil phase 30% - 40%; 75% (only for anhydrous form)	X	
Thickener/suspending agents 1%-5%	X	
Film forming polymers 1%-2%	X	
Antioxidants 0.1% - 1%	X	
Perfume oils 0.1% - 0.5%	X	
Preservatives 0.1%-0.8%	X	
Water deionized Qs 100%	X	
<u>Compact powder</u>		
Powder phase 15%-50%		X
Oil phase 15% - 50%		X
Polyol phase 5% - 15%		X
Antioxidants 0.1%-1%		X
Perfume oils 0.1% - 0.5%		X
Preservatives 0.1%-0.8%		X
<u>For the two product forms</u>		
UV-absorber according to the invention 0,1%-20%	X	X
UV-absorber as described in table 2-4 0%-30%	X	X

<u>Conditioning Shampoos</u>	
<u>Ingredients</u>	<u>1</u>
Primary surfactants (listed previously) 5%-10%	X
Secondary surfactants (listed previously) 5%-15%	X
Foam Stabilizers (listed previously) 0%-5%	X
Water deionized 40%-70%	X
Actives 0 -10%	X
Conditioners	x
Refatting agents	x
Moisturizing agents	x
Thickeners/Rheology modifiers 0%-3%	X
Humectants 0 %-2%	X
PH adjusting agents 0 %-1%	X
Preservatives 0.05 %-1%	X
Perfume oils 0.1%-1%	X
Antioxidants 0.05 %-0.20%	X
Chelating Agents (EDTA) 0%-0.2%	X
Opacifying agents 0%-2%	X
UV-absorber according to the invention 0,1%-20%	X
UV-absorber as described in table 2-4 0%-30%	X

The cosmetic preparation according to the invention is distinguished by excellent protection of human skin against the damaging effect of sunlight.

Preparation Examples

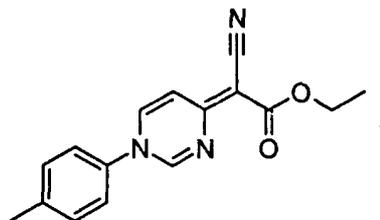
Example 1: Preparation of the compound of formula



A mixture of 8,58 g of dehydroacetic acid with 7,63 g of N,N-Dimethylformamid-dimethylacetate in 100 ml of tert.-butylmethylether is stirred for 8 hours at room temperature. Then the product is filtered off, washed with minor amounts of tert.-butylmethylether and dried in vacuum at 40°C.

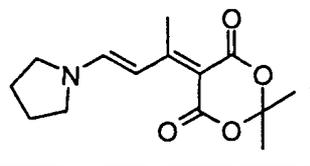
The yield is nearly quantitative. Fp: 159-161 °C.

Example 2: Preparation of compound of formula



A mixture of 1 g of 1-Ethoxycarbonyl-1-cyano-2-(N-dimethylaminomethylen)amino-4-dimethylaminobutadiene (prepared according to Chem. Heterocycl. Compd. (Engl. Transl.), 24, 8, 1988, 918) with 0,43 g of p-toluidine in 10 ml of dimethylformamide is boiled for 1 hour. The solvent is evaporated, the residue is ground in ether, filtered and dried in vacuum at 40 °C yielding 0,75 g of colorless crystals. Fp: 210-216 °C.

Example 3: Preparation of the compound of formula



A mixture of 8.62 g pyrrolidine, 16.34 g malonic acid-cycl.-isopropylidene ester and 14.68 g acetylacetaldehyd dimethylacetal in 100 ml Toluene are stirred for 45 minutes at room temperature and kept under reflux for 67 hours.

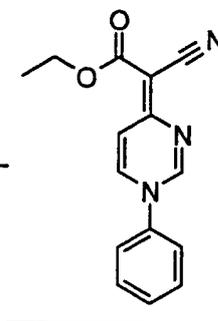
The reaction mixture is stirred for 4 h at 3°C and finally for 16 h at room temperature.

The raw product is filtered off and washed with diethylether and finally 4 times with 10 ml methanol.

After drying in vacuo at 60 °C 2.70 g of the product of formula (1) are obtained as bright-orange crystals.

$\lambda_{\max} = 396 \text{ nm.}$

Example 4: Preparation of the compound: of formula



A mixture of 1,16 g of 1-Ethoxycarbonyl-1-cyano-2-(N-dimethylaminomethylen)amino-4-dimethylaminobutadiene (prepared according to Chem. Heterocycl. Compd. (Engl. Transl.), 24, 8, 1988, 918) with 0,47 g of aniline in 11 ml of acetic acid is boiled for 1 hour. After cooling to room temperature the product is filtered off, recrystallized from toluene/ethyl acetate (1:1) yielding yellow crystals which were dried in vacuum at 40°C.

The yield is 25 %. $\lambda_{\text{max}} = 363 \text{ nm}$.

Application Examples

Example 5: UV-A/UV-B Daily Care UV Protection Lotion

	<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
Part A	Oleth-3 Phosphate	0.60
	Steareth-21	2.50
	Steareth-2	1.00
	Cetyl Alcohol	0.80
	Stearyl Alcohol	1.50
	Tribehenin	0.80
	Isohexadecane	8.00
	Ethylhexyl Methoxycinnamate	5.00
Part B	Water	qs to 100
	Glycerin	2.00
	UV-absorber as described in examples 1 to 4	3.00
	Disodium EDTA	0.10
Part C	Water	20.00
	Diazolidinyl Urea (and) Iodopropynyl Butylcarbamate	0.15
	Propylene Glycol	4.00

	<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
Part D	Sodium Acrylates Copolymer (and) Paraffinium Liquidum (and) PPG-1 Trideceth-6	1.50
	Cyclopentasiloxane	4.50
	PEG-12 Dimethicone	2.00
	Tocopheryl Acetate	0.45
	Water (and) Citric Acid	qs
	Part E	Fragrance

Manufacturing instruction:

Part A and part B are heated separately to 75°C. Part A is poured into part B under continuous stirring. Immediately after the emulsification, Cyclopentasiloxane and PEG-12 Dimethicone from part D are incorporated into the mixture. Afterwards the mixture is homogenized with an Ultra Turrax at 11 000 rpm for 30 sec. After cooling down to 65°C Sodium Acrylates Copolymer (and) Paraffinium Liquidum (and) PPG-1 Trideceth-6 are incorporated. Part C is added at a temperature < 50°C. At a temperature ≤35°C Tocopheryl Acetate is incorporated and subsequently the pH is adjusted with Water (and) Citric Acid. At room temperature part E is added.

Example 6: UV Day Lotion

	<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
Part A	Cetyl Phosphate	1.75
	C12-C15 Alkyl Benzoate	5.00
	Cetearyl Alcohol/ PEG-20 Stearate	2.00
	Ethoxydiglycol Oleate	2.00
	Stearic Acid	1.50
	Ethylhexyl Methoxycinnamate	3.00
	Isononyl Isononanoate	2.00
	Part B	Aqua
	Xanthan Gum	0.35
	UV-absorber as described in examples 1 to 4	5.00
	Disodium EDTA	0.20
	Propylene Glycol	2.00
	Diazolidinyl Urea (and) Methylparaben (and) Propylparaben (and)	0.70

	<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
	Propylene Glycol	
	Glycerin	1.50
Part C	Cyclopentasiloxane (and) Dimethiconol	1.00
	Ethoxydiglycol	3.00
	Dimethicone	2.00
Part D	Triethanolamine	qs

Manufacturing instruction:

Part A is prepared by incorporating all ingredients, then stirred under moderate speed and heated to 75°C. Part B is prepared and heated to 75°C. At this temperature part B is poured into part A under progressive stirring speed. Then the mixture is homogenized (30sec., 15000 rpm) . At a temperature < 55°C the ingredients of part C are incorporated. The mixture is cooled down under moderate stirring, then the pH is checked and adjusted with triethanolamine.

Example 7: Sun Protection Emulsion

	<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
Part A	Cetearyl Alcohol (and) Dicetyl Phosphate (and) Ceteth-10 Phosphate	4.00
	C12-15 Alkyl Benzoate	2.00
	Dicaprylyl Ether	3.00
	Ethoxydiglycol Oleate	2.00
	Stearic Acid	1.00
	Ethylhexyl Methoxycinnamate	3.00
	Sodium Acrylates Copolymer (and) Glycine Soja (and) PPG-1	0.30
	Trideceth-6	
	Squalane	3.50
Part B	Aqua	qs to 100
	UV-absorber as described in examples 1 to 4	5.00
Part C	Diazolidinyl Urea (and) Iodopropynyl Butylcarbamate	0.15
	Propylene Glycol	2.50
	Aqua	10.00
Part D	Cyclopentasiloxane, Dimethiconol	2.00
	Ethoxydiglycol	5.00

	<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
	Cyclopentasiloxane (and) Dimethicone/Vinyl-dimethicone Crosspolymer	2.00
Part E	Sodium Hydroxide	0.10

Manufacturing instruction:

Part A is prepared by incorporating all ingredients, then stirred under moderate speed and heated to 75°C. Part B is prepared and heated to 75°C. At this temperature, part B is poured into part A under progressive stirring speed. Below 65°C the ingredients of part D are added separately. After cooling down under moderate stirring to 55°C part C is added. The pH is then checked and adjusted with sodium hydroxide. The mixture is homogenized for 30 sec at 16000rpm.

Example 8: Every Day Lotion

	<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
Part A	Stearyl Phosphate	5.00
	Tricontanyl PVP	1.00
	Ethoxydiglycol Oleate	3.00
	Squalane	5.00
	C12-15 Alkyl Benzoate	5.00
	Ethylhexyl Methoxycinnamate	3.00
	Glyceryl Stearate	2.00
	Cetyl Alcohol	2.00
Part B	Aqua	20.00
	UV-absorber as described in examples 1 to 4	3.00
Part C	Aqua	qs to 100
	Steareth-10 Allyl Ether/Acrylates Copolymer	0.50
	Glycerin	2.50
	Diazolidinyl Urea (and) Iodopropynyl Butylcarbamate	0.15
	Sodium Lauroyl Glutamate	0.70
Part D	Cyclopentasiloxane (and) Dimethiconol	1.50
	Triethanolamine	1.85

Manufacturing instruction:

Part A is prepared by incorporating all ingredients, then stirred under moderate speed and heated to 75°C. Part C is prepared and heated to 75°C. Part C is poured into the part A under moderate stirring. Immediately after the emulsification part B is added, then neutralized with a part of the triethanolamine. The mixture is homogenized for 30 sec. After cooling down under moderate stirring Cyclopentasiloxane (and) Dimethiconol are added. Below 35°C the pH is checked and adjusted with triethanolamine.

Example 9: Sprayable Sunscreen Emulsion

<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
Part A Cetareth-15 (and) Glyceryl Stearate	3.00
Stearyl Alcohol	1.00
Cetyl Ricinoleate	0.80
Dicaprylyl Ether	3.00
C12-15 Alkyl Benzoate	3.00
Isohexadecane	2.50
Stearyl Dimethicone	1.00
Ethylhexyl Methoxycinnamate	4.00
Cetyl Alcohol	0.80
Di-C12-13 Alkyl Tartrate	3.00
Part B Aqua	qs to 100
Steareth-10 Allyl Ether/Acrylates Copolymer	0.45
PEG-7 Glyceryl Cocoate	2.50
Glycerin	2.00
Propylene Glycol	3.00
Part C Diazolidinyl Urea (and) Iodopropynyl Butylcarbamate	0.15
Aqua	20.00
UV-absorber as described in examples 1 to 4	12.00
Titanium Dioxide (and) Silica (and) Sodium Polyacrylate	8.00
Part D Cyclopentasiloxane (and) Dimethiconol	0.85
Part E Sodium Hydroxide (and) Water	qs to pH 6.50 -7.00
Part F Fragrance	qs

Manufacturing instruction

Part A and part B are heated up to 80°C. Part A is blended into part B under stirring and homogenized with an UltraTurrax at 11 000 rpm for 30 sec. Part C is heated to 60°C and added slowly to the emulsion. After cooling down to 40°C part D is incorporated at room temperature and part E is added.

Example 10: Daily Care Lotion

<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
Part A Polyglyceryl Methyl Glucose Distearate	2.50
Cetearyl Alcohol	2.00
Octyl Stearate	3.00
Caprylic/Capric Triglyceride	4.00
Isohexadecane	4.00
Ethylhexyl Methoxycinnamate	2.70
Part B Aqua	64.80
Glycerin	5.00
Phenoxyethanol (and) Methylparaben (and) Butylparaben (and) Ethylparaben (and) Propylparaben	0.50
UV-absorber as described in examples 1 to 4	8.00
Part C Cyclomethicone (and) Dimethicone	3.00
Part D Steareth-10 Allyl Ether/Acrylates Copolymer	0.50

Manufacturing instruction

Part A and B are heated to 75°C. Part A is added into part B under continuous stirring and homogenized with 11000 rpm for 1 minute. After cooling down to 50°C part C is added under continuous stirring. After cooling further down to 30°C part D is added. Afterwards the pH is adjusted between 6.00 - 6.50.

Example 11: Daily Care with UV Protection

<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
Part A Glyceryl Stearate SE	3.00
Glyceryl Stearate and PEG-100 Stearate	3.50
Cetyl Alcohol	1.50
Myristyl Myristate	2.00

<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
Isopropyl Palmitate	2.50
Paraffinum Perliquidum	5.00
Octyl Dimethyl PABA	3.00
Part B Aqua	qs to 100
Propylene Glycol	7.50
Phenoxyethanol (and) Methylparaben (and) Butylparaben (and) Ethylparaben (and) Propylparaben	1.00
Part C Aqua	30.00
UV-absorber as described in examples 1 to 4	10.00
Part D Sodium Acrylates Copolymer (and) Paraffinium Liquidum (and) PPG-1 Trideceth-6	2.00
Part E Citric Acid	0.30

Manufacturing instruction:

Part A and B are heated separately to 75°C. After adding part B into part A the mixture is homogenized with Ultra Turrax for one minute at 11000 rpm. After cooling down to 50°C part C is added. Afterwards the mixture is homogenized for one minute at 16000 rpm. At a temperature < 40°C part D is added. At room temperature the pH-value is adjusted with part E between 6.00 and 6.50.

Example 12: O/W Every Day UV Protection Lotion

<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
Part A Glyceryl Stearate (and) PEG-100 Stearate	5.00
Stearyl Alcohol	1.00
Tripalmitin	0.70
Dimethicone	2.00
C12-15 Alkyl Benzoate	5.00
Isopropyl Palmitate	5.00
Ethylhexyl Methoxycinnamate	3.00
Part B Water	qs to 100
Polysorbate 60	0.50
Glycerin	3.00

	<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
Part C	Water	10.00
	UV-absorber dispersion as described in examples 1 to 4	8.00
Part D	Phenoxyethanol (and) Methylparaben (and) Ethylparaben (and) Butylparaben (and) Propylparaben (and) Isobutylparaben Steareth-10 Allyl Ether/Acrylates Copolymer	0.70 1.50
Part E	Water (and) Sodium Hydroxide	qs
Part F	Fragrance	qs

Manufacturing instruction:

Part A and B are heated separately up to 75°C, part C is heated to 60°C. Afterwards part B is poured into part A under stirring. The mixture is homogenized with an Ultra Turrax for 30 sec. at 11 000 rpm and part C is incorporated. After cooling down to 40°C part D is added. At room temperature the pH-value is adjusted with Sodium Hydroxide between 6.30 and 6.70 and part F is added.

Example 13: OW Every Day UV Protection

	<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
Part A	Glyceryl Stearate (and) PEG-100 Stearate	5.00
	Stearyl Alcohol	1.00
	Tripalmitin	0.70
	Dimethicone	2.00
	C12-15 Alkyl Benzoate	5.00
	Isopropyl Palmitate	5.00
	Ethylhexyl Methoxycinnamate	3.00
Part B	Water	qs to 100
	Polysorbate 60	0.50
	Glycerin	3.00
Part C	Water	10.00
	UV-absorber dispersion as described in examples 1 to 4	8.00
Part D	Phenoxyethanol (and) Methylparaben (and) Ethylparaben (and) Butylparaben (and) Propylparaben (and) Isobutylparaben Steareth-10 Allyl Ether/Acrylates Copolymer	0.70 1.50
Part E	Water (and) Sodium Hydroxide	qs

<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
Part F Fragrance	qs

Manufacturing instruction:

Part A and B are heated separately up to 75°C, part C is heated to 60°C. Afterwards part B is poured into part A under stirring. The mixture is homogenized with an Ultra Turrax for 30 sec. at 11 000 rpm and part C is incorporated. After cooling down to 40°C part D is added. At room temperature the pH-value is adjusted with Sodium Hydroxide between 6.30 and 6.70 and part F is added.

Example 14: Sunscreen Cream

<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
Part A Cetearyl Alcohol (and) Dicaprylyl Phosphate (and) Ceteth-10 Phosphate	4.50
C12-15 Alkyl Benzoate	6.00
Caprylic/Capric Triglyceride	7.00
Pentaerythritol Tetraisostearate	2.00
Ethylhexyl Methoxycinnamate	3.00
Isoamyl p-Methoxycinnamate	2.00
Part B Aqua	qs to 100
Glycerin	2.00
Propylene Glycol	1.50
Magnesium Aluminium Silicate	1.20
Part C Steareth-10 Allyl Ether/Acrylates Copolymer	0.50
UV-absorber dispersion as described in examples 1 to 4	12.00
Part D Phenyl Trimethicone	1.50
Phenoxyethanol (and) Methylparaben (and) Butylparaben (and) Ethylparaben (and) Propylparaben	0.70
Part E Sodium Hydroxide	0.90

Manufacturing instruction:

Part A and part B are heated separately to 75°C. Part B is added into part A under continuous stirring and afterwards homogenized with Ultra Turrax for 30sec at 11000 rpm . After cooling down to 60°C part C is added. At 40°C part C is added and homogenized for 15sec at 11000 rpm. At room temperature the pH-value is adjusted with part E.

Example 15: UVA/UVB Daily Care Lotion, type O/W

	<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
Part A	Glyceryl Stearate (and) PEG-100 Stearate	5.00
	Stearyl Alcohol	1.00
	Tripalmitin	0.70
	Mineral Oil	15.00
Part B	Water	qs to 100
	Polysorbate 60	0.50
	Glycerin	3.00
Part C	Water	10.00
	UV-absorber dispersion as described in examples 1 to 4	8.00
Part D	Steareth-10 Allyl Ether/Acrylates Copolymer	1.50
	Phenoxyethanol (and) Methylparaben (and) Ethylparaben (and) Butylparaben (and) Propylparaben (and) Isobutylparaben	0.70
	Water (and) Sodium Hydroxide	qs
Part F	Fragrance	qs

Manufacturing instruction:

Part A and B are heated separately to 75°C; part C to 60°C. Part B is poured into part A under stirring. After one-minute of homogenization at 11000 rpm part C is added to the mixture of A/B. After cooling down to 40°C part D is incorporated. At room temperature the pH value is adjusted with part E between 6.3 and 7.0. Finally part F is added.

Example 16: UVA/UVB Daily Care Lotion, type O/W

	<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
Part A	Oleth-3 Phosphate	0.60
	Steareth-21	2.50
	Steareth-2	1.00
	Cetyl Alcohol	0.80
	Stearyl Alcohol	1.50
	Tribehenin	0.80
	Isohexadecane	8.00
Part B	Water	qs to 100
	Glycerin	2.00

	<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
	Disodium EDTA	0.10
Part C	Cyclopentasiloxane	4.50
	PEG-12 Dimethicone	2.00
Part D	Sodium Acrylates Copolymer (and) Mineral Oil (and) PPG-1 Trideceth-6	1.50
Part E	UV-absorber dispersion as described in examples 1 to 4	10.00
Part F	Tocopheryl Acetate	0.45
	DMDM Hydantoin (and) Iodopropynyl Butylcarbamate (and) Aqua (and) Butylene Glycol	0.85
Part G	Water (and) Citric Acid	qs
	Fragrance	qs

Manufacturing instruction:

Part A and part B are heated separately to 75°C. Part A is poured into part B under stirring. Immediately after the emulsification, part C is added to the mixture and homogenized with an Ultra Turrax at 11000 rpm for 30 sec. After cooling down to 65°C Sodium Acrylates Copolymer (and) Mineral Oil (and) PPG-1 Trideceth-6 At 50°C is added slowly to the UV absorber dispersion. At about 35-30°C part F is incorporated. The pH is adjusted with part G between 5.5 and 6.5.

Example 17: UV-A/UV-B Every Day Protection Lotion O/W

	<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
Part A	Glyceryl Dilaurate	2.00
	Ethylhexyl Palmitate	6.00
	Cetyl Alcohol	1.00
	Glyceryl Stearate	2.00
	Laureth-23	1.00
	Isopropyl Palmitate	2.00
	Tribehenin	0.80
	Beeswax	1.50
	Lanolin Oil	1.00
Part B	Water	qs to 100
	Propylene Glycol	4.00
	Water (and) Titanium Dioxide (and) Alumina (and) Sodium Meta-	4.00

	<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
Part C	phosphate (and) Phenoxyethanol (and) Sodium Methylparaben Steareth-10 Allyl Ether/Acrylates Copolymer	1.00
Part D	Phenoxyethanol (and) Methylparaben (and) Ethylparaben (and) Butylparaben (and) Propylparaben (and) Isobutylparaben UV-absorber dispersion as described in examples 1 to 4	1.00 8.00
Part E	Water (and) Sodium Hydroxide	qs

Manufacturing instruction:

Part A and part B are heated separately up to 80°C. Part A is poured into part B while stirring and homogenized with an Ultra Turrax by 11000 rpm for 30 sec. After cooling down to 60°C part C is incorporated. At 40°C part D is added slowly under continuous stirring. The pH is adjusted with part E between 6.50 - 7.00.

Example 18: Sprayable Sunscreen Lotion

	<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
Part A	Potassium Cetyl Phosphate	0.20
	Isohexadecane	7.00
	VP/Eicosene Copolymer	1.50
	Di-C12-13 Alkyl Tartrate	6.00
	Ethylhexyl Triazone	2.50
	C12-15 Alkyl Benzoate	4.50
Part B	Water	qs to 100
	Sorbeth-30	2.00
	Sorbitan Stearate (and) Sucrose Cocoate	4.00
	Titanium Dioxide (and) Alumina (and) Silica (and) Sodium Polyacrylate	2.50
Part C	Water	30.00
	UV-absorber dispersion as described in examples 1 to 4	12.00
Part D	Phenoxyethanol (and) Methylparaben (and) Ethylparaben (and) Butylparaben (and) Propylparaben (and) Isobutylparaben	0.70
Part E	Water (and) Citric Acid	qs

Manufacturing instruction:

Part A and part B are heated separately up to 80°C, part C is heated to 50°C. Part B is poured into part A and homogenized with an Ultra Turrax for 1 minute at 11000 rpm. After

cooling down to 50°C part C is added under continuous stirring. At 40°C part D is incorporated and homogenized again for 10 sec. at 11000 rpm. The pH is adjusted with part E.

Example 19: O/W Every Day UV Protection Lotion

	<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
Part A	Glyceryl Stearate (and) PEG-100 Stearate	5.00
	Stearyl Alcohol	1.00
	Tripalmitin	0.70
	Dimethicone	2.00
	Caprylic/Capric Triglyceride	5.00
	Isopropyl Palmitate	5.00
	Ethylhexyl Methoxycinnamate	3.00
Part B	Water	qs to 100
	Polysorbate 60	0.50
	Glycerin	3.00
Part C	Water	10.00
	UV-absorber dispersion as described in examples 1 to 4	8.00
Part D	Phenoxyethanol (and) Methylparaben (and) Ethylparaben (and) Butylparaben (and) Propylparaben (and) Isobutylparaben	0.70
	Steareth-10 Allyl Ether/Acrylates Copolymer	1.50
	Part E	Water (and) Sodium Hydroxide
Part F	Fragrance	qs

Manufacturing instruction:

Part A and part B are heated separately up to 75°C, part C is heated to 60°C. Afterwards part B is poured into part A under stirring. The mixture is homogenized with an Ultra Turrax for 30 sec. at 11 000 rpm and part C is incorporated. After cooling down to 40°C part D is added. At room temperature the pH-value is adjusted with Sodium Hydroxide between 6.30 and 6.70 and part F is added.

Example 20: Water resistant Sunscreen Emulsion

	<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
Part A	Polyglyceryl-10 Pentastearate (and) Behenyl Alcohol (and) Sodium Stearoyl Lactylate	2.50

	<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
	VP/Eicosene Copolymer	1.50
	Stearyl Alcohol	1.50
	Squalane	4.00
	C12-15 Alkyl Benzoate	7.50
	Octocrylene	1.50
	4-Methylbenzylidene Camphor	3.00
	Ethylhexyl Methoxycinnamate	2.00
Part B	Water	qs to 100
	Glycerin	1.80
	Steareth-10 Allyl Ether/Acrylates Copolymer	0.80
Part C	UV-absorber dispersion as described in examples 1 to 4	9.00
Part D	VP/Hexadecene Copolymer	2.70
	Cyclomethicone	1.50
	Phenoxyethanol (and) Methylparaben (and) Ethylparaben (and) Butylparaben (and) Propylparaben (and) Isobutylparaben	0.70
Part E	Aqua (and) Tocopheryl Acetate (and) Caprylic/Capric Triglyceride (and) Polysorbate 80 (and) Lecithin	3.50
Part F	Fragrance	qs
	Water (and) Sodium Hydroxide	qs

Manufacturing instruction:

Part A and part B are heated separately to 80°C. Part A is poured into part B under continuous stirring. Afterwards the mixture is homogenized with an Ultra Turrax at 11 000 rpm for 1 min. After cooling down to 60°C part C is incorporated. At 40°C part D is added and the mixture homogenized for a short time again. At 35°C part E is added and at room temperature Fragrance is added. Finally the pH is adjusted with Sodium Hydroxide.

Example 21: UVA/UVB Sun Protection Lotion, O/W type

	<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
Part A	Potassium Cetyl Phosphate	2.00
	Tricontanyl PVP	1.00
	Caprylic/Capric Triglyceride	5.00
	C12-15 Alkyl Benzoate	5.00
	Cetearyl Isononanoate	5.00

	<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
	Glyceryl Stearate	3.00
	Cetyl Alcohol	1.00
	Dimethicone	0.10
	Ethylhexyl Methoxycinnamate	5.00
Part B	Water	qs to 100
	Glycerin	3.00
Part C	Steareth-10 Allyl Ether/Acrylates Copolymer	0.50
Part D	UV-absorber dispersion as described in examples 1 to 4	8.00
Part E	Phenoxyethanol (and) Methylparaben (and) Ethylparaben (and) Butylparaben (and) Propylparaben (and) Isobutylparaben	1.00
Part F	Water (and) Sodium Hydroxide	qs to pH 7.00
Part G	Fragrance	qs

Manufacturing instruction:

Part A and part B are heated separately up to 80°C. Part B is poured into part A under moderate stirring. The mixture is homogenized with an Ultra Turrax at 11000 rpm for 1 minute. After cooling down to 70°C part C is added under stirring. After cooling further down to 50°C part D is incorporated very slowly. At 40°C part E is added. At room temperature the pH is adjusted with part F to 7.00 and part G is added.

Example 22: UVA/UVB Sun Protection Lotion, O/W type

	<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
Part A	Potassium Cetyl Phosphate	2.00
	Tricontanyl PVP	1.00
	Caprylic/Capric Triglyceride	5.00
	C12-15 Alkyl Benzoate	5.00
	Cetearyl Isononanoate	5.00
	Glyceryl Stearate	3.00
	Cetyl Alcohol	1.00
	Dimethicone	0.10
	Ethylhexyl Methoxycinnamate	5.00
Part B	Water	qs to 100

	<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
	Glycerin	3.00
Part C	Steareth-10 Allyl Ether/Acrylates Copolymer	0.50
Part D	UV-absorber dispersion as described in examples 1 to 4	20.00
Part E	Phenoxyethanol (and) Methylparaben (and) Ethylparaben (and) Butylparaben (and) Propylparaben (and) Isobutylparaben	1.00
Part F	Water (and) Sodium Hydroxide	qs to pH 7.00
Part G	Fragrance	qs

Manufacturing instruction:

Part A and part B are heated separately up to 80°C. Part B is poured into part A under moderate stirring. The mixture is homogenized with an Ultra Turrax at 11000 rpm for 1 minute. After cooling down to 70°C add part C is added under stirring. After cooling further down to 50°C part D is incorporated very slowly. At 40°C part E is added. At room temperature the pH is adjusted with part F to 7.00 and part G is added.

Example 23: Sunscreen Lotion

	<u>INCI-Name</u>	<u>% w/w</u> <u>(as supplied)</u>
Part A	Cetaryl Alcohol (and) Dicetyl Phosphate (and) Ceteth-10 Phosphate	4.00
	C12-15 Alkyl Benzoate	2.00
	Dicaprylyl Ether	3.00
	Ethoxydiglycol Oleate	2.00
	Stearic Acid	1.00
	Ethylhexyl Methoxycinnamate	3.00
	Sodium Acrylates Copolymer (and) Glycine Soja (and) PPG-1 Trideceth-6	0.30
	Squalane	3.50
	VP/Eicosene Copolymer	2.00
	Part B	Water
UV-absorber dispersion as described in examples 1 to 4		5.00
Part C	Diazolidinyl Urea (and) Iodopropynyl Butylcarbamate	0.15
	Propylene Glycol	2.50
	Water	10.00
Part D	Cyclopentasiloxane (and) Dimethiconol	2.00

	<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
	Ethoxydiglycol	5.00
	Cyclopentasiloxane (and) Dimethicone/Vinyl Dimethicone Crosspolymer	2.00
Part E	Aqua (and) Sodium Hydroxide	qs
Part F	Fragrance	qs

Manufacturing instruction

Part A and part B are heated separately up to 75°C. Part B is poured into part A under progressive stirring speed. At a temperature < 65°C the ingredients of part D are added separately. After cooling down to 55°C under moderate stirring part C is added. At a temperature < 35°C the pH is checked and adjusted with Sodium Hydroxide and homogenized with an Ultra Turrax for 30 sec. at 11 000 rpm. Part F is added at room temperature.

Example 24: W/O Sunscreen Lotion

	<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
Part A	PEG-7 Hydrogenated Castor Oil	3.00
	Polyglyceryl-3 Diisostearate	4.00
	Microcrystalline Wax	1.00
	Magnesium Stearate	1.50
	Propylparaben	0.10
	Mineral Oil	15.00
	Octyldodecanol	8.00
	Ethylhexyl Triazone	1.00
	Ethylhexyl Methoxycinnamate	2.00
Part B	Water	qs to 100
	Water (and) Citric Acid	0.05
	Methylparaben	0.15
	Magnesium Sulfate	0.50
Part C	UV-absorber dispersion as described in example 1 or 2	9.00
	Fragrance	qs

Manufacturing instruction:

Part A is heated to 80°C whilst stirring. Part B is added into part A and homogenized with an Ultra Turrax at 11 000 rpm for one minute. After cooling down to 30°C part C is incorporated.

Example 25: Skin Protection Sunscreen Lotion W/O

	<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
Part A	Polyglyceryl-2 Dipolyhydroxystearate	3.00
	Glyceryl Oleate	3.00
	Cetearyl Isononanoate	7.00
	Hexyl Laurate	6.00
	Dicaprylyl Ether	6.00
	Propylparaben	0.10
	Hexyldecanol	3.00
	Magnesium Stearate	1.00
	Beeswax	1.00
	Ethylhexyl Methoxycinnamate	4.00
Part B	Water	qs to 100
	Methylparaben	0.15
	Magnesium Sulfate	1.00
Part C	UV-absorber dispersion as described in examples 1 to 4	6.00

Manufacturing instruction:

Part A is heated separately to 80°C under gentle stirring. Part B is added to part A and homogenized for one minute at 11000 rpm. After cooling down to 30°C part C is added under continuous stirring.

Example 26: OW emulsion

	<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
Part A	UV absorber of formula (MC 14)	3 g
	sesame oil	10 g
	glyceryl stearate	4 g
	stearic acid	1 g
	cetyl alcohol	0.5 g

	<u>INCI-Name</u>	<u>% w/w (as supplied)</u>
	polysorbate 20	0.2 g
Part B	propylene glycol	4 g
	propylparaben	0.05 g
	methylparaben	0.15 g
	triethanolamine	0.1 g
	carbomer 934	0.1 g
	<u>water</u>	ad 100 ml

Preparation of the emulsion

Phase (A):

Firstly, the UV absorber is dissolved in sesame oil. The other components of (A) are added thereto and combined.

Phase (B):

Propylparaben and methylparaben are dissolved in propylene glycol. 60 ml of water are then added, heating to 70°C is carried out and then carbomer 934 is emulsified therein.

Emulsion:

(A) is slowly added to (B) with vigorous application of mechanical energy. The volume is adjusted to 100 ml by the addition of water.

Example 27: Daily care cream, type O/W

	<u>INCI name</u>	<u>% w/w (as used)</u>
Part A	Glyceryl stearate (and) cetearyl alcohol (and) cetyl palmitate (and) cocoglycerides	4.0
	Ceteareth-12	4.0
	Cetearyl alcohol	2.0
	Dicaprylyl ether	4.5
	Ethylhexyl stearate	4.0
	Hexyl laurate	3.5
	Ethylhexyl triazone	1.0
	Benzylidene malonate polysiloxane	2.0
	HDI/trimethylol hexyl-lactone crosspolymer (and) silica	5.0

	<u>INCI name</u>	<u>% w/w (as used)</u>
	Stearyl dimethicone	1.0
	Dimethicone	2.0
	Cetyl alcohol	0.8
	compound of formula (MC 14)	2.0
Part B	Water	q.s. to 100
	Water (and) scleroglucan (and) phenoxyethanol	2.0
	Glycerol	2.0
Part C	Steareth-10 allyl ether/acrylate copolymer	0.45
	Phenoxyethanol (and) methylparaben (and) ethylparaben (and) butylparaben (and) propylparaben (and) isobutylparaben	0.7
Part D	Aqua (and) tocopheryl acetate (and) caprylic/capric triglyceride (and) polysorbate 80 (and) lecithin	4.0
Part E	Water (and) sodium hydroxide	q.s.
	Fragrance	q.s.

Preparation procedure:

Part A and part B are heated separately to 80°C. Part A is poured into part B, whilst stirring continuously. Afterwards the mixture is homogenized with an Ultra Turrax at 11 000 rpm for 20 sec.. The mixture is cooled to 60°C and part C is added. At a temperature below 30°C, part D is added and the pH value is adjusted with sodium hydroxide to between 6.5 and 7.0. Finally, fragrance is added.

Example 28: Sun-protection cream, type O/W

	<u>INCI name</u>	<u>% w/w (as used)</u>
Part A	Polyglyceryl-3 methylglucose distearate	2.0
	Decyl oleate	5.7
	Isopropyl palmitate	5.8
	Caprylic/capric triglyceride	6.5
	compound of formula (MC 14)	2.0
	Ethylhexyl methoxycinnamate	5.0
	Cetyl alcohol	0.7
Part B	Glycerol	3.0
	Carbomer	0.3
	Water	q.s. to 100

	<u>INCI name</u>	<u>% w/w (as used)</u>
Part C	Phenoxyethanol (and) methylparaben (and) ethylparaben (and) butylparaben (and) propylparaben (and) isobutylparaben	0.5
Part D	Methylene bis-benzotriazolyl tetramethylbutylphenol (and) aqua (and) decyl glucoside (and) propylene glycol (and) xanthan gum	8.0
	Water	20.0
Part E	Water (and) sodium hydroxide	q.s.
	Fragrance	q.s.

Preparation procedure

Part A and part B are heated separately to 75°C. Part A is poured into part B whilst stirring. The mixture is homogenised with an Ultra Turrax at 11 000 rpm for 15 sec. The mixture is cooled to 60°C and part C and part D are incorporated. The mixture is homogenised again for a short time (5 sec./11 000 rpm) and further cooled, with moderate stirring. At room temperature, the pH is adjusted with sodium hydroxide solution to between 5.5 and 6.0. Finally, fragrance is added.

Example 29: Daily care UV-protection lotion

	<u>INCI name</u>	<u>% w/w (as used)</u>
Part A	Oleth-3 phosphate	0.6
	Steareth-21	2.5
	Steareth-2	1.0
	Cetyl alcohol	0.8
	Stearyl alcohol	1.5
	Tribehenin	0.8
	Isohexadecane	8.0
	compound of formula (MC 14)	5.0
Part B	Water	q.s. to 100
	Glycerol	2.0
	Methylene bis-benzotriazolyl tetramethylbutylphenol (and) aqua (and) decyl glucoside (and) propylene glycol (and) xanthan gum	3.0
	Disodium EDTA	0.1
Part C	Water	20.0
	Diazolidinyl urea (and) iodopropynyl butylcarbamate	0.15
	Propylene glycol	4.0

	<u>INCI name</u>	<u>% w/w (as used)</u>
Part D	Sodium acrylate copolymer (and) liquid paraffin (and) PPG-1 trideceth-6	1.5
	Cyclopentasiloxane	4.5
	PEG-12 dimethicone	2.0
	Tocopheryl acetate	0.45
	Water (and) citric acid	q.s.
Part E	Fragrance	q.s.

Preparation procedure

Heat part A and part B separately to 75°C. Pour part A into part B, whilst stirring continuously. Immediately after emulsification, incorporate in the mixture SF 1202 and SF 1288 from part D. Afterwards homogenise with an Ultra Turrax at 11 000 rpm for 30 sec.. Allow to cool to 65°C and incorporate SALCARE® SC91. At a temperature below 50°C, add part C. At 35°C or below, incorporate vitamin E acetate and subsequently adjust the pH with citric acid. At room temperature, add part E.

Example 30: Sun-protection cream, type O/W

	<u>INCI name</u>	<u>% w/w (as used)</u>
Part A	Polyglyceryl-3 methylglucose distearate	2.0
	Decyl oleate	5.7
	Isopropyl palmitate	5.8
	Caprylic/capric triglyceride	6.5
	compound of formula (MC 14)	2.0
	Ethylhexyl methoxycinnamate	5.0
	Cetyl alcohol	0.7
Part B	Glycerol	3.0
	Carbomer	0.3
	Water	q.s. to 100
Part C	Phenoxyethanol (and) methylparaben (and) ethylparaben (and) butylparaben (and) propylparaben (and) isobutylparaben	0.5
Part D	Methylene bis-benzotriazolyl tetramethylbutylphenol (and) aqua	8.0
	(and) decyl glucoside (and) propylene glycol (and) xanthan gum Water	20.0
Part E	Water (and) sodium hydroxide	q.s.

<u>INCI name</u>	<u>% w/w</u> <u>(as used)</u>
Fragrance	q.s.

Preparation procedure:

Part A and part B are heated separately to 75°C. Part A is poured into part B whilst stirring. The mixture is homogenised with an Ultra Turrax at 11 000 rpm for 15 sec.. The mixture is cooled to 60°C, and part C and part D are incorporated. The mixture is homogenised again for a short time (5 sec./11 000 rpm). After further cooling, with moderate stirring, the pH is adjusted with sodium hydroxide at room temperature. A solution between pH 5.50 and 6.00 is obtained. Finally, fragrance is added.

Example 31: Sun-protection cream, type O/W

<u>INCI name</u>	<u>% w/w</u> <u>(as used)</u>
Part A Polyglyceryl-3 methylglucose distearate	2.0
Decyl oleate	5.7
Isopropyl palmitate	5.8
Caprylic/capric triglyceride	6.5
Mixture of the compound of formula (MC 14) (50 %) and Uvinul A Plus CAS Reg. No. 302776-68-7 (50 %)	2.0
Ethylhexyl methoxycinnamate	5.0
Cetyl alcohol	0.7
Part B Glycerol	3.0
Carbomer	0.3
Water	q.s. to 100
Part C Phenoxyethanol (and) methylparaben (and) ethylparaben (and) butylparaben (and) propylparaben (and) isobutylparaben	0.5
Part D Methylene bis-benzotriazolyl tetramethylbutylphenol (and) aqua (and) decyl glucoside (and) propylene glycol (and) xanthan gum	8.0
Water	20.0
Part E Water (and) sodium hydroxide	q.s.
Fragrance	q.s.

Preparation procedure:

Part A and part B are heated separately to 75°C. Part A is poured into part B whilst stirring. The mixture is homogenised with an Ultra Turrax at 11 000 rpm for 15 sec.. After cooling 60°C, part C and part D are incorporated. The mixture is homogenised again for a short time

(5 sec./11 000 rpm). After further cooling, with moderate stirring, the pH is adjusted at room temperature with sodium hydroxide solution to between 5.50 and 6.00. Finally, fragrance is added.

Example 32: Sun-protection cream, type O/W

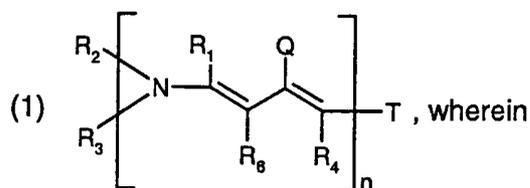
<u>INCI name</u>	<u>% w/w (as used)</u>
Part A Polyglyceryl-3 methylglucose distearate	2.0
Decyl oleate	5.7
Isopropyl palmitate	5.8
Caprylic/capric triglyceride	6.5
Mixture of compound of formula (MC 14) (50 %) and benzylidene camphor, CAS Reg. No. 36861-47-9 (50 %)	2.0
Ethylhexyl methoxycinnamate	5.0
Cetyl alcohol	0.7
Part B Glycerol	3.0
Carbomer	0.3
Water	q.s. to 100
Part C Phenoxyethanol (and) methylparaben (and) ethylparaben (and) butylparaben (and) propylparaben (and) isobutylparaben	0.5
Part D Methylene bis-benzotriazolyl tetramethylbutylphenol (and) aqua (and) decyl glucoside (and) propylene glycol (and) xanthan gum	8.0
Water	20.0
Part E Water (and) sodium hydroxide	q.s.
Fragrance	q.s.

Preparation procedure

Part A and part B are heated separately to 75°C. Part A is poured into part B whilst stirring. The mixture is homogenised with an Ultra Turrax at 11 000 rpm for 15 sec.. After cooling to 60°C, part C and part D are incorporated. The mixture is homogenised again for a short time (5 sec./11 000 rpm). After further cooling, with moderate stirring, the pH is adjusted at room temperature with sodium hydroxide. A solution between pH 5.50 and 6.00 is obtained. Finally, fragrance is added.

Claims:

1. Use of the compounds of formula



- Q is hydrogen; C₁-C₂₂alkyl; -OH; -OR₇; -NR₇R₈; or -N=R₉;
- R₁ is hydrogen; C₁-C₂₂alkyl; -OR₇, -SR₇; -NR₇R₈; C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; C₁-C₁₂heteroalkyl, C₂-C₁₁heteroaryl; C₆-C₁₀aryl; or C₁-C₉heteroaryl;
- R₄ is cyano; COR₇, COOR₇; CONR₇R₈; SO₂(C₆-C₁₂)aryl; C₂-C₁₂alk-1-enyl; C₃-C₁₂cycloalk-1-enyl; C₂-C₁₂alk-1-inyl; C₂-C₁₂heteroalkyl; C₃-C₅heterocycloalkyl; C₆-C₁₀aryl; or C₁-C₉heteroaryl;
- R₅ is -COR₇; -COOR₇; -OR₇; -SR₇, -NHR₇, -NR₇R₈; C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; C₁-C₁₂alkylphenyl; C₁-C₁₂alkoxy-C₆-C₁₀aryl; C₁-C₁₂heteroalkyl; C₂-C₁₁heteroaryl; C₃-C₁₂cycloheteroalkyl; C₆-C₁₀aryl; C₁-C₁₂alkoxy-C₆-C₁₀aryl; or C₁-C₉heteroaryl;
- R₆ is hydrogen; C₁-C₂₂alkyl; C₁-C₂₂alkoxy; or COR₇;
- R₇ and R₈ independently from each other are hydrogen; C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; -(CH₂)_tCOOH; C₇-C₁₂aralkyl; C₁-C₁₂heteroalkyl; C₂-C₁₁heteroaryl; C₆-C₁₀aryl; C₁-C₉heteroaryl; Si-R₁₀R₁₁R₁₂; Si(OR₁₀)(OR₁₁)(OR₁₂); SiR₁₀(OR₁₁)(OR₁₂); SiR₁₀R₁₁(OR₁₂); -(CH₂)_u-O-(CH₂)_v-SiR₁₀R₁₁R₁₂; or a radical X-Sil;
- t, u and v, independently from each other are a number from 1 to 5;
- R₉ is a (C₁-C₆)alkylidene radical;
- R₁₀, R₁₁, R₁₂ independently from each other are C₁-C₂₂alkyl;
- X is a linker;
- Sil is a silane-, oligosiloxane- or polysiloxane radical;
- R₁ and R₂, R₁ and Q, R₁ and R₆, R₁ and T, R₂ and R₃, R₂ and R₄, R₂ and R₆, R₂ and Q, R₄ and R₆, R₄ and T, R₆ and Q, T and Q, each independently, are linked together, so that 1, 2, 3 or 4 carbocyclic or N, O and/or S-heterocyclic rings are formed, wherein each of them, independently from each other, may be condensed with an aromatic or

- R₂ and R₃ independently from each other are C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl, C₃-C₁₂cycloalkenyl; C₇-C₁₂ aralkyl; C₁-C₁₂heteroalkyl; C₃-C₁₂cycloheteroalkyl; C₂-C₁₁heteroaralkyl, C₆-C₁₀aryl; or C₁-C₉heteroaryl;
- R₄ is cyano; COR₇, COOR₇; CONR₇R₈; SO₂(C₆-C₁₂)aryl, C₂-C₁₂alk-1-enyl; C₃-C₁₂cycloalk-1-enyl; C₂-C₁₂alk-1-inyl; C₂-C₁₂heteroalkyl, C₃-C₅heterocycloalkyl, C₆-C₁₀aryl; or C₁-C₉heteroaryl;
- R₅ is -COR₇; -COOR₇; -OR₇; -SR₇; -NR₇R₈; C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; C₁-C₁₂alkylphenyl; C₁-C₁₂alkoxy-C₆-C₁₀aryl; C₁-C₁₂heteroalkyl; C₂-C₁₁heteroaralkyl; C₃-C₁₂cycloheteroalkyl; C₆-C₁₀aryl; C₁-C₁₂alkoxy-C₆-C₁₀aryl or C₁-C₉heteroaryl;
- R₆ is C₁-C₂₂alkyl; C₁-C₂₂alkoxy; or COR₇;
- R₇ and R₈ independently from each other are hydrogen; C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; C₁-C₁₂heteroalkyl; C₂-C₁₁heteroaralkyl; C₆-C₁₀aryl; o-C₆-C₁₀aryl; or C₁-C₉heteroaryl;
- R₉ is a (C₁-C₆)alkylidene radical; or
- R₁ and R₂, R₁ and Q, R₁ and R₄, R₁ and R₆, R₂ and R₃, R₃ and Q, R₆ and Q, T and Q, each independently, are linked together, so that 1, 2, 3 or 4 carbocyclic or N, O and/or S-heterocyclic rings are formed, wherein each of them, independently from each other, may be condensed with an aromatic or heteroaromatic ring, and/or more N-, O- and/or S-heterocyclic rings, and each N atom in a N-heterocyclic ring may be substituted by C₁-C₂₂alkyl; and
- n is 1.

3. Use according to claim 1 or 2, wherein

- Q is -OH; -OR₆; or -NR₇R₈;
- T is -COR₅ -CN; or -SO₂-(C₆-C₁₂)aryl;
- R₁ is hydrogen; -OR₇, -SR₇; -NR₇R₈; C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; or C₆-C₁₀aryl;
- R₂ and R₃ independently from each other are C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂ aralkyl; or C₆-C₁₀aryl;
- R₄ is cyano; -COR₅, -COOR₇; -CONR₇R₈; -SO₂(C₆-C₁₂)aryl; -C₁-C₂₂alkylcarbonylamino-C₆-C₁₀aryl; or C₆-C₁₀aryl;

R₅ is -COR₇; -COOR₇; -CONR₇R₈, -OR₇, -SR₇, -NR₇R₈, C₁-C₂₂alkyl; C₂-C₁₂alkenyl; C₂-C₁₂alkinyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; C₆-C₁₀aryl; or C₁-C₁₂alkoxy-C₆-C₁₀aryl;

R₆, R₇ and R₈ independently from each other are hydrogen; C₁-C₂₂alkyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; or C₆-C₁₀aryl; or

R₁ and R₂, R₁ and Q, R₁ and R₄, R₁ and R₆, R₂ and R₃, R₃ and Q, R₆ and Q, T and Q are linked together pairwise, so that 1, 2, 3 or 4 carbocyclic or N-, O- and/or S-heterocyclic rings are formed, wherein each of them, independently from each other may be condensed with an aromatic or heteroaromatic ring, and/or more N, O and/or S-heterocyclic rings, and each N atom in a N-heterocyclic ring may be substituted by C₁-C₂₂alkyl.

4. Use according to any of claims 1 to 3, wherein in formula (1)

R₁ is hydrogen; -S-C₁-C₂₂alkyl; or R₁ and R₂, or R₁ and R₄ together with the linking nitrogen atom form an alkylene radical which may be interrupted by one or more -O- and/or -NR₇- or may be condensed with an aromatic ring; and

R₇ is C₁-C₂₂alkyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; or C₆-C₁₀aryl.

5. Use according to claim 4, wherein in formula (1)

R₁ is hydrogen.

6. Use according to any of claims 1 to 5, wherein in formula (1)

R₂ and R₃ independently from each other are C₁-C₅alkyl; phenyl-C₁-C₃alkyl; hydroxy-C₁-C₁₂alkyl; or R₂ and R₃, or R₂ and R₄, or R₂ and Q together with the linking nitrogen atom form an alkylene radical which may be interrupted by one or more -O- and/or -NR₇- or may be condensed with an aromatic ring; and

R₇ is C₁-C₂₂alkyl; C₃-C₁₂cycloalkyl; C₃-C₁₂cycloalkenyl; C₇-C₁₂aralkyl; or C₆-C₁₀aryl.

7. Use according to claim 6, wherein

R₂ and R₃ independently from each other are C₁-C₅alkyl; or R₂ and R₃ together with the linking nitrogen atom form a C₂-C₄alkylene radical which may be interrupted by -O- or -NR₇; and

R₇ is hydrogen; or C₁-C₅alkyl.

8. Use according to any of claims 1 to 7, wherein in formula (1)

R₄ is -COR₅; phenyl, which is optionally substituted by C₁-C₅alkyl; -CN; or -SO₂-(C₆-C₁₀)aryl;
or

R₄ and T together with a bivalent C₃-C₇alkylene radical which may be interrupted by one or more -O- and/or -NR₇- form a carbocyclic ring which may be condensed with an aromatic ring; and

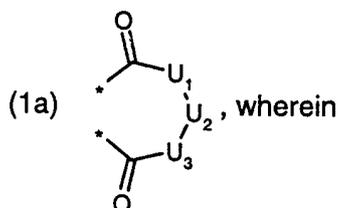
R₇ is hydrogen; or C₁-C₅alkyl.

9. Use according to claim 8 wherein

R₄ is -CN; or COR₅;

R₅ is C₁-C₁₂alkyl; or C₁-C₁₂alkoxy; or

R₄ and T together with the bivalent radical of the formula

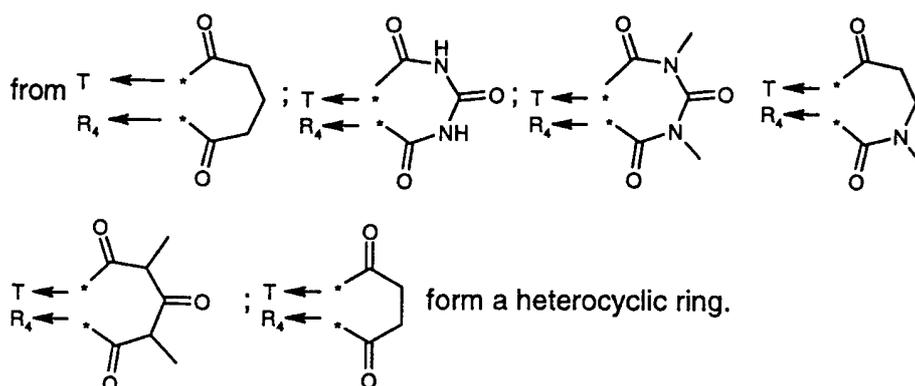


U₁ and U₃ independently from each other are a radical of formula -CHR₇; -NHR₇; or -O-;

U₂ is -CH₂; or -CO-; or the direct bond;

R₇ is hydrogen; or C₁-C₁₂alkyl; form an aromatic ring.

10. Use according to claim 9, wherein T and R₄ together with the bivalent radicals selected



11. Use according to any of claims 1 to 10, wherein in formula (1)

R₆ is hydrogen; C₁-C₅alkyl; C₁-C₅alkoxy; -O-(C₆-C₁₀aryl); or

R₆ and Q together with a bivalent C₃-C₇alkylene radical which may be interrupted by one or more -O- and/or -NR₇- or may be condensed with an aromatic ring, form a heterocyclic ring; and

R₇ is hydrogen; or C₁C₁₂alkyl.

12. Use according to claim 11, wherein

R₆ is hydrogen.

13. Use according to any of claims 1 to 11, wherein in formula (1)

T is -CN; -COR₅; or -SO₂-phenyl;

R₅ is C₁-C₅alkyl; C₁-C₅alkoxy; or NR₇R₈;

R₇ and R₈ independently from each other are hydrogen; or C₁-C₅alkyl; or

T and Q together with the bivalent C₃-C₇alkylene radical which may be interrupted by one or more -O- and/or -NR₇- or may be condensed with an aromatic ring, form a heterocyclic ring.

14. Use according to claim 13, wherein

T is -CN; or -COR₅; and

R₅ is C₁-C₅alkyl; or C₁-C₅alkoxy.

15. Use according to claims 1 to 14, wherein

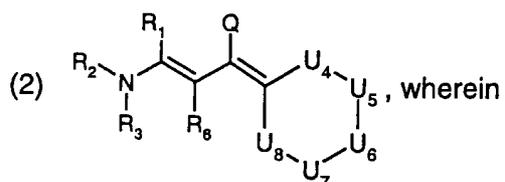
Q is hydroxy; C₁-C₅alkoxy; or -NR₇R₈; and

R₇ and R₈ independently from each other are hydrogen; C₁-C₅alkyl; or phenyl, which may be substituted by one or more C₁-C₅alkyl or C₁-C₅alkoxy groups.

16. Use according to claim 15, wherein

Q is hydroxy.

17. Use according to claim 1, which comprises compounds of formula

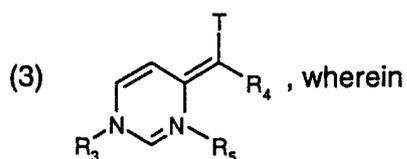


U₄, U₅, U₆, U₇ and U₈ independently of each other are -CHR₅-; -CO-; -NR₇-; -CS-; or -O-;

R₅ is hydrogen; or C₁-C₅alkyl; and

R₁, R₂, R₃, R₆, R₇ and Q are defined as in claim 1.

18. Use according to claim 1, which comprises compounds of formula



R₅ is hydrogen; or C₁-C₅alkyl; and

R₃, R₄, and T are defined as in claim 1.

19. Use according to claim 18, which refers to compounds of formula (3), wherein

R₃ is C₁-C₂₂alkyl; C₆-C₁₀aryl; or C₇-C₁₂aralkyl.

20. Use according to claim 18 or 19, which refers to compounds of formula (3), wherein

R₃ is C₆-C₁₀aryl.

21. Use according to any of claims 1 to 20, wherein at least one of the radicals R₁, R₆ or Q is different from hydrogen.

22. Use according to claim 1 wherein

Q is hydrogen; or C₁-C₂₂alkyl;

T is -COR₅; -CN; or -SO₂-(C₆-C₁₂)aryl;

R₁ is hydrogen; or C₁-C₂₂alkyl;

R₂ and R₃ independently from each other are C₁-C₂₂alkyl;

R₄ is CN; COR₅; CONH₂; or SO₂(C₆-C₁₂)aryl,

R₅ is -OR₇; -SR₇, -NHR₇, -NR₇R₈; C₁-C₂₂alkyl; C₇-C₁₂aralkyl;

R₇ and R₈ independently from each other are hydrogen; C₁-C₂₂alkyl; -(CH₂)_m-Si-R₁₀R₁₁R₁₂;

Si(OR₁₀)(OR₁₁)(OR₁₂); SiR₁₀(OR₁₁)(OR₁₂); SiR₁₀R₁₁(OR₁₂), or a radical X-Sil;

R₉ is a (C₁-C₆)alkylidene radical;

R₁₀, R₁₁, R₁₂ independently from each other are C₁-C₂₂alkyl;

X is a linker;

Sil is a silane-, oligosiloxane- or polysiloxane radical;

R₁ and R₂, R₁ and Q, R₁ and R₆, R₁ and T, R₂ and R₃, R₂ and R₄, R₂ and R₆, R₂ and Q, R₄

and R₆, R₄ and T, R₆ and Q, T and Q, each independently, are linked together, so that 1,

2, 3 or 4 carbocyclic or N, O and/or S-heterocyclic rings are formed, wherein each of them, independently from each other, may be condensed with an aromatic or heteroaromatic ring, and/or more N-, O- and/or S-heterocyclic rings, and each N atom in a N-heterocyclic ring may be substituted by C₁-C₂₂alkyl;

n is a number from 1 to 4; and

m is a number from 0 to 4; wherein at least one of the radicals R₁, R₆ or Q is different from hydrogen;

23. Use according to claim 22, wherein

R₁, R₆ and Q, independently from each other are hydrogen; or C₁-C₂₂alkyl, wherein at least one of R₁, R₆ and Q is different from hydrogen.

24. Use according to claim 22 or 23, wherein

R₁, R₆ and Q, independently from each other are hydrogen; or C₁-C₅alkyl, wherein at least one of R₁, R₆ and Q is different from hydrogen.

25. Use according to any of claims 21 to 24, wherein

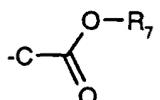
T and R₄ independently from each other are -COR₅; -CN; or -SO₂-(C₆-C₁₂)aryl; and

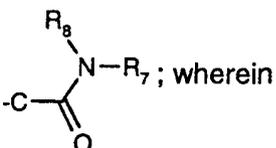
R₅ is -OR₇; -NR₇R₈; C₁-C₂₂alkyl; C₇-C₁₂aralkyl;

R₇ and R₈ independently from each other are hydrogen; C₁-C₂₂alkyl; -(CH₂)_m-Si-R₁₀R₁₁R₁₂;
and

R₁₀, R₁₁, and R₁₂ independently from each other are C₁-C₂₂alkyl.

26. Use according to any of claims 25, wherein

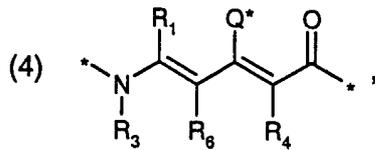
T and R₄ independently from each other are -CN; SO₂C₆H₅; ; or a radical of

formula ; wherein

R₇ and R₈, independently from each other are C₁-C₁₂alkyl; or a radical of formula -SiR₁₀R₁₁R₁₂; and

R₁₀, R₁₁ and R₁₂ are C₁-C₅alkyl.

27. Monomeric and polymeric compounds having the structural element of formula



wherein at least one of the asterix-marked radicals are joint with the monomeric or polymeric radical; and

R₁, R₂, R₄ and R₆ are defined as in claim (1).

28. Use of the compounds of formula (1) as as an anti-wrinkle perception modifier.

29. A cosmetic preparation comprising at least one compound of formula (1) according to claim 1 together with cosmetically tolerable carriers or adjuvants.

30. Cosmetic composition according to claim 29 wherein the compound of formula (1) is present in the composition in the micronized state.

31. UV absorber dispersion, comprising

(a) at least one micronised UV absorber of formula (1), each of them having a particle size from 0,02 to 2 μm , and

(b) a suitable dispersing agent.

Application No: GB0512335.1

Examiner: Dr Simon Grand

Claims searched: 1-27

Date of search: 15 November 2005

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1 and 27 at least	US 4457911 A (CONNER et al.) See whole document especially general formula (I).
X	1 and 27 at least	WO 03/068183 A (ROCHE VITAMINS AG) See generic formula (I) and CAS Abstract Acc. No.2003:656538.
X	1 and 27 at least	WO 2004/006878 A (CIBA SPEC. CHEM.) See whole document.
A,P	-	GB 2409203 A (CIBA SPEC. CHEM.) See whole document.
A,E	-	WO 2005/080341 A (DSM IP ASSETS BV) See generic formula (I).
X	27	WO 02/34710 A (CENTRE NAT. RECH. SCIENT.) See generic formula (1) and CAS Abstract Acc. No.2002:332154.
X	27	Khimiya Geterotsiklicheskih Soedinenii, 1988, Vol.(8), Dozorova et al., pp.1109-14. See CAS Abstract Acc. No. 1989:192759.
A,P	27	WO 2005/012228 A (CIBA SPEC. CHEM.) See examples and generic formula (I).

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application

Field of Search:



124

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^X :

A5B

Worldwide search of patent documents classified in the following areas of the IPC⁰⁷

A61K

The following online and other databases have been used in the preparation of this search report

ONLINE: EPODOC, WPI, CAS-ONLINE.