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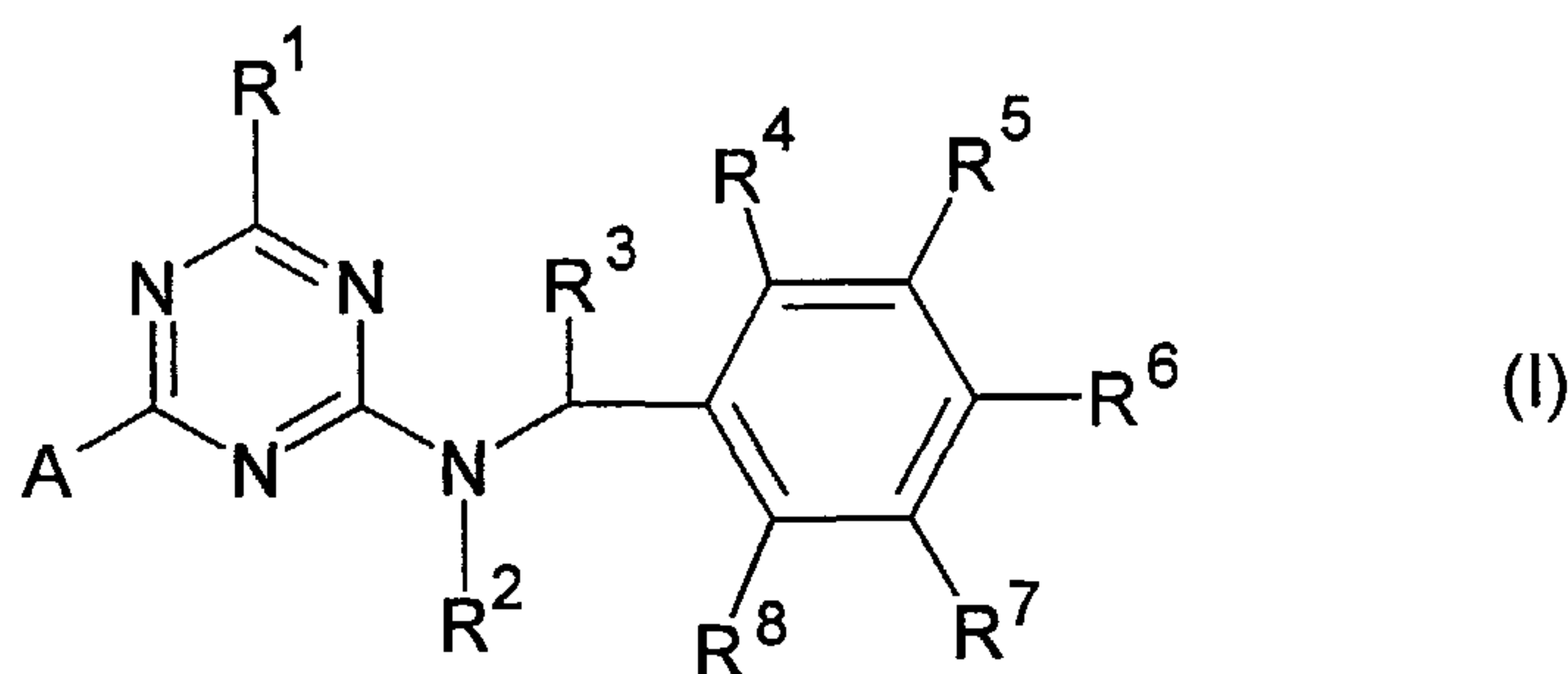
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(54) Titre : ALKYLAMINO-1,3,5-TRIAZINES, PROCÉDE DE PRÉPARATION ET LEUR UTILISATION COMME
HERBICIDES ET DE RÉGULATEURS DE LA CROISSANCE DES PLANTES

(54) Title: ALKYLAMINO-1,3,5-TRIAZINES, PROCESS FOR THEIR PREPARATION AND THEIR USE AS HERBICIDES
AND PLANT GROWTH REGULATORS



(57) **Abrégé/Abstract:**

The invention relates to alkyl-amino-1,3,5-triazines, to a method for producing them and to their use as herbicides and as plant growth regulators. Compounds of formula (I), wherein R¹, R², R³, R⁴, R⁵, R⁶, R⁷, R⁸ and A have the meanings given in claim n°1, and their salts are suitable for use as herbicides and plant growth regulators. Said compounds of formula (I) are produced according to the method provided in claim n°8.



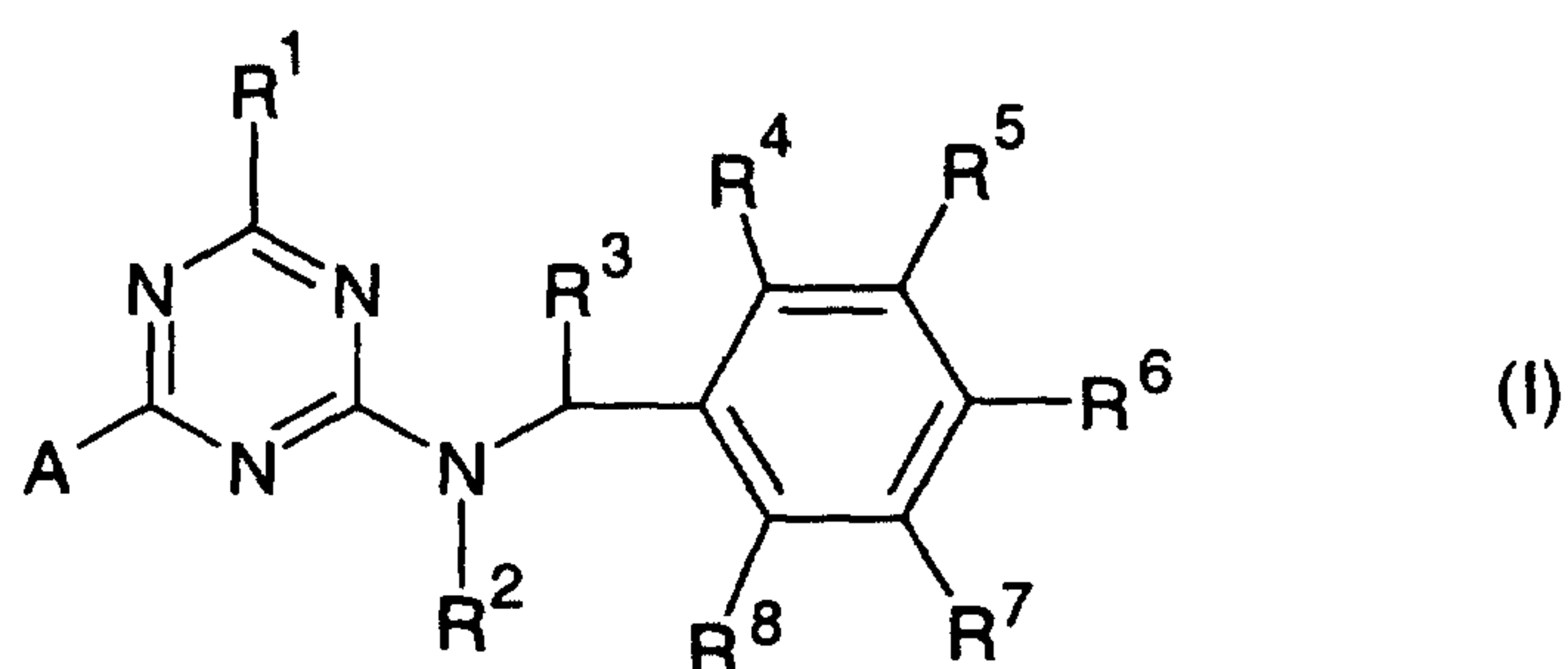
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Abstract

Alkylamino-1,3,5-triazines, process for their preparation and their use as herbicides and plant growth regulators

Compounds of the formula (I) and salts thereof



in which

R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 and A as defined in claim 1 are suitable for use as herbicides and plant growth regulators. The compounds (I) can be prepared by the process claimed in claim 8.

WO 01/27093**PCT/EP00/09419**

Alkylamino-1,3,5-triazines, process for their preparation and their use as herbicides and plant growth regulators

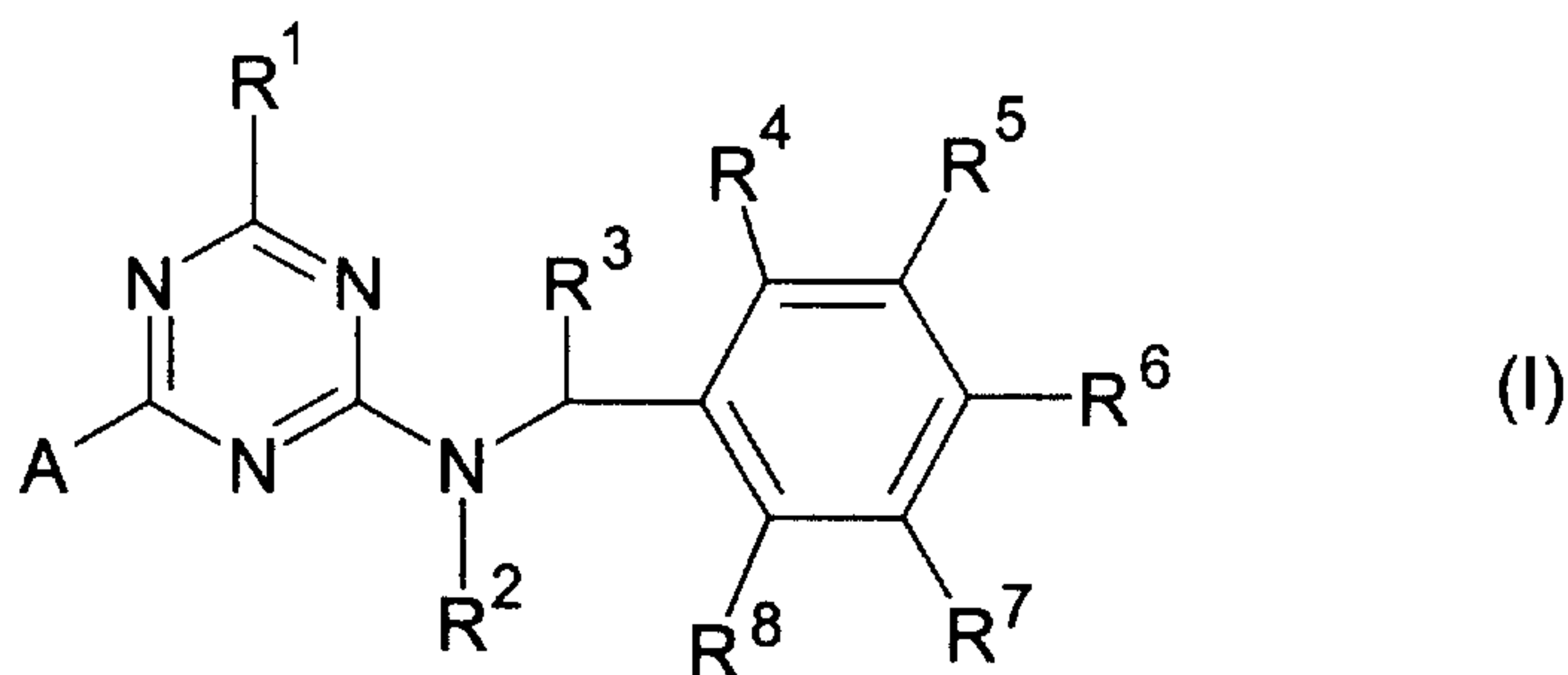
- 5 The invention relates to the technical field of crop protection agents, such as herbicides and plant growth regulators, in particular herbicides for the selective control of harmful plants in crops of useful plants.

10 It is known that 4-amino-2-[N-(1-arylalkyl)amino]-1,3,5-triazines which are optionally substituted in the 6 position on the triazine ring by optionally halogenated hydrocarbon groups or other groups, and their derivatives, have herbicidal and plant-growth-regulating properties; cf., for example, US-A-3816419, US-A-5290754 (WO-A-90/9378, EP-A-0411153), WO95/06642, WO-A-97/31904, WO98/15536, WO98/42684, WO-A-99/18100, WO-A-99/19309, WO-A-99/37627, WO99/46249, JP-A-62,298,577, 15 JP-A-62,294,669, EP-A-0191496 and literature cited therein.

Some of the known active compounds have, when used, disadvantages, such as insufficient herbicidal activity against harmful plants, too limited a spectrum of harmful plants which can be controlled with an active compound, or insufficient selectivity in 20 crops of useful plants. Other active compounds cannot be prepared economically on an industrial scale, owing to reagents or precursors which are difficult to obtain, or they have insufficient chemical stability.

It is therefore desirable to provide alternative active compounds which can, if 25 appropriate, advantageously, be employed as herbicides or plant-growth regulators.

The present invention provides compounds of the formula (I) and salts thereof



in which

A a group of the formula NR^aR^b , in which

5 R^a and R^b , independently of one another, are hydrogen, formyl or else aminocarbonyl or else amino(thiocarbonyl) or $(\text{C}_1\text{-C}_{10})$ alkyl, $(\text{C}_2\text{-C}_{10})$ alkenyl, $(\text{C}_2\text{-C}_{10})$ alkynyl, $(\text{C}_1\text{-C}_{10})$ alkylsulfinyl, $(\text{C}_1\text{-C}_{10})$ alkylsulfonyl, $(\text{C}_1\text{-C}_{10})$ alkoxy, $[(\text{C}_1\text{-C}_{10})\text{alkyl}]$ carbonyl, $[(\text{C}_1\text{-C}_{10})\text{alkoxy}]$ carbonyl or else N-mono $[(\text{C}_1\text{-C}_{10})\text{alkyl}]$ aminocarbonyl or else N,N-di $[(\text{C}_1\text{-C}_{10})\text{alkyl}]$ aminocarbonyl or else $[(\text{C}_1\text{-C}_{10})\text{alkylthio}]$ carbonyl or else $[(\text{C}_1\text{-C}_{10})\text{alkyl}]$ (thiocarbonyl) or else $[(\text{C}_1\text{-C}_{10})\text{alkoxy}]$ (thiocarbonyl) or else N-mono $[(\text{C}_1\text{-C}_{10})\text{alkyl}]$ amino(thiocarbonyl) or else N,N-di $[(\text{C}_1\text{-C}_{10})\text{alkyl}]$ amino(thiocarbonyl) or else $[(\text{C}_1\text{-C}_{10})\text{alkylthio}]$ (thiocarbonyl), where each of the 16 last-mentioned radicals is unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, $(\text{C}_1\text{-C}_4)$ alkoxy, $(\text{C}_1\text{-C}_4)$ haloalkoxy, $(\text{C}_1\text{-C}_4)$ hydroxyalkoxy and $(\text{C}_1\text{-C}_4)$ alkoxy- $(\text{C}_1\text{-C}_4)$ alkoxy, or are $(\text{C}_3\text{-C}_6)$ cycloalkyl, $(\text{C}_5\text{-C}_6)$ cycloalkenyl, $(\text{C}_3\text{-C}_6)$ cycloalkoxy, $(\text{C}_5\text{-C}_6)$ cycloalkenyloxy, phenyl, phenoxy, phenylamino, phenylcarbonyl or else naphthylcarbonyl or phenylsulfonyl, heterocyclyl, heterocyclyloxy, heterocyclylamino, heterocyclylcarbonyl or heterocyclylsulfonyl, where each of the 15 last-mentioned radicals is unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, cyano, hydroxyl, $(\text{C}_1\text{-C}_4)$ alkyl,

(C₁-C₄)haloalkyl, (C₁-C₄)hydroxyalkyl, (C₁-C₄)alkoxy-(C₁-C₄)alkyl,
 (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)hydroxyalkoxy and
 (C₁-C₄)alkoxy-(C₁-C₄)alkoxy and heterocyclyl in the radicals mentioned
 is in each case heterocyclyl having 3 to 9 ring atoms, 1 to 4 of which are
 hetero ring atoms selected from the group consisting of N, O and S, or
 one of the radicals R^a and R^b is as defined above and the other of the radicals
 R^a and R^b is a group of the formula NR'R'', where R' and R'',
 independently of one another, are H or (C₁-C₆)alkyl which is
 unsubstituted or substituted, preferably unsubstituted or substituted by
 one or more radicals selected from the group consisting of halogen,
 hydroxyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)hydroxyalkoxy and
 (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, or R' and R'' together are straight-chain
 (C₂-C₅)alkylene which is unsubstituted or substituted by one or more
 radicals selected from the group consisting of (C₁-C₄)alkyl,
 (C₁-C₄)alkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkyl, or
 R^a and R^b together are (C₁-C₁₀)alkylidene which is unsubstituted or substituted
 by one or more radicals selected from the group consisting of halogen,
 cyano, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio, or
 NR^aR^b together are a heterocyclyl radical which is attached to the nitrogen
 atom and has 3 to 6 ring atoms and, in addition to the nitrogen atom as
 hetero ring atom, optionally contains 1 to 3 further hetero ring atoms
 selected from the group consisting of N, O and S, where the heterocycle
 is unsubstituted or substituted, preferably unsubstituted or substituted by
 one or more radicals selected from the group consisting of halogen,
 cyano, hydroxyl, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)hydroxyalkyl,
 (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)hydroxyalkoxy, (C₁-C₄)alkoxy-
 (C₁-C₄)alkoxy, (C₁-C₄)alkoxy-(C₁-C₄)alkyl and oxo,

or

A is (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, (C₃-C₆)cycloalkyl or (C₅-C₆)cycloalkenyl, where each of the 5 last-mentioned radicals is unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)alkylthio, (C₁-C₄)alkoxy-(C₁-C₄)alkoxy and, in the case of cyclic radicals, also (C₁-C₄)alkyl, (C₁-C₄)haloalkyl and (C₁-C₄)alkoxy-(C₁-C₄)alkyl, and

R¹ is hydroxyl, or

(C₁-C₁₀)alkyl, which is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, hydroxyl, cyano, nitro, thiocyanato, formyl, amino, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₂-C₄)alkenyloxy, (C₂-C₄)haloalkenyloxy, (C₂-C₄)alkynyloxy, (C₂-C₄)haloalkynyloxy, N-mono(C₁-C₄)alkylamino, N,N-di(C₁-C₄)alkylamino, (C₁-C₄)alkylthio, (C₁-C₄)alkylsulfinyl, (C₁-C₄)haloalkylsulfinyl, (C₁-C₄)alkylsulfonyl, (C₁-C₄)haloalkylsulfonyl, [(C₁-C₄)alkyl]carbonyl, [(C₁-C₄)haloalkyl]carbonyl, [(C₁-C₄)alkoxy]carbonyl, (C₃-C₉)cycloalkyl, (C₅-C₆)cycloalkenyl, phenyl and heterocyclyl, where each of the 4 last-mentioned radicals is unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, cyano, hydroxyl, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₂-C₄)alkenyl, (C₂-C₄)haloalkenyl, (C₂-C₄)alkynyl, (C₂-C₄)haloalkynyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio, and heterocyclyl in the 5 last-mentioned radicals contains in each case 3 to 9 ring atoms, 1 to 4 of which are hetero ring atoms selected from the group consisting of N, O and S, or

is [(C₁-C₆)alkyl]carbonyl, [(C₁-C₆)alkoxy]carbonyl, (C₁-C₆)alkylsulfinyl or (C₁-C₄)alkylsulfonyl, where each of the 4 last-mentioned radicals is unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals

selected from the group consisting of halogen, (C₁-C₄)alkoxy,

(C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio, or

is (C₃-C₆)cycloalkyl, which is unsubstituted or substituted, (C₅-C₆)cycloalkenyl,

which is unsubstituted or substituted, where preferably each of the two last-

mentioned cyclic radicals is unsubstituted or substituted by one or more radicals

selected from the group consisting of halogen, cyano, (C₁-C₄)alkyl,

(C₁-C₄)haloalkyl, (C₂-C₄)alkenyl, (C₂-C₄)alkynyl, (C₁-C₄)alkoxy,

(C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio,

where the radical R¹, including substituents, preferably has 1 to 30 carbon

atoms, in particular 1 to 20 carbon atoms,

R² is H or formyl, (C₁-C₁₀)alkyl, (C₂-C₁₀)alkenyl, (C₂-C₁₀)alkynyl,

(C₁-C₁₀)alkylsulfinyl, (C₁-C₁₀)alkylsulfonyl, (C₁-C₁₀)alkoxy,

[(C₁-C₁₀)alkyl]carbonyl, [(C₁-C₁₀)alkoxy]carbonyl, where each of the 8 last-

mentioned radicals is unsubstituted or substituted, preferably unsubstituted or

substituted by one or more radicals selected from the group consisting of

halogen, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)hydroxyalkoxy and also

(C₁-C₄)alkoxy-(C₁-C₄)alkoxy, or

is (C₃-C₆)cycloalkyl, (C₅-C₆)cycloalkenyl, (C₃-C₆)cycloalkoxy, (C₅-

C₆)cycloalkenyloxy, phenyl, phenoxy, phenylamino, phenylcarbonyl,

phenylsulfonyl, heterocyclyl, heterocyclyloxy, heterocyclylamino,

heterocyclylcarbonyl or heterocyclylsulfonyl, where each of the 14 last-

mentioned radicals is unsubstituted or substituted and heterocyclyl in the 5 last-

mentioned radicals preferably contains in each case 3 to 9 ring atoms, 1 to 4 of

which are hetero ring atoms selected from the group consisting of N, O and S,

where preferably each of the 14 radicals mentioned is unsubstituted or

substituted by one or more radicals selected from the group consisting of

halogen, cyano, hydroxyl, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)hydroxyalkyl,

(C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)hydroxyalkoxy and also

(C₁-C₄)alkoxy-(C₁-C₄)alkoxy, or

is a group of the formula NR^cR^d, where R^c and R^d, independently of one another, are H, formyl, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl,

(C₁-C₆)alkylsulfinyl, (C₁-C₆)alkylsulfonyl, (C₁-C₆)alkoxy, [(C₁-C₆)alkyl]carbonyl

or [(C₁-C₆)alkoxy]carbonyl, where each of the 8 last-mentioned groups is unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals selected from the group consisting halogen, hydroxyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)hydroxyalkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, or

R^c and R^d together are straight-chain (C₂-C₅)alkylene, which is unsubstituted or substituted by one or more radicals selected from the group consisting of (C₁-C₄)alkyl, (C₁-C₄)alkoxy, (C₁-C₄)alkoxy-(C₁-C₄)alkyl and oxo,

R³ is halogen, CN, NO₂, SCN or a radical of the formula -X¹-A¹, where

X¹ is a direct bond or a divalent group of the formula -O-, -S(O)_p-, -S(O)_p-O-,

-O-S(O)_p-, -CO-, -O-CO-, -CO-O-, -S-CO-, -CO-S-, -S-CS-, -CS-S-,

-O-CO-O-, -NR^O-, -O-NR^O-, -NR^O-O-, -NR^O-CO-, -CO-NR^O-,

-O-CO-NR^O- or -NR^O-CO-O-, in which in each case p is the integer 0, 1

or 2 and R^O is hydrogen, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, phenyl, phenyl-(C₁-C₆)alkyl, (C₃-C₆)cycloalkyl or [(C₁-C₆)alkyl]carbonyl,

and

A¹ is hydrogen, (C₁-C₁₀)alkyl, (C₂-C₁₀)alkenyl, (C₂-C₁₀)alkynyl, (C₃-C₆)cycloalkyl, (C₅-C₆)cycloalkenyl, phenyl or heterocyclyl having 3 to 9 ring atoms and 1 to 4 hetero ring atoms selected from the group consisting of N, O and S, where each of the 7 last-mentioned radicals is unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, cyano, hydroxyl, (C₁-C₄)alkyl, (C₃-C₆)cycloalkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)hydroxyalkoxy and, in the case of cyclic

radicals, also (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy-(C₁-C₄)alkyl and (C₁-C₄)hydroxyalkyl and, including substituents, has preferably up to 20 carbon atoms,

each of the radicals R⁴, R⁵, R⁶, R⁷ and R⁸, independently of one another, is halogen,

5 nitro, cyano, thiocyanato or a radical of the formula -X²-A², where

X² is a direct bond or a divalent group of the formula -O-, -S(O)_q-, -S(O)_q-O-, -O-S(O)_q-, -S(O)_q-NR^r-, -NR^r-S(O)_q-, -CO-, -O-CO-, -CO-O-, -S-CO-, -CO-S-, -S-CS-, -CS-S-, -O-CO-O-, -NR^r-, -O-NR^r-, -NR^r-O-, -NR^r-CO-, -CO-NR^r-, -O-CO-NR^r- or -NR^r-CO-O-, in which in each case q

10 is the integer 0, 1 or 2 and R^r is hydrogen, amino, substituted amino,

(C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, phenyl, phenyl-(C₁-

C₆)alkyl, phenylcarbonyl, (C₃-C₆)cycloalkyl, (C₅-C₆)cycloalkenyl,

[(C₁-C₆)alkyl]carbonyl, (C₁-C₆)alkylsulfonyl, (C₁-C₆)alkylsulfinyl,

phenylsulfonyl or phenylsulfinyl, where each of the 13 last-mentioned

15 radicals is unsubstituted or substituted, preferably unsubstituted or

substituted by one or more radicals selected from the group consisting of halogen, cyano, hydroxyl, (C₁-C₄)alkyl, (C₁-C₄)alkoxy,

(C₁-C₄)haloalkoxy and (C₁-C₄)hydroxyalkoxy and, in the case of cyclic

radicals, also (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy-(C₁-C₄)alkyl and

20 (C₁-C₄)hydroxyalkyl, and

A² is hydrogen, (C₁-C₁₀)alkyl, (C₂-C₁₀)alkenyl, (C₂-C₁₀)alkynyl,

(C₃-C₆)cycloalkyl, (C₅-C₆)cycloalkenyl, phenyl or heterocyclyl, where

each of the 7 last-mentioned radicals is unsubstituted or substituted,

preferably unsubstituted or substituted by one or more radicals selected

25 from the group consisting of halogen, cyano, hydroxyl, amino, mercapto,

aminocarbonyl, mono- and di(C₁-C₆)alkylamino, mono- and diarylamino,

N-(C₁-C₆)alkyl-N-arylamino, mono- and diacylamino, N-(C₁-C₆)alkyl-N-

acylamino, N-aryl-N-acylamino, (C₁-C₆)alkoxy, (C₁-C₆)alkylthio,

(C₁-C₆)alkylsulfonyl, (C₁-C₆)alkylsulfinyl, [(C₁-C₅)alkyl]carbonyl, [(C₁-C₅)alkoxy]carbonyl, [(C₁-C₆)alkyl]carbonyloxy, (C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkoxy, (C₃-C₆)cycloalkylcarbonyl, (C₃-C₆)cycloalkylcarbonyloxy, phenyl, phenoxy, phenylthio, phenylcarbonyl, phenylcarbonyloxy, heterocyclyl, heterocyclyloxy, heterocyclylthio, heterocyclylcarbonyl, heterocyclylcarbonyloxy and, in the case of cyclic radicals, also (C₁-C₆)alkyl,

where each of the 31 last-mentioned radicals is unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, cyano, hydroxyl, amino, mono- and di(C₁-C₆)alkylamino, mono- and di-arylamino, N-(C₁-C₆)alkyl-N-arylamino, mono- and di-

(C₁-C₆)acylamino, N-(C₁-C₆)alkyl-N-acylamino, (C₁-C₆)alkoxy, (C₁-C₆)alkylthio, (C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkoxy, phenyl, phenoxy and phenylthio and, in the case of cyclic radicals, also (C₁-C₆)alkyl, (C₁-C₆)haloalkyl and (C₁-C₄)alkoxy-(C₁-C₆)alkyl and

where heterocyclyl in A² in each case contains 3 to 9 ring atoms and 1 to 4 hetero ring atoms selected from the group consisting of N, O and S,

and where A², including substituents, has preferably up to 20 carbon atoms,

or

two adjacent radicals from the group consisting of R⁴, R⁵, R⁶, R⁷ and R⁸ together with the carbon atoms of the phenyl ring to which they are attached form a fused ring having 4 to 6 ring atoms which is carbocyclic or contains 1 to 3 hetero ring atoms from the group consisting of N, O and S and which is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₆)alkyl, (C₁-C₆)haloalkyl, (C₂-C₆)alkenyl, (C₂-

C₆)alkynyl, (C₁-C₆)alkoxy, [(C₁-C₆)haloalkoxy, (C₁-C₆)alkyl]carbonyl, [(C₁-C₆)alkoxy]carbonyl, (C₁-C₆)alkylsulfonyl and (C₁-C₆)alkylsulfinyl,

where at least two radicals, preferably 2 or 3 radicals, in particular 2 radicals, selected from the group consisting of R⁴, R⁵, R⁶, R⁷ and R⁸ are different from hydrogen,

except for compounds of the formula (I) and salts thereof in which

A is NH₂,

R¹ is a radical of the formula -C(CH₃)(X*)(R*), in which X* = halogen and R* = H, CH₃ or C₂H₅,

R² is H,

R³ is CH₃,

R⁵ is CH₃ or OCH₃,

R⁶ is CH₃ or OCH₃ and

R⁴, R⁷ and R⁸ are each H.

The last-mentioned compounds (I), which are excluded, are already known from US-A-5290754 (WO-A-90/9378, EP-A-0411153).

Unless defined otherwise, divalent radicals, for example X¹ = -CO-NR^O-, are defined

such that in the composed groups, for example -X¹-A¹, the bond of the divalent radical linked to the group A¹ is the bond which is written on the right in the formula for the divalent radical, i.e. -X¹-A¹ is a group of the formula -CO-NR^O-A¹; this applies correspondingly to analogous divalent radicals.

The invention also provides all stereoisomers which are embraced by the formula (I), and mixtures thereof. Such compounds of the formula (I) contain one or more asymmetrically substituted carbon atoms or else double bonds, which are not specifically mentioned in the general formulae (I). The possible stereoisomers, which are defined by their specific steric form, such as enantiomers, diastereomers, including

Z and E isomers, are all embraced by the formula (I) and can be obtained by customary methods from mixtures of the stereoisomers or else be prepared by stereoselective reactions in combination with the use of stereochemically pure or enriched starting materials. Of particular interest are also the stereoisomers which result from the asymmetrically substituted carbon atom to which the group R^3 is attached, if R^3 is not hydrogen. The isomers which are R- and S-configured at this center, which represent enantiomers, if no further asymmetrically substituted carbon atom is present in the molecule of the formula (I), therefore also form part of the subject matter of the invention. In general, the biological activities of these R and S isomers are not identical, but in the individual case, depending on the species of harmful plant and the crop, one of the isomers has a higher herbicidal action or selectivity.

If compounds of the formula (I) are also capable of forming tautomers whose structure is formally not represented or included in the formula (I), these tautomers are nevertheless embraced by the definition of the compounds of the formula (I) according to the invention.

The compounds of the formula (I) can form salts by addition of a suitable inorganic or organic acid, such as, for example, HCl, HBr, H_2SO_4 or HNO_3 , but also oxalic acid or sulfonic acids, to a basic group, such as, for example, amino or alkylamino. Suitable substituents which are present in deprotonated form, such as, for example, sulfonic acids or carboxylic acids, can form inner salts with groups which for their part can be protonated, such as amino groups. Salts can also be formed by replacing the hydrogen of suitable substituents, such as, for example, sulfonic acids or carboxylic acids, by an agriculturally suitable cation. These salts are, for example, metal salts, in particular alkali metal salts or alkaline earth metal salts, in particular sodium salts and potassium salts, or else ammonium salts or salts with organic amines.

In the formula (I) and all the formulae hereinbelow, the radicals alkyl, alkoxy, haloalkyl, haloalkoxy, alkylamino and alkylthio and the corresponding unsaturated and/or substituted radicals can in each case be straight-chain or branched in the carbon skeleton. Unless specifically mentioned otherwise, the lower carbon skeletons, for

example with 1 to 6 carbon atoms or in the case of unsaturated groups with 2 to 6 carbon atoms are preferred for these radicals. Alkyl radicals, also in the composed meanings, such as alkoxy, haloalkyl, and the like, are, for example, methyl, ethyl, n- or isopropyl, n-, i-, t- or 2-butyl, pentyls, hexyls, such as n-hexyl, isohexyl and

5 1,3-dimethylbutyl, heptyls, such as n-heptyl, 1-methylhexyl and 1,4-dimethylpentyl; alkenyl and alkynyl radicals have the meaning of the possible unsaturated radicals which correspond to the alkyl radicals; alkenyl is, for example, allyl, 1-methylprop-2-en-1-yl, 2-methylprop-2-en-1-yl, but-2-en-1-yl, but-3-en-1-yl, 1-methylbut-3-en-1-yl and 1-methylbut-2-en-1-yl; alkynyl is, for example, propargyl, but-2-yn-

10 1-yl, but-3-yn-1-yl, 1-methylbut-3-yn-1-yl.

Alkylidene, for example in the form (C₁-C₁₀)alkylidene, is the radical of a straight-chain or branched alkane which is attached via a double bond, the position of the binding site not yet being fixed. In the case of a branched alkane, the only possible positions

15 are, of course, those where two hydrogen atoms can be replaced by the double bond; examples of radicals are =CH₂, =CH-CH₃, =C(CH₃)-CH₃, =C(CH₃)-C₂H₅ or =C(C₂H₅)-C₂H₅.

Cycloalkyl is a carbocyclic saturated ring system having preferably 3-8 carbon atoms, for example cyclopropyl, cyclobutyl, cyclopentyl or cyclohexyl. In the case of substituted cycloalkyl, this includes cyclic systems with substituents, where the substituents are attached to the cycloalkyl radical via a double bond, for example an alkylidene group such as methylidene. Substituted cycloalkyl also includes polycyclic aliphatic systems, such as, for example, bicyclo[1.1.0]butan-1-yl, bicyclo[1.1.0]butan-2-

20 yl, bicyclo[2.1.0]pentan-1-yl, bicyclo[2.1.0]pentan-2-yl, bicyclo[2.1.0]pentan-5-yl, adamantan-1-yl and adamantan-2-yl.

Cycloalkenyl is a carbocyclic non-aromatic, partially unsaturated ring system having preferably 4-8 carbon atoms, for example 1-cyclobutenyl, 2-cyclobutenyl, 1-cyclopentenyl, 2-cyclopentenyl, 3-cyclopentenyl, or 1-cyclohexenyl, 2-cyclohexenyl, 3-cyclohexenyl, 1,3-cyclohexadienyl or 1,4-cyclohexadienyl. For substituted cycloalkenyl, the illustrations for substituted cycloalkyl apply correspondingly.

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Halogen is, for example, fluorine, chlorine, bromine or iodine. Haloalkyl, -alkenyl and -alkynyl are alkyl, alkenyl and alkynyl, respectively, which are partially or fully substituted by halogen, preferably by fluorine, chlorine and/or bromine, in particular by fluorine or chlorine, for example, monohaloalkyl, perhaloalkyl, CF₃, CHF₂, CH₂F, CF₃CF₂, CH₂FCHCl, CCl₃, CHCl₂, CH₂CH₂Cl; haloalkoxy is, for example, OCF₃, OCHF₂, OCH₂F, CF₃CF₂O, OCH₂CF₃ and OCH₂CH₂Cl; this applies correspondingly to haloalkenyl and other halogen-substituted radicals.

Aryl is a mono-, bi- or polycyclic aromatic system, for example phenyl, naphthyl, tetrahydronaphthyl, indenyl, indanyl, pentalenyl, fluorenyl and the like, preferably phenyl.

A heterocyclic radical or ring (heterocyclyl) can be saturated, unsaturated or heteroaromatic; unless defined otherwise, it preferably contains one or more, in particular 1, 2 or 3, heteroatoms in the heterocyclic ring, preferably selected from the group consisting of N, O and S; it is preferably an aliphatic heterocyclyl radical having 3 to 7 ring atoms or a heteroaromatic radical having 5 or 6 ring atoms. The heterocyclic radical can, for example, be a heteroaromatic radical or ring (heteroaryl), such as, for example, a mono-, bi- or polycyclic aromatic system, in which at least 1 ring contains one or more heteroatoms. It is preferably a heteroaromatic ring having one heteroatom selected from the group consisting of N, O and S, for example pyridyl, pyrrolyl, thienyl or furyl; furthermore, preferably, it is a corresponding heteroaromatic ring having 2 or 3 heteroatoms, for example pyrimidinyl, pyridazinyl, pyrazinyl, triazinyl, thiazolyl, thiadiazolyl, oxazolyl, isoxazolyl, pyrazolyl, imidazolyl and triazolyl.

Furthermore preferably, it is a partially or fully hydrogenated heterocyclic radical having one heteroatom selected from the group consisting of N, O and S, for example oxiranyl, oxetanyl, oxolanyl (= tetrahydrofuryl), oxanyl, pyrrolidyl or piperidyl.

Furthermore preferably, it is a partially or fully hydrogenated heterocyclic radical having 2 heteroatoms selected from the group consisting of N, O and S, for example piperazinyl, dioxolanyl, oxazoliny, isoxazoliny, oxazolidiny, isoxazolidiny and morpholiny.

Possible substituents for a substituted heterocyclic radical are the substituents mentioned further below, and additionally also oxo. The oxo group can also be present

at the hetero ring atoms which can exist in different oxidation states, for example at N and S.

Substituted radicals, such as a substituted alkyl, alkenyl, alkynyl, aryl, phenyl, benzyl, heterocyclyl and heteroaryl radical, are, for example, a substituted radical derived from the unsubstituted skeleton, where the substituents are, for example, one or more, preferably 1, 2 or 3, radicals selected from the group consisting of halogen, alkoxy, haloalkoxy, alkylthio, hydroxyl, amino, nitro, carboxyl, cyano, azido, alkoxycarbonyl, alkylcarbonyl, formyl, carbamoyl, mono- and dialkylaminocarbonyl, substituted amino, such as acylamino, mono- and dialkylamino, and alkylsulfinyl, haloalkylsulfinyl, alkylsulfonyl, haloalkylsulfonyl and, in the case of cyclic radicals, also alkyl, haloalkyl, alkylthioalkyl, alkoxyalkyl, optionally substituted mono- and dialkylaminoalkyl and hydroxyalkyl; the term "substituted radicals", such as substituted alkyl and the like, includes as substituents, in addition to the saturated hydrocarbon-containing radicals mentioned, the corresponding unsaturated aliphatic and aromatic radicals, such as unsubstituted or substituted alkenyl, alkynyl, alkenyloxy, alkynyloxy, phenyl, phenoxy etc. Substituted cyclic radicals having aliphatic moieties in the ring include cyclic systems having substituents which are attached to the ring via a double bond, for example those substituted by an alkylidene group, such as methyldiene or ethyldiene. Among the radicals with carbon atoms, preference is given to those having 1 to 4 carbon atoms, in particular 1 or 2 carbon atoms. In general, preference is given to substituents selected from the group consisting of halogen, for example fluorine and chlorine, (C₁-C₄)alkyl, preferably methyl or ethyl, (C₁-C₄)haloalkyl, preferably trifluoromethyl, (C₁-C₄)alkoxy, preferably methoxy or ethoxy, (C₁-C₄)haloalkoxy, nitro and cyano. Particular preference is given here to the substituents methyl, methoxy, fluorine and chlorine.

Substituted amino, such as mono- or disubstituted amino, is a radical from the group of the substituted amino radicals which are N-substituted, for example, by one or two identical or different radicals selected from the group consisting of alkyl, alkoxy, acyl and aryl; preferably mono- and dialkylamino, mono- and diarylamino, acylamino, N-alkyl-N-arylamino, N-alkyl-N-acylamino and N-heterocycles; preference is given to alkyl radicals having 1 to 4 carbon atoms; aryl is preferably phenyl or substituted

phenyl; for acyl, the definition mentioned further below applies, preferably (C₁-C₄)alkanoyl. This applies correspondingly to substituted hydroxylamino or hydrazino.

- 5 Unsubstituted or substituted phenyl is preferably phenyl which is unsubstituted or mono- or polysubstituted, preferably up to trisubstituted, by identical or different radicals selected from the group consisting of halogen, (C₁-C₄)alkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkyl, (C₁-C₄)haloalkoxy and nitro, for example o-, m- and p-tolyl, dimethylphenyls, 2-, 3- and 4-chlorophenyl, 2-, 3- and 4-trifluoro- and -trichlorophenyl, 10 2,4-, 3,5-, 2,5- and 2,3-dichlorophenyl, o-, m- and p-methoxyphenyl.

Acyl is a radical of an organic acid which is formally formed by removing a hydroxyl group from the acid function, where the organic radical in the acid can also be attached to the acid function via a heteroatom. Examples of acyl are the radical -CO-R 15 of a carboxylic acid HO-CO-R and radicals of acids derived therefrom, such as thiocarbonic acid, unsubstituted or N-substituted iminocarboxylic acids or the radical of carbonic monoesters, N-substituted carbamic acid, sulfonic acids, sulfinic acids, N-substituted sulfonamide acids, phosphonic acids, phosphinic acids.

Acyl is, for example, formyl, alkylcarbonyl, such as [(C₁-C₄)alkyl]carbonyl, 20 phenylcarbonyl, alkyloxycarbonyl, phenyloxycarbonyl, benzyloxycarbonyl, alkylsulfonyl, alkylsulfinyl, N-alkyl-1-iminoalkyl and other radicals of organic acids. The radicals can in each case be further substituted in the alkyl or phenyl moiety, for example in the alkyl moiety by one or more radicals selected from the group consisting of halogen, alkoxy, phenyl and phenoxy; examples of substituents in the phenyl moiety 25 are the substituents which have already been mentioned further above generally for substituted phenyl.

Acyl is preferably an acyl radical in the more restricted sense, i.e. a radical of an organic acid where the acid group is directly attached to the carbon atom of an organic radical, for example formyl, alkylcarbonyl, such as acetyl or [(C₁-C₄)alkyl]carbonyl, 30 phenylcarbonyl, alkylsulfonyl, alkylsulfinyl and other radicals of organic acids.

In particular for reasons of better herbicidal activity, better selectivity and/or easier

preparation, the novel compounds of the formula (I) mentioned or their salts of particular interest are those in which individual radicals have one of the preferred meanings already mentioned or mentioned hereinbelow, or, in particular, those, in which one or more of the preferred meanings already mentioned or mentioned
 5 hereinbelow are combined.

Of interest are, for example, compounds of the formula (I) according to the invention or salts thereof in which

A is a group of the formula NR^aR^b , in which

10 R^a and R^b , independently of one another, are hydrogen, formyl or else aminocarbonyl or else amino(thiocarbonyl) or (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, (C₁-C₆)alkylsulfinyl, (C₁-C₆)alkylsulfonyl, (C₁-C₆)alkoxy, [(C₁-C₆)alkyl]carbonyl, [(C₁-C₆)alkoxy]carbonyl or else N-mono[(C₁-C₆)alkyl]aminocarbonyl or else N,N-
 15 di[(C₁-C₆)alkyl]aminocarbonyl or else [(C₁-C₆)alkylthio]carbonyl or else [(C₁-C₆)alkyl](thiocarbonyl) or else [(C₁-C₆)alkoxy] (thiocarbonyl) or else N-mono[(C₁-C₆)alkyl]amino(thiocarbonyl) or else N,N-
 20 di[(C₁-C₆)alkyl]amino(thiocarbonyl) or else [(C₁-C₆)alkylthio](thiocarbonyl), where each of the 16 last-mentioned radicals is unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)hydroxyalkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, or
 25 are (C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkoxy, phenyl, phenoxy, phenylamino, phenylcarbonyl or else naphthylcarbonyl or phenylsulfonyl, heterocyclyl, heterocyclyloxy, heterocyclylamino, heterocyclylcarbonyl, heterocyclylsulfonyl, where each of the 13 last-mentioned radicals is unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals selected from the group consisting of halogen,

cyano, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy-(C₁-C₄)alkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, and heterocyclyl in the radicals mentioned is in each case heterocyclyl having 3 to 9 ring atoms, 1 to 3 of which are hetero ring atoms selected from the group consisting of N, O and S, or

one of the radicals R^a and R^b is as defined above and the other of the radicals

R^a and R^b is a group of the formula NR'R'', where R' and R'',

independently of one another, are H or (C₁-C₄)alkyl, which is

unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals selected from the group consisting of halogen,

(C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, or

R' and R'' together are straight-chain (C₂-C₅)alkylene, which is

unsubstituted or substituted by one or more radicals selected from the group consisting of (C₁-C₄)alkyl, (C₁-C₄)alkoxy and (C₁-C₄)alkoxy-

(C₁-C₄)alkyl, or

R^a and R^b together are (C₁-C₆)alkylidene, which is unsubstituted or substituted

by one or more radicals selected from the group consisting of halogen,

cyano, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio, or

NR^aR^b together are a heterocyclyl radical which is attached to the nitrogen

atom and has 3 to 6 ring atoms and, in addition to the nitrogen atom as

hetero ring atom, optionally contains 1 to 3 further hetero ring atoms

selected from the group consisting of N, O and S, where the heterocycle

is unsubstituted or substituted, preferably unsubstituted or substituted by

one or more radicals selected from the group consisting of halogen,

cyano, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy,

(C₁-C₄)alkoxy-(C₁-C₄)alkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkyl,

or

A is (C₁-C₄)alkyl, (C₂-C₄)alkenyl, (C₂-C₄)alkynyl or (C₃-C₄)cycloalkyl, where each of the 4 last-mentioned radicals is unsubstituted or substituted, preferably

unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)alkylthio, (C₁-C₄)alkoxy-(C₁-C₄)alkoxy and, in the case of cyclic radicals, also (C₁-C₄)alkyl, (C₁-C₄)haloalkyl and (C₁-C₄)alkoxy-(C₁-C₄)alkyl, preferably (C₁-C₃)alkyl, in particular methyl.

Preference is given to compounds of the formula (I) according to the invention or salts thereof in which

A is a group of the formula NR^aR^b , in which

10 R^a is hydrogen or (C₁-C₄)alkyl and

R^b is hydrogen or formyl, or else aminocarbonyl or else amino(thiocarbonyl) or (C₁-C₄)alkyl, (C₁-C₄)alkylsulfonyl, [(C₁-C₄)alkyl]carbonyl or [(C₁-C₄)alkoxy]carbonyl, where each of the 4 last-mentioned radicals is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen and (C₁-C₄)alkoxy, or

15 is (C₃-C₆)cycloalkyl, phenyl, phenoxy, phenylthio, phenylcarbonyl, phenylsulfonyl, where each of the 6 last-mentioned radicals is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)alkoxy-(C₁-C₄)alkyl and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy,

20 preferably H, CHO, CO-CH₃, CO-C₆H₅, SO₂CH₃ or SO₂C₂H₅, or

R^a and R^b together are (C₁-C₄)alkylidene, which is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, cyano, (C₁-C₂)alkoxy, (C₁-C₂)haloalkoxy and (C₁-C₂)alkylthio, or

25 NR^aR^b together are a saturated heterocyclyl radical having 5 or 6 ring atoms which, in addition to the nitrogen atom as hetero ring atom, optionally contains 1 to 3 further hetero ring atoms selected from the group consisting of N, O and S, where the heterocycle is unsubstituted or substituted by one or more radicals selected from the

group consisting of (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy and (C₁-C₄)haloalkoxy, (C₁-C₄)alkoxy-(C₁-C₄)alkyl and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, preferably (C₁-C₄)alkyl and (C₁-C₄)alkoxy.

5 Of interest are, for example, also compounds of the formula (I) according to the invention and salts thereof in which

R¹ is (C₁-C₆)alkyl, which is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, hydroxyl, cyano, nitro, thiocyanato, formyl or else amino, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy or else
 10 N-mono(C₁-C₄)alkylamino or else N,N-di(C₁-C₄)alkylamino or (C₁-C₄)alkylthio, (C₁-C₄)alkylsulfonyl, (C₁-C₄)haloalkylsulfonyl, [(C₁-C₄)alkyl]carbonyl, [(C₁-C₄)haloalkyl]carbonyl, [(C₁-C₄)alkoxy]carbonyl, (C₃-C₉)cycloalkyl, phenyl and heterocyclyl, where each of the 3 last-mentioned radicals is unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals
 15 selected from the group consisting of halogen, cyano, hydroxyl, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio, and where heterocyclyl in each case preferably contains 3 to 9 ring atoms, 1 to 4 of which are hetero ring atoms selected from the group consisting of N, O and S, or

20 is [(C₁-C₆)alkyl]carbonyl, [(C₁-C₆)alkoxy]carbonyl or (C₁-C₄)alkylsulfonyl, where each of the 3 last-mentioned radicals is unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio, or

25 is (C₃-C₆)cycloalkyl, which is unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio.

Preference is given to compounds of the formula (I) according to the invention or salts thereof in which R^1 is (C₁-C₄)alkyl, such as, for example, methyl, ethyl, n-propyl and isopropyl, or (C₁-C₄)haloalkyl, such as, for example, 1-fluoroisopropyl, 1-fluoroethyl, 1-fluoropropyl, CF₃ and CCl₃, or cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, 1-methylcyclopropyl, 1-methylcyclobutyl, 1-methylcyclopentyl, 1-methylcyclohexyl or benzyl.

Of interest are, for example, also compounds of the formula (I) according to the invention or salts thereof in which

- 10 R^2 is H or formyl, (C₁-C₄)alkyl, (C₂-C₄)alkenyl, (C₂-C₄)alkynyl, (C₁-C₄)alkylsulfinyl, (C₁-C₄)alkylsulfonyl, (C₁-C₄)alkoxy, [(C₁-C₄)alkyl]carbonyl, [(C₁-C₄)alkoxy]carbonyl, where each of the 8 last-mentioned radicals is unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkoxy and
- 15 (C₁-C₄)haloalkoxy, or (C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkoxy, phenyl, phenoxy, phenylcarbonyl, phenylsulfonyl, heterocyclyl, heterocyclyloxy, heterocyclylcarbonyl or heterocyclylsulfonyl, where each of the 10 last-mentioned radicals is unsubstituted or substituted and heterocyclyl in the 3 last-mentioned radicals in
- 20 each case preferably contains 3 to 9 ring atoms, 1 to 4 of which are hetero ring atoms selected from the group consisting of N, O and S, where preferably each of the 10 radicals mentioned is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, cyano, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy and
- 25 (C₁-C₄)haloalkoxy, or is a group of the formula NR^cR^d , where R^c and R^d , independently of one another, are H, formyl, (C₁-C₄)alkyl, (C₁-C₄)alkylsulfonyl, (C₁-C₄)alkoxy, [(C₁-C₄)alkyl]carbonyl or [(C₁-C₄)alkoxy]carbonyl, where each of the 5 last-mentioned groups is unsubstituted or substituted, preferably unsubstituted or

substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, or R^c and R^d together are straight-chain (C₂-C₅)alkylene, which is unsubstituted or substituted by one or more radicals selected from the group consisting of

5 (C₁-C₄)alkyl, (C₁-C₄)alkoxy, (C₁-C₄)alkoxy-(C₁-C₄)alkyl and oxo.

Preference is given to compounds of the formula (I) according to the invention or salts thereof in which R² is hydrogen, formyl, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)alkylsulfonyl, (C₁-C₄)haloalkylsulfonyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy,

10 [(C₁-C₄)alkyl]carbonyl, [(C₁-C₄)haloalkyl]carbonyl, [(C₁-C₄)alkoxy]carbonyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, phenylcarbonyl or phenylsulfonyl.

Of interest are, for example, also compounds of the formula (I) according to the invention or salts thereof in which

15

R³ is halogen, CN, NO₂, SCN or a radical of the formula -X¹-A¹, where

X¹ is a direct bond or a divalent group of the formula -O-, -S(O)_p-, -S(O)_p-O-, -O-S(O)_p-, -CO-, -O-CO-, -CO-O-, -S-CO-, -CO-S-, -S-CS-, -CS-S-, -O-CO-O-, -NR^O-, -O-NR^O-, -NR^O-O-, -NR^O-CO-, -CO-NR^O-, -O-CO-NR^O- or -NR^O-CO-O-, preferably -O-, -S(O)_p-, -CO-, -O-CO-, -CO-O-, -S-CO-, -CO-S-, -NR^O-, -O-NR^O-, -NR^O-O-, -NR^O-CO-, -CO-NR^O-, -O-CO-NR^O- or -NR^O-CO-O-, in which in each case p is the integer 0, 1 or 2 and R^O is hydrogen, (C₁-C₄)alkyl, (C₂-C₄)alkenyl, (C₂-C₄)alkynyl, phenyl, phenyl-(C₁-C₂)alkyl, (C₃-C₆)cycloalkyl or

20 [(C₁-C₄)alkyl]carbonyl, and

25

A¹ is hydrogen, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, (C₃-C₆)cycloalkyl, phenyl or heterocyclyl having 3 to 9 ring atoms and 1 to 3 hetero ring atoms selected from the group consisting of N, O and S, where each of the 6 last-mentioned radicals is unsubstituted or

substituted, preferably unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, cyano, (C₁-C₄)alkyl, (C₃-C₆)cycloalkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)alkylthio and, in the case of cyclic radicals, also (C₁-C₄)haloalkyl and (C₁-C₄)alkoxy-(C₁-C₄)alkyl and, including substituents, has preferably up to 16 carbon atoms.

Preference is given to compounds (I) and salts thereof in which

R³ is H, (C₁-C₄)alkyl, preferably methyl or ethyl, or cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl or phenyl, where each of the 8 last-mentioned radicals is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen and (C₁-C₂)alkoxy and, in the case of cyclic radicals, also (C₁-C₂)alkyl, (C₁-C₂)haloalkyl and (C₁-C₄)alkoxy-(C₁-C₄)alkyl.

Of interest are, for example, also compounds of the formula (I) according to the invention or salts thereof in which each of the radicals R⁴, R⁵, R⁶, R⁷ and R⁸, independently of one another, is halogen,

nitro, cyano, thiocyanato or a radical of the formula -X²-A², where

X² is a direct bond or a divalent group of the formula -O-, -S(O)_q-, -S(O)_q-O-, -O-S(O)_q-, -S(O)_q-NR^r-, -NR^r-S(O)_q-, -CO-, -O-CO-, -CO-O-, -S-CO-, -CO-S-, -S-CS-, -CS-S-, -O-CO-O-, -NR^r-, -O-NR^r-, -NR^r-O-, -NR^r-CO-, -CO-NR^r-, -O-CO-NR^r- or -NR^r-CO-O-, preferably -O-, -S(O)_q-, -S(O)_q-O-, -S(O)_q-NR^r-, -NR^r-S(O)_q-, -CO-, -O-CO-, -CO-O-, -S-CO-, -CO-S-, -NR^r-, -O-NR^r-, -NR^r-O-, -NR^r-CO-, -CO-NR^r-, -O-CO-NR^r- or -NR^r-CO-O-, in which in each case q is the integer 0, 1 or 2 and R^r, independently of one another, is in each case hydrogen, amino, mono- or di(C₁-C₄)alkylamino, mono- or di(C₁-C₄)arylamino, N-(C₁-C₄)alkyl-N-arylamino, (C₁-C₄)alkyl, (C₂-C₄)alkenyl, (C₂-C₄)alkynyl, phenyl, phenyl(C₁-C₄)alkyl,

phenylcarbonyl, (C₃-C₆)cycloalkyl, (C₅-C₆)cycloalkenyl,
 [(C₁-C₄)alkyl]carbonyl, (C₁-C₄)alkylsulfonyl, (C₁-C₄)alkylsulfinyl,
 phenylsulfonyl or phenylsulfinyl, where each of the 18 last-mentioned
 radicals is unsubstituted or substituted, preferably unsubstituted or
 5 substituted by one or more radicals selected from the group consisting of
 halogen, cyano, (C₁-C₄)alkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and, in
 the case of cyclic radicals, also (C₁-C₄)haloalkyl and (C₁-C₄)alkoxy-
 (C₁-C₄)alkyl, and

A²

is hydrogen, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl,
 10 (C₃-C₆)cycloalkyl, (C₅-C₆)cycloalkenyl, phenyl or heterocyclyl having 3 to
 6 ring atoms and 1 to 3 hetero ring atoms selected from the group
 consisting of N, O and S, where each of the 7 last-mentioned radicals are
 unsubstituted or substituted, preferably unsubstituted or substituted by
 one or more radicals selected from the group consisting of halogen,
 15 cyano, hydroxyl, amino or else mercapto or aminocarbonyl, mono- and
 di(C₁-C₄)alkylamino, mono- and diphenylamino, N-(C₁-C₄)alkyl-N-
 phenylamino, mono- and di[(C₁-C₄)alkanoyl]amino, mono- and di-
 [(C₁-C₄)alkylsulfonyl]amino, N-(C₁-C₄)alkyl-N-[(C₁-C₄)alkanoyl]amino,
 (C₁-C₄)alkyl-N-[(C₁-C₄)alkylsulfonyl]amino, N-phenyl-N-
 20 [(C₁-C₄)alkanoyl]amino, N-phenyl-N-[(C₁-C₄)alkylsulfonyl]amino,
 (C₁-C₄)alkoxy, (C₁-C₄)alkylthio, (C₁-C₄)alkylsulfonyl,
 (C₁-C₄)alkylsulfinyl, [(C₁-C₄)alkyl]carbonyl, [(C₁-C₄)alkoxy]carbonyl,
 [(C₁-C₄)alkyl]carbonyloxy, (C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkoxy,
 (C₃-C₆)cycloalkylcarbonyl, (C₃-C₆)cycloalkylcarbonyloxy, phenyl,
 25 phenoxy, phenylthio, phenylcarbonyl, phenylcarbonyloxy, heterocyclyl,
 heterocyclioxy, heterocyclylthio, heterocyclylcarbonyl,
 heterocyclylcarbonyloxy and, in the case of cyclic radicals, also
 (C₁-C₆)alkyl,

where each of the 35 last-mentioned radicals is unsubstituted or substituted, preferably unsubstituted or substituted by one or more of the radicals selected from the group consisting of halogen, cyano, hydroxyl, amino, mono- and di(C₁-C₄)alkylamino, mono- and di-phenylamino, N-(C₁-C₄)alkyl-N-phenylamino, (C₁-C₄)alkoxy, (C₁-C₄)alkylthio, (C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkoxy, phenyl, phenoxy and phenylthio and, in the case of cyclic radicals, also (C₁-C₄)alkyl, (C₁-C₄)haloalkyl and (C₁-C₄)alkoxy-(C₁-C₄)alkyl,

and A², including substituents, has preferably up to 16 carbon atoms, or

two adjacent radicals from the group consisting of R⁴, R⁵, R⁶, R⁷ and R⁸ together with the carbon atoms of the phenyl ring to which they are attached form a fused ring having 4 to 6 ring atoms which is carbocyclic or contains 1 to 3 hetero ring atoms selected from the group consisting of N, O and S and which is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkyl, (C₂-C₄)alkenyl, (C₂-C₄)alkynyl, [(C₁-C₄)alkyl]carbonyl, (C₁-C₆)alkoxy, [(C₁-C₄)alkoxy]carbonyl, (C₁-C₄)alkylsulfonyl and (C₁-C₄)alkylsulfinyl,

where at least two radicals, preferably 2 or 3 radicals, in particular 2 radicals, from the group consisting of R⁴, R⁵, R⁶, R⁷ and R⁸ are different from hydrogen.

Preference is also given, for example, to compounds of the formula (I) according to the invention or salts thereof in which

each of the radicals R⁴, R⁵, R⁶, R⁷ and R⁸, independently of one another, is hydrogen, halogen, hydroxyl, amino, nitro, formyl, aminocarbonyl, carboxyl, cyano, thiocyanato or else aminosulfonyl or (C₁-C₆)alkyl, (C₁-C₆)alkoxy, (C₁-C₆)alkylthio, (C₁-C₄)alkylsulfonyl, (C₁-C₄)alkylsulfinyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl,

(C₁-C₆)alkylcarbonyl, (C₁-C₆)alkoxycarbonyl, (C₁-C₆)alkylcarbonyloxy, mono- or di-
 [(C₁-C₄)alkyl]amino, mono- and diphenylamino, N-(C₁-C₄)alkyl-N-phenylamino or else
 mono- or di[(C₁-C₄)alkyl]aminosulfonyl, mono- or di[(C₁-C₆)alkanoyl]amino,
 N-[(C₁-C₆)alkanoyl]-N-[(C₁-C₄)alkyl]amino, N-phenyl-N-[(C₁-C₄)alkanoyl]amino,
 5 mono- or di[(C₁-C₆)alkylsulfonyl]amino, N-[(C₁-C₆)alkylsulfonyl]-N-
 [(C₁-C₄)alkyl]amino, N-phenyl-N-[(C₁-C₄)alkylsulfonyl]amino,

where each of the 24 last-mentioned radicals is substituted by one or more
 radicals selected from the group consisting of halogen, nitro, amino, mono-
 and di[(C₁-C₄)alkyl]amino, mono- and diphenylamino, N-(C₁-C₄)alkyl-N-
 10 phenylamino, hydroxyl, cyano, (C₁-C₄)alkoxy or else mercapto or
 (C₁-C₄)alkylthio, (C₁-C₄)haloalkoxy, (C₁-C₄)alkylcarbonyl, (C₁-
 C₄)alkoxycarbonyl, (C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkylcarbonyl,
 (C₃-C₆)cycloalkylcarbonyloxy, phenyl, phenoxy, phenylthio, phenylcarbonyl,
 phenoxycarbonyl, phenylcarbonyloxy, phenylsulfonyl, where the 7 last-
 15 mentioned radicals are unsubstituted or optionally substituted in the phenyl
 radical,
 or

is (C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkoxy, (C₃-C₆)cycloalkylcarbonyl, phenyl, phenoxy,
 phenylthio, phenylcarbonyl, phenoxycarbonyl, phenylcarbonyloxy or phenylsulfonyl,
 20 heterocyclyl, heterocycliloxy, heterocyclylthio, heterocyclylcarbonyl,
 heterocyclylcarbonyloxy, where each of the 14 last-mentioned radicals is unsubstituted
 or substituted by one or more radicals selected from the group consisting of halogen,
 nitro, amino, (C₁-C₄)alkyl, mono- and di[(C₁-C₄)alkyl]amino, mono- and di-
 phenylamino, N-(C₁-C₄)alkyl-N-phenylamino, hydroxyl, cyano, (C₁-C₄)alkoxy,
 25 (C₁-C₄)alkylthio, (C₁-C₄)haloalkoxy, (C₁-C₄)alkylcarbonyl, (C₁-C₄)alkoxycarbonyl.

Preference is also given, for example, to compounds of the formula (I) according to the
 invention or salts thereof in which each of the radicals R⁴, R⁵, R⁶, R⁷ and R⁸,
 independently of one another, is

30 (C₁-C₆)alkoxy-(C₁-C₆)alkyl, (C₁-C₆)alkylthio-(C₁-C₆)alkyl, aminocarbonyl-(C₁-

- C₄)alkyl, amino-(C₁-C₄)alkyl, mono- and di[(C₁-C₄)alkyl]amino-(C₁-C₄)alkyl, (C₃-C₆)-cycloalkyl-(C₁-C₄)alkyl, (C₃-C₆)-cycloalkyl-(C₁-C₄)alkenyl, (C₃-C₆)cycloalkyl-(C₁-C₄)alkynyl, (C₁-C₆)alkylcarbonyl-(C₁-C₆)alkyl, (C₁-C₆)alkoxycarbonyl-(C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyloxy-(C₁-C₆)-alkyl, (C₁-C₆)cycloalkoxy-(C₁-C₄)alkyl, (C₃-C₆)cycloalkylcarbonyl-(C₁-C₄)alkyl, (C₁-C₆)alkoxycarbonyl-(C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyloxy-(C₁-C₆)-alkyl, (C₁-C₆)cycloalkoxy-(C₁-C₄)alkyl, (C₃-C₆)cycloalkylcarbonyl-(C₁-C₄)alkyl, mono- or di(C₁-C₆)alkanoylamino-(C₁-C₄)alkyl, mono- and di[(C₁-C₄)alkylsulfonyl]amino-(C₁-C₄)alkyl, N-(C₁-C₄)alkyl-N-[(C₁-C₄)alkanoyl]amino-(C₁-C₄)alkyl, (C₁-C₄)alkyl-N-[(C₁-C₄)alkylsulfonyl]amino-(C₁-C₄)alkyl, N-phenyl-N-[(C₁-C₄)alkanoyl]amino-(C₁-C₄)alkyl, N-phenyl-N-[(C₁-C₄)alkylsulfonyl]amino-(C₁-C₄)alkyl, phenoxy-(C₁-C₆)-alkyl, phenylcarbonyl-(C₁-C₆)alkyl, phenyloxycarbonyl-(C₁-C₆)alkyl, phenylcarbonyloxy(C₁-C₄)alkyl, phenyl(C₁-C₆)alkyl, phenyl(C₁-C₆)alkenyl, phenyl-(C₁-C₆)alkynyl, heterocyclyl(C₁-C₆)alkyl, heterocyclyloxy(C₁-C₆)alkyl, heterocyclylthio(C₁-C₆)alkyl, heterocyclylsulfonyl(C₁-C₆)alkyl, heterocyclylamino(C₁-C₆)alkyl or one of the 38 last-mentioned radicals which is substituted by one or more radicals selected from the group consisting of halogen, hydroxyl, nitro, cyano, (C₁-C₆)alkyl, (C₁-C₆)alkoxy, (C₁-C₆)alkylthio, (C₁-C₄)alkylsulfonyl, (C₁-C₆)haloalkyl and (C₁-C₆)haloalkoxy.
- Furthermore preferably, each of the radicals R⁴, R⁵, R⁶, R⁷ and R⁸, independently of one another, is hydrogen, halogen, hydroxyl, amino, nitro, formyl, carboxyl, cyano, (C₁-C₆)alkyl, (C₁-C₄)alkoxy, halo(C₁-C₄)alkyl, halo(C₁-C₄)alkoxy, hydroxy(C₁-C₄)alkyl, hydroxy(C₁-C₄)alkoxy, (C₁-C₄)alkoxy-(C₁-C₄)alkyl, halo(C₁-C₄)alkoxy-(C₁-C₄)alkyl, halo(C₁-C₄)alkoxy-(C₁-C₄)alkoxy, (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, (C₃-C₆)cycloalkyl, halo(C₃-C₆)cycloalkyl, (C₂-C₄)alkenyl, halo(C₂-C₄)alkenyl, (C₂-C₄)alkynyl, halo(C₂-C₄)alkynyl, (C₁-C₄)alkylcarbonyl, (C₁-C₄)alkoxycarbonyl or else (C₁-C₄)alkylsulfonyl or else (C₁-C₄)alkylsulfinyl or else (C₁-C₄)alkylaminosulfonyl or else di[(C₁-C₄)alkyl]aminosulfonyl or (C₁-C₄)alkylcarbonyl-

(C₁-C₄)alkyl, (C₁-C₄)alkylcarbonyloxy, (C₁-C₄)alkylthio(C₁-C₄)alkyl, mercapto(C₁-C₄)alkyl, amino(C₁-C₄)alkyl, (C₁-C₄)alkylamino, (C₁-C₄)alkylamino-(C₁-C₄)alkyl, di[(C₁-C₄)-alkyl]amino, di[(C₁-C₄)-alkyl]amino-(C₁-C₄)alkyl, (C₁-C₄)alkanoylamino, (C₁-C₄)alkylsulfonylamino, di[(C₁-C₄)alkanoyl]amino, di[(C₁-C₄)alkylsulfonyl]amino or
 5 phenyl, phenoxy, phenylcarbonyl, phenoxycarbonyl, phenylcarbonyloxy, phenoxy(C₁-C₄)alkyl, phenylcarbonyl(C₁-C₄)alkyl, phenyl(C₁-C₄)alkyl or one of the 8 last-mentioned radicals which is substituted in the phenyl moiety by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkyl and (C₁-C₄)haloalkoxy and also hydroxyl.

10

Furthermore preferably, each of the radicals R⁴, R⁵, R⁶, R⁷ and R⁸, independently of one another, is hydrogen, hydroxyl, amino, nitro, formyl, carboxyl, cyano, fluorine, chlorine, bromine, iodine, methyl, ethyl, n-propyl, isopropyl, n-butyl, isobutyl, t-butyl, sec-butyl, methoxy, ethoxy, n-propoxy, isopropoxy, CF₃, CHF₂, CH₂F, CCl₃, OCHF₂,
 15 OCF₃, OCH₂F, CH₂NH₂, CH₂CH₂NH₂, CH₂OH, CH₂CH₂OH, CH₂SH, CH₂CH₂SH, OCH₂CH₂OH, OCH(CH₃)OH, CH₂OCH₃, CH₂OC₂H₅, CH₂CH₂OCH₃, CH₂CH₂OC₂H₅, OCH₂OCH₃, OCH₂OC₂H₅, OCH₂CH₂OCH₃, OCH₂CH₂OC₂H₅, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, 1-fluorocyclopropyl, vinyl, allyl, prop-1-enyl, 1-methyl-prop-1-enyl, 1-ethyl-prop-1-enyl, but-1-enyl, but-2-en-1-yl, but-3-en-1-yl,
 20 ethynyl, propargyl, prop-1-yn-1-yl, but-1-yn-1-yl, but-2-yn-1-yl, but-3-yn-1-yl, 1-methyl-prop-1-yn-1-yl, acetyl, propionyl, propylcarbonyl, methylsulfonyl, ethylsulfonyl, methylsulfinyl, ethylsulfinyl, aminosulfonyl, methylaminosulfonyl, ethylaminosulfonyl, propylaminosulfonyl, isopropylaminosulfonyl, dimethylaminosulfonyl, diethylaminosulfonyl, methoxycarbonyl, ethoxycarbonyl, methoxycarbonyloxy, ethoxycarbonyloxy, methoxycarbonylmethyl, ethoxycarbonylmethyl,
 25 methoxycarbonyloxymethyl, ethoxycarbonyloxymethyl, methylthio, ethylthio, propylthio, methylthiomethyl, ethylthiomethyl, methylthioethyl, ethylthioethyl, methylamino, ethylamino, propylamino, isopropylamino, dimethylamino, diethylamino, methylaminomethyl, ethylaminomethyl, dimethylaminomethyl, diethylaminoethyl,
 30 formylamino, acetylamino, formylaminomethyl, formylaminoethyl, methylsulfonylamino, ethylsulfonylamino, dimethylsulfonylamino, diethylsulfonylamino,

methylsulfonylaminomethyl, ethylsulfonylaminomethyl, dimethylsulfonylaminomethyl,
 diethylsulfonylaminomethyl, phenyl, phenoxy, phenylcarbonyl, phenoxycarbonyl,
 phenylcarbonyloxy, phenoxymethyl, phenoxyethyl, phenylcarbonylmethyl,
 phenylcarbonylethyl, phenylmethyl (benzyl), phenylethyl (phenethyl) or one of the 11
 5 last-mentioned radicals which is substituted in the phenyl moiety by one or more
 radicals selected from the group consisting of halogen, (C₁-C₄)alkyl, (C₁-C₄)alkoxy,
 (C₁-C₄)haloalkyl, (C₁-C₄)haloalkoxy and hydroxyl.

Of particular interest are compounds of the formula (I) and salts thereof in which

10 R¹ is methyl which is unsubstituted or substituted as mentioned above.

Of particular interest are also compounds of the formula (I) according to the invention
 and salts thereof in which R¹ is (C₁-C₁₀)alkyl which is unsubstituted or substituted by
 substituents according to the invention other than halogen.

15 Of particular interest are also compounds of the formula (I) according to the invention
 and salts thereof in which R¹ is different from unsubstituted or substituted
 (C₁-C₁₀)alkyl.

20 Of particular interest are also compounds of the formula (I) according to the invention
 and salts thereof in which R⁵, R⁶, R⁷ and R⁸ are each different from (C₁-C₁₀)alkyl or
 (C₁-C₁₀)alkoxy.

25 Of particular interest are also compounds of the formula (I) according to the invention
 and salts thereof in which R³ is different from methyl, i.e., for example, (C₂-C₁₀)alkyl,
 which is unsubstituted, or (C₁-C₁₀)alkyl, which is substituted, or one of the other
 definitions according to the invention of R³.

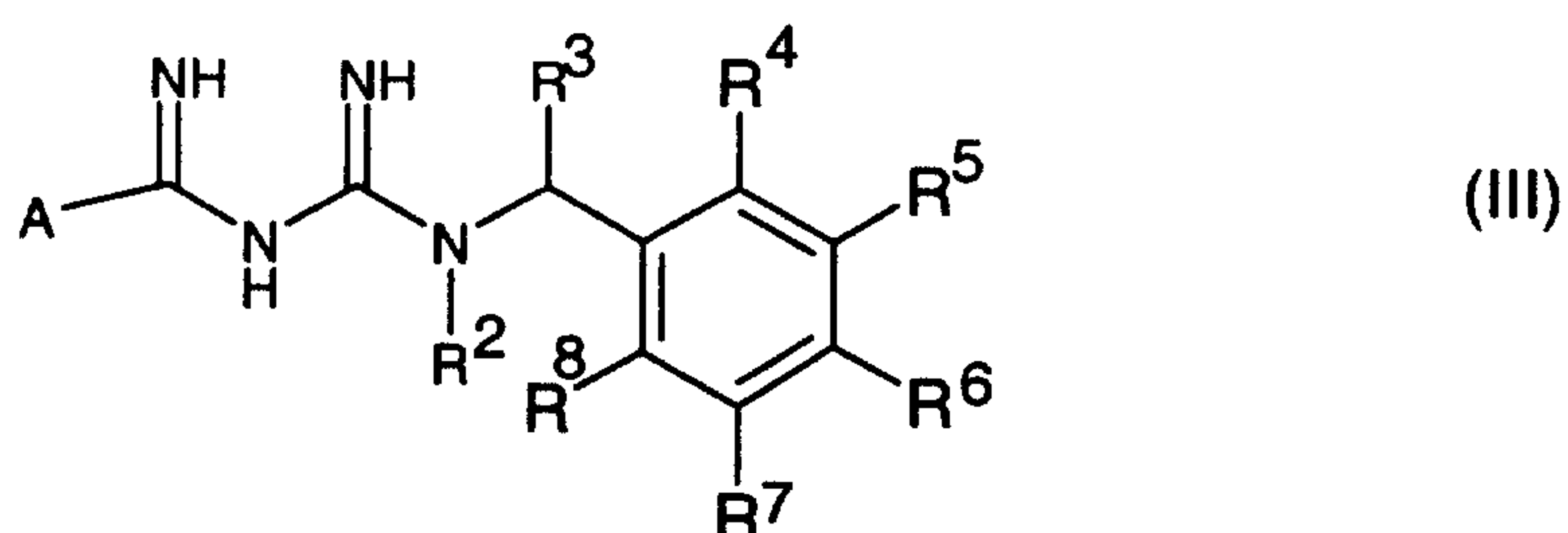
30 The present invention also provides processes for preparing the compounds of the
 formula (I) or salts thereof, which comprise

28

- a) reacting a compound of the formula (II),

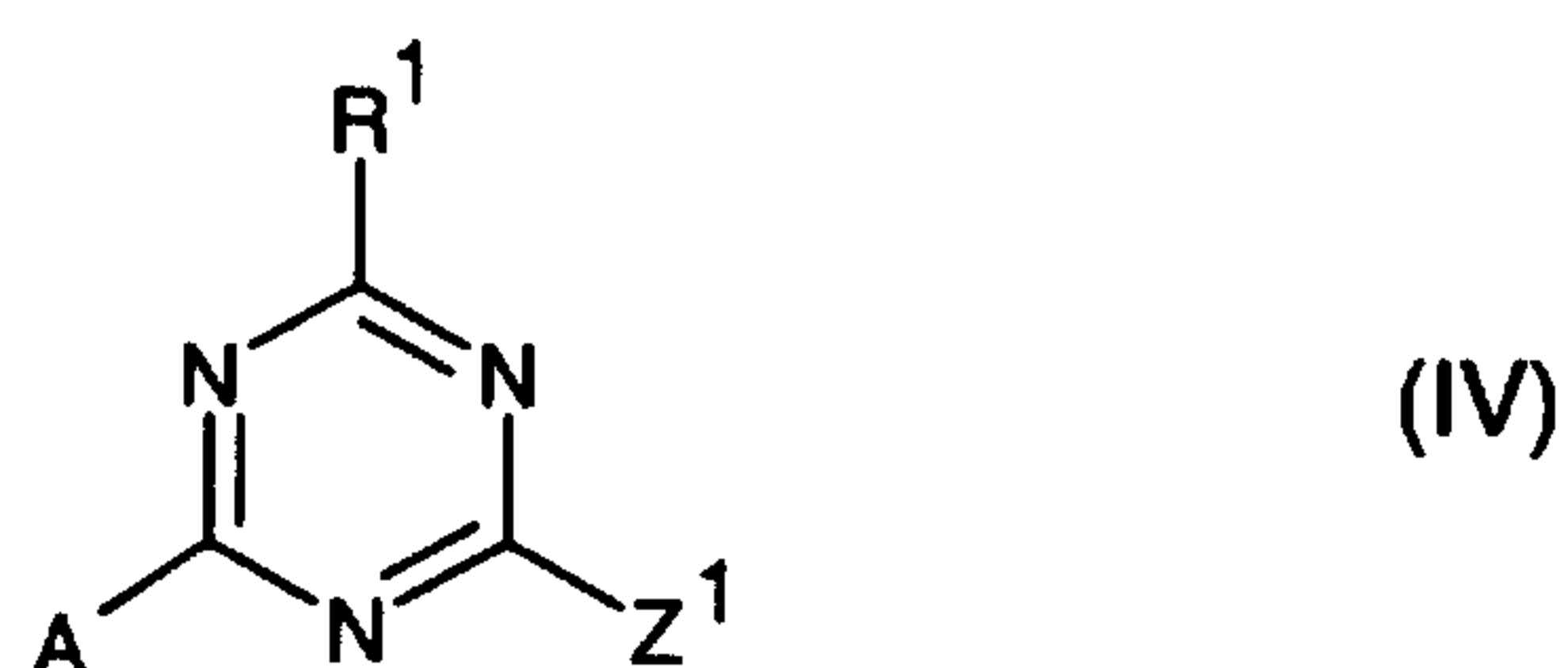


- 5 in which Fu is a functional group selected from the group consisting of the carboxylic esters, carboxylic orthoesters, carbonyl chlorides, carboxamides, carboxylic anhydrides and trichloromethyl with a biguanide of the formula (III) or an acid addition salt thereof



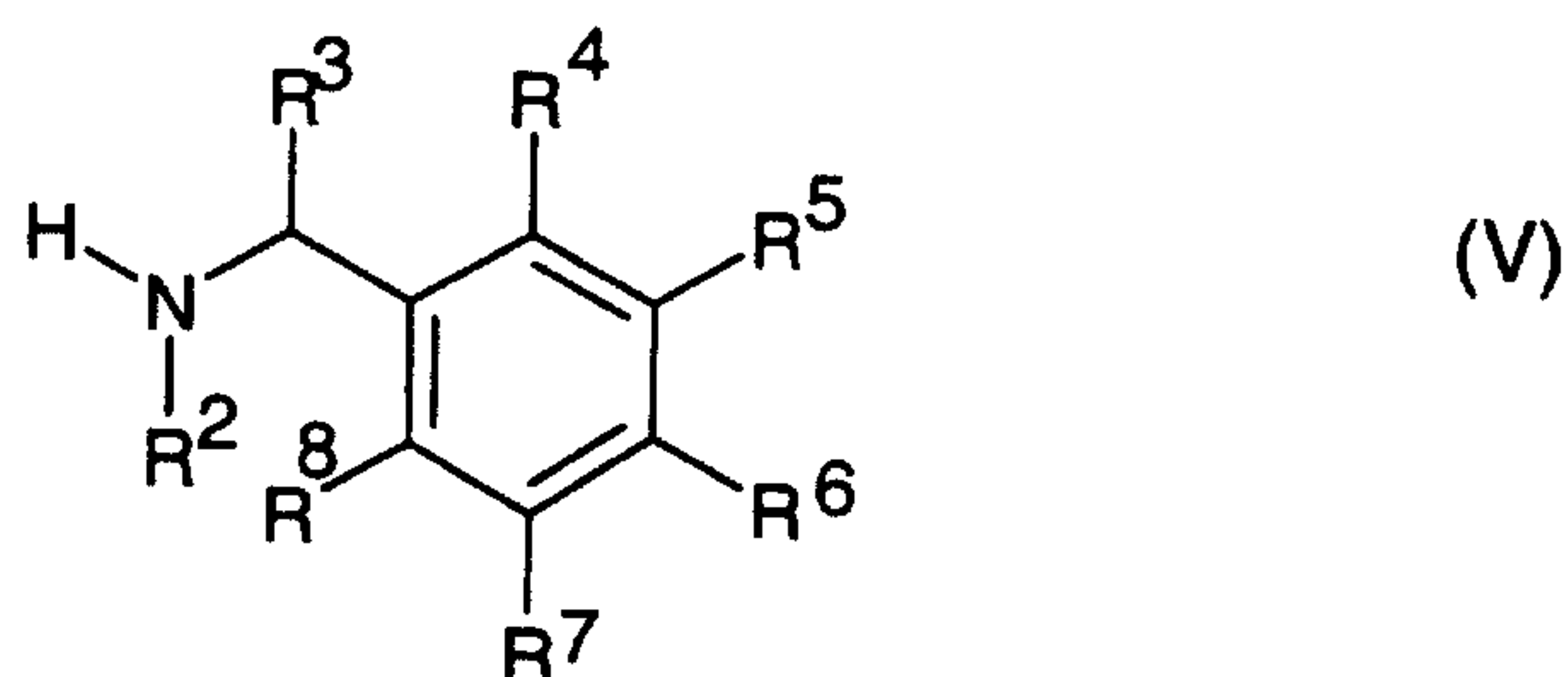
or

- b) reacting a compound of the formula (IV),



in which Z^1 is an exchangeable radical or a leaving group, for example chlorine, trichloromethyl, (C₁-C₄)alkylsulfonyl and unsubstituted or substituted phenyl- (C₁-C₄)alkylsulfonyl or (C₁-C₄)alkylphenylsulfonyl, with a suitable amine of the formula (V) or an acid addition salt thereof

29



where in the formulae (II), (III), (IV) and (V) the radicals R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 and A are as defined in formula (I).

5

The compounds of the formula (II) and (III) are preferably reacted base-catalyzed in an inert organic solvent, such as, for example, tetrahydrofuran (THF), dioxane, acetonitrile, dimethylformamide (DMF), methanol and ethanol, at temperatures between -10°C and the boiling point of the solvent, preferably at from 20°C to 60°C ; if acid addition salts of the formula (III) are used, these are generally liberated in situ with the aid of a base. Suitable bases or basic catalysts are alkali metal hydroxides, alkali metal hydrides, alkali metal carbonates, alkali metal alkoxides, alkaline earth metal hydroxides, alkaline earth metal hydrides, alkaline earth metal carbonates or organic bases, such as triethylamine or 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU).

The base in question is employed, for example, in the range from 0.1 to 3 molar equivalents, based on the compound of the formula (III). Based on the compound of the formula (III), the compound of the formula (II) can be employed, for example, in equimolar amounts or in an excess of up to 2 molar equivalents. In principle, the corresponding processes are known from the literature (compare: Comprehensive Heterocyclic Chemistry, A.R. Katritzky, C.W. Rees, Pergamon Press, Oxford, New York, 1984, Vol.3; Part 2B; ISBN 0-08-030703-5, p.290).

The compounds of the formulae (IV) and (V) are preferably reacted base-catalyzed in an inert organic solvent, such as, for example, THF, dioxane, acetonitrile, DMF, methanol and ethanol, at temperatures between -10°C and the boiling point of the solvent or solvent mixture in question, preferably at from 20°C to 60°C , in particular at from 30°C to 80°C , where the compound (V), if it is employed as acid addition salt, is, if appropriate, liberated in situ using a base. Suitable bases or basic catalysts are alkali metal hydroxides, alkali metal hydrides, alkali metal carbonates, alkali metal

alkoxides, alkaline earth metal hydroxides, alkaline earth metal hydrides, alkaline earth metal carbonates or organic bases such as triethylamine or 1,8-diaza-bicyclo[5.4.0]undec-7-ene (DBU). The base in question is generally employed in the range from 1 to 3 molar equivalents, based on the compound of the formula (IV), and the compound of the formula (IV) can be employed, for example, in equimolar amounts or in an excess of up to 2 molar equivalents, based on the compound of the formula (V). In principle, the corresponding processes are known from the literature (cf. Comprehensive Heterocyclic Chemistry, A.R. Katritzky, C.W. Rees, Pergamon Press, Oxford, New York, 1984, Vol.3; Part 2B; ISBN 0-08-030703-5, p. 482).

The starting materials of the formulae (II), (III), (IV) and (V) are either commercially available, or they can be prepared by or analogously to processes known from the literature. Some of the compounds of the formulae (III) are novel, and they also form part of the subject matter of the invention. The compounds can also be prepared, for example, by one of the processes described below.

The compound of the formula (IV), or a direct precursor thereof, can be prepared, for example, as follows:

1. Reaction of a compound of the formula (II) with an amidinothiourea derivative of the formula (VI),



in which Z^2 is (C₁-C₄)alkyl or phenyl(C₁-C₄)alkyl and A is as defined in formula (I) gives compounds of the formula (IV) in which $\text{Z}^1 = -\text{SZ}^2$.

2. Reaction of amidine of the formula (VII) or an acid addition salt thereof



31

in which R^1 is as defined in formula (I)

with a N-cyanodithioiminocarbonate of the formula (VIII),



5

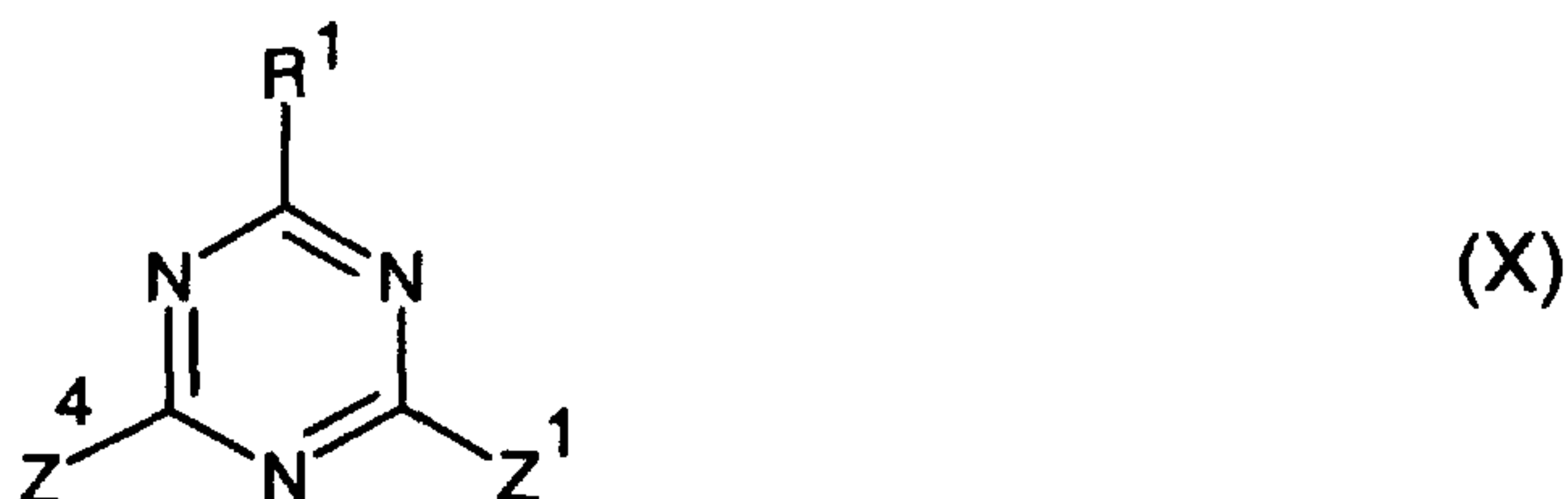
in which Z^3 is (C_1-C_4) alkyl or phenyl (C_1-C_4) alkyl gives compounds of the formula (IV) in which $Z^1 = -S-Z^3$.

3. Reaction of an alkali metal dicyanamide with a carboxylic acid derivative of the formula (II) mentioned gives compounds of the formula (IV) in which $Z^1 = NH_2$.
4. Reaction of trichloroacetonitrile with a nitrile of the formula (IX),



15

in which R^1 is as defined in formula (I) initially gives compounds of the formula (X),



20

in which Z^1 and Z^4 are each CCl_3 which, by subsequent reaction with compounds of the formula H-A (A is as defined in formula (I)), gives compounds of the formula (IV) in which $Z^1 = CCl_3$.

25

The substituted phenyl alkyl amines of the formula (V) required as starting materials are known and/or can be prepared by processes known per se. For example, the corresponding aromatic ketone can be reductively aminated directly to the amine, for example by reaction with sodium cyanoborohydride and ammonium acetate or with a

mixture of ammonium formate and formic acid followed by cleavage of the amide, or the ketone is converted into an advantageous derivative, for example an oxime, which is then reduced to the amine (cf. JP 11035536; JP 11043470; J. Am. Chem. Soc. 1983, 105, 1578; Synthesis 1980, 695).

5

The reaction of the carboxylic acid derivatives of the formula (II) with the amidinothiourea derivatives of the formula (VI) is preferably carried out base-catalyzed in an organic solvent, such as, for example, acetone, THF, dioxane, acetonitrile, DMF, methanol, ethanol, at temperatures from -10°C to the boiling point of the solvent, preferably at from 0°C to 20°C. However, the reaction can also be carried out in water or in aqueous solvent mixtures with one or more of the abovementioned organic solvents. If (VI) is employed as acid addition salt, it can, if appropriate, be liberated in situ using a base. Suitable bases or basic catalysts are alkali metal hydroxides, alkali metal hydrides, alkali metal carbonates, alkali metal alkoxides, alkaline earth metal hydroxides, alkaline earth metal hydrides, alkaline earth metal carbonates or organic bases, such as triethylamine or 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU). The base in question is, for example, employed in the range from 1 to 3 molar equivalents, based on the compound of the formula (VI). Compounds of the formula (II) and (VI) can be employed, for example, in equimolar amounts, or with an excess of up to 2 molar equivalents of the compound of the formula (II). In principle, the corresponding processes are known from the literature (compare: H. Eilingsfeld, H. Scheuermann, Chem. Ber.; 1967, 100, 1874); the corresponding intermediates of the formula (IV) are novel.

25 The reaction of the amidines of the formula (VII) with the N-cyanodithioiminocarbonates of the formula (VIII) is preferably carried out base-catalyzed in an inert organic solvent, such as, for example, acetonitrile, DMF, dimethylacetamide (DMA), N-methylpyrrolidone (NMP), methanol and ethanol, at temperatures from -10°C to the boiling point of the solvent, preferably at from 20°C to 30 80°C. If (VII) is employed as acid addition salt, it can, if appropriate, be liberated in situ using a base. Suitable bases or basic catalysts are alkali metal hydroxides, alkali metal hydrides, alkali metal carbonates, alkali metal alkoxides, alkaline earth metal hydroxides, alkaline earth metal hydrides, alkaline earth metal carbonates or organic bases, such as triethylamine or 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU). The base

in question is employed, for example, in the range from 1 to 3 molar equivalents, based on the compound of the formula (VIII), and compounds of the formulae (VII) and (VIII) can generally be employed in equimolar amounts or with an excess of two molar equivalents of the compound of the formula (II). In principle, the corresponding processes are known from the literature (compare: T.A. Riley, W.J. Henney, N.K. Dalley, B.E. Wilson, R.K. Robins; J. Heterocyclic Chem.; 1986, 23 (6), 1706-1714); the corresponding intermediates of the formula (IV) are novel.

Intermediates of the formula (X) where Z^1 = chlorine can be prepared by reacting alkali metal dicyanamide with a carboxylic acid derivative of the formula (II), Fu then preferably being the functional group carbonyl chloride or carboxamide. The reaction of the reaction components is carried out, for example, acid-catalyzed in an inert organic solvent, such as, for example, toluene, chlorobenzene, chlorinated hydrocarbons, at temperatures between -10°C and the boiling point of the solvent, preferably at from 20°C to 80°C , where the intermediates formed can be chlorinated in situ using a suitable chlorinating agent, such as, for example, phosphorus oxychloride. Suitable acids are, for example, hydrohalic acids, such as HCl, or else Lewis acids, such as, for example, AlCl_3 or BF_3 (compare US-A-5095113, DuPont).

Intermediates of the formula (X) where Z^1, Z^4 = trihalomethyl can be prepared by reacting the corresponding trihaloacetonitriles with a carbonitrile of the formula (IX). The reaction of the reaction components is carried out, for example, acid-catalyzed in an inert organic solvent, such as, for example, toluene, chlorobenzene, chlorinated hydrocarbons, at temperatures between -40°C and the boiling point of the solvent, preferably at from -10°C to 30°C . Suitable acids are, for example, hydrohalic acids, such as HCl, or else Lewis acids, such as, for example, AlCl_3 or BF_3 (cf. EP-A-130939, Ciba Geigy).

Intermediates of the formula (IV), in which Z^1 = $(\text{C}_1\text{-C}_4)$ alkylmercapto or unsubstituted phenyl $(\text{C}_1\text{-C}_4)$ alkylmercapto, can be converted in an inert organic solvent, such as, for example toluene, chlorobenzene, chlorinated hydrocarbons or others, at temperatures between -40°C and the boiling point of the solvent, preferably at from 20°C to 80°C , with a suitable chlorinating agent, such as, for example elemental chlorine or

phosphorus oxychloride, into more reactive chlorotriazines of the formula (IV), in which $Z^1 = \text{Cl}$ (cf. J.K. Chakrabarti, D.E. Tupper; Tetrahedron 1975, 31(16), 1879-1882).

Intermediates of the formula (IV), in which $Z^1 = (\text{C}_1\text{-C}_4)\text{alkylmercapto}$ or unsubstituted or substituted phenyl($\text{C}_1\text{-C}_4$)alkylmercapto or ($\text{C}_1\text{-C}_4$)alkylphenylthio, can be oxidized in a suitable solvent, such as, for example, chlorinated hydrocarbons, acetic acid, water, alcohols, acetone or mixtures thereof at temperatures between 0°C and the boiling point of the solvent, preferably at from 20°C to 80°C , with a suitable oxidizing agent, such as, for example, m-chloroperbenzoic acid, hydrogen peroxide, potassium peroxomonosulfate (compare: T.A. Riley, W.J. Henney, N.K. Dalley, B.E. Wilson, R.K. Robins; J. Heterocyclic Chem.; 1986, 23 (6), 1706-1714).

The following acids are suitable for preparing the acid addition salts of the compounds of the formula (I): hydrohalic acids, such as hydrochloric acid or hydrobromic acid, furthermore phosphoric acid, nitric acid, sulfuric acid, mono- or bifunctional carboxylic acids and hydroxycarboxylic acids, such as acetic acid, maleic acid, succinic acid, fumaric acid, tartaric acid, citric acid, salicylic acid, sorbic acid or lactic acid, and also sulfonic acids, such as p-toluenesulfonic acid and 1,5-naphthalenedisulfonic acid. The acid addition compounds of the formula (I) can be obtained in a simple manner by the customary methods for forming salts, for example by dissolving a compound of the formula (I) in a suitable organic solvent, such as, for example, methanol, acetone, methylene chloride or benzene, and adding the acid at temperatures from 0 to 100°C , and they can be isolated in a known manner, for example by filtration, and, if appropriate, purified by washing with an inert organic solvent.

The base addition salts of the compounds of the formula (I) are preferably prepared in inert polar solvents, such as, for example, water, methanol or acetone, at temperatures from 0 to 100°C . Examples of bases which are suitable for the preparation of the salts according to the invention are alkali metal carbonates, such as potassium carbonate, alkali metal hydroxides and alkaline earth metal hydroxides, for example NaOH or KOH, alkali metal hydrides and alkaline earth metal hydrides, for example NaH, alkali metal alkoxides and alkaline earth metal alkoxides, for example sodium methoxide or potassium tert-butoxide, or ammonia or ethanolamine.

Solvents referred to as "inert solvents" in the above process variants are to be understood as meaning in each case solvents which are inert under the reaction conditions in question, but which need not be inert under all reaction conditions.

5

A collection of compounds (I) which can be synthesized by the abovementioned process may also be prepared in a parallel manner where the process may be carried out manually, partially automated or fully automated. In this case, it is possible to automate the procedure of the reaction, the work-up or the purification of the products or of the intermediates. In total, this is to be understood as meaning a procedure as is described, for example, by S. H. DeWitt in "Annual Reports in Combinatorial Chemistry and Molecular Diversity: Automated Synthesis", Volume 1, Verlag Escom, 1997, pages 69 to 77.

15 A number of commercially available apparatuses as are offered by, for example, Stem Corporation, Woodrolfe Road, Tollesbury, Essex, CM9 8SE, England and H+P Labortechnik GmbH, Bruckmannring 28, 85764 Oberschleißheim, Germany may be used for the parallel procedure of the reaction and work-up. For the parallel purification of compounds (I), or of intermediates obtained during the preparation, use may be made, inter alia, of chromatography apparatuses, for example those from ISCO, Inc., 20 4700 Superior Street, Lincoln, NE 68504, USA. The apparatuses mentioned lead to a modular procedure in which the individual process steps are automated, but manual operations have to be performed between the process steps. This can be avoided by employing semi-integrated or fully integrated automation systems where the automation modules in question are operated by, for example, robots. Such 25 automation systems can be obtained, for example, from Zymark Corporation, Zymark Center, Hopkinton, MA 01748, USA.

In addition to the methods described here, compounds (I) may be prepared in part or 30 fully by solid-phase-supported methods. For this purpose, individual intermediate steps or all intermediate steps of the synthesis or of a synthesis adapted to suit the procedure in question are bound to a synthetic resin. Solid-phase-supported synthesis methods are described extensively in the specialist literature, for example Barry A. Bunin in "The Combinatorial Index", Verlag Academic Press, 1998.

The use of solid-phase-supported synthesis methods permits a series of protocols which are known from the literature and which, in turn, can be performed manually or in an automated manner. For example, the "tea-bag method" (Houghten, US 4,631,211; Houghten et al., Proc. Natl. Acad. Sci, 1985, 82, 5131-5135), in which
5 products from IRORI, 11149 North Torrey Pines Road, La Jolla, CA 92037, USA, are employed, may be partially automated. The automation of solid-phase-supported parallel synthesis is performed successfully, for example, by apparatuses from Argonaut Technologies, Inc., 887 Industrial Road, San Carlos, CA 94070, USA or MultiSynTech GmbH, Wullener Feld 4, 58454 Witten, Germany.

10

The preparation methods described here give compounds (I) in the form of collections of substances known as libraries. The present invention also relates to libraries of the compounds (I) which contain at least two compounds (I) and their intermediates.

15 The compounds of the formula (I) according to the invention and their salts, hereinbelow together referred to as compounds of the formula (I) (according to the invention), have excellent herbicidal activity against a broad spectrum of economically important monocotyledonous and dicotyledonous harmful plants. The active
20 compounds also act efficiently on perennial weeds which produce shoots from rhizomes, root stocks or other perennial organs and which are difficult to control. In this context, it is generally immaterial whether the substances are applied pre-sowing, pre-emergence or post-emergence.

Specifically, examples may be mentioned of some representatives of the
25 monocotyledonous and dicotyledonous weed flora which can be controlled by the compounds according to the invention, without these being a restriction to certain species.

Examples of weed species on which the active compounds act efficiently are, from amongst the monocotyledons, Avena, Lolium, Alopecurus, Phalaris, Echinochloa,
30 Digitaria, Setaria and also Cyperus species from the annual sector and, from amongst the perennial species, Agropyron, Cynodon, Imperata and Sorghum, and also perennial Cyperus species.

In the case of the dicotyledonous weed species, the spectrum of action extends to species such as, for example, Galium, Viola, Veronica, Lamium, Stellaria, Amaranthus,

Sinapis, Ipomoea, Matricaria, Abutilon and Sida from amongst the annuals, and Convolvulus, Cirsium, Rumex and Artemisia in the case of the perennial weeds. The active compounds according to the invention also effect outstanding control of harmful plants which occur under the specific conditions of rice-growing such as, for example, Sagittaria, Alisma, Eleocharis, Scirpus and Cyperus.

If the compounds according to the invention are applied to the soil surface prior to germination, then the weed seedlings are either prevented completely from emerging, or the weeds grow until they have reached the cotyledon stage but then their growth stops, and, eventually, after three to four weeks have elapsed, they die completely.

If the active compounds are applied post-emergence to the green parts of the plants, growth also stops drastically a very short time after the treatment and the weed plants remain at the developmental stage of the point in time of application, or they die completely after a certain time, so that in this manner competition from the weeds, which is harmful to the crop plants, is eliminated at a very early point in time and in a sustained manner.

Although the compounds according to the invention have an excellent herbicidal activity against monocotyledonous and dicotyledonous weeds, crop plants of economically important crops, for example wheat, barley, rye, rice, corn, sugar beet, cotton and soya, are not damaged at all, or only to a negligible extent. For these reasons, the present compounds are highly suitable for selectively controlling undesired plant growth in plantings of agriculturally useful plants.

In addition, the substances according to the invention have outstanding growth-regulating properties in crop plants. They engage in the plant metabolism in a regulating manner and can thus be employed for the targeted control of plant constituents and for facilitating harvesting, such as for example by provoking desiccation and stunted growth. Furthermore, they are also suitable for generally regulating and inhibiting undesirable vegetative growth, without destroying the plants in the process. Inhibition of vegetative growth plays an important role in many monocotyledonous and dicotyledonous crops because lodging can be reduced hereby, or prevented completely.

Owing to their herbicidal and plant-growth-regulatory properties, the active compounds can also be employed for controlling harmful plants in crops of known or still to be developed genetically engineered plants. The transgenic plants generally have particularly advantageous properties, for example resistance to certain pesticides, in particular certain herbicides, resistance to plant diseases or causative organisms of plant diseases, such as certain insects or microorganisms such as fungi, bacteria or viruses. Other particular properties relate, for example, to the quantity, quality, storage stability, composition and to specific ingredients of the harvested product. Thus, transgenic plants having an increased starch content or a modified quality of the starch or those having a different fatty acid composition of the harvested product are known.

The use of the compounds of the formula (I) according to the invention or their salts in economically important transgenic crops of useful and ornamental plants, for example of cereals, such as wheat, barley, rye, oats, millet, rice, manioc and corn, or else in crops of sugar beet, cotton, soya, oilseed rape, potato, tomato, pea and other vegetable species is preferred.

The compounds of the formula (I) can preferably be used as herbicides in crops of useful plants which are resistant or which have been made resistant by genetic engineering toward the phytotoxic effects of the herbicides.

Conventional ways of preparing novel plants which have modified properties compared to known plants comprise, for example, traditional breeding methods and the generation of mutants. Alternatively, novel plants having modified properties can be produced with the aid of genetic engineering methods (see, for example, EP-A-0221044, EP-A-0131624). For example, there have been described several cases of

- genetically engineered changes in crop plants in order to modify the starch synthesized in the plants (for example WO 92/11376, WO 92/14827 and WO 91/19806),
- transgenic crop plants which are resistant to certain herbicides of the glufosinate-type (cf., for example, EP-A-0242236, EP-A-0242246) or glyphosate-type (WO 92/00377), or of the sulfonylurea-type (EP-A-0257993, US-A-5013659),

- transgenic crop plants, for example cotton, having the ability to produce *Bacillus thuringiensis* toxins (Bt toxins) which impart resistance to certain pests to the plants (EP-A-0142924, EP-A-0193259),
- transgenic crop plants having a modified fatty acid composition (WO 91/13972).

5

Numerous molecular biological techniques which allow the preparation of novel transgenic plants having modified properties are known in principle; see, for example, Sambrook et al., 1989, *Molecular Cloning, A Laboratory Manual*, 2nd ed. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY; or Winnacker "Gene und Klone" [Genes and Clones], VCH Weinheim, 2nd edition 1996, or Christou, "Trends in Plant Science" 1 (1996) 423-431).

10

In order to carry out such genetic engineering manipulations, it is possible to introduce nucleic acid molecules into plasmids which allow a mutagenesis or a change in the sequence to occur by recombination of DNA sequences. Using the abovementioned standard processes it is possible, for example, to exchange bases, to remove partial sequences or to add natural or synthetic sequences. To link the DNA fragments with each other, it is possible to attach adaptors or linkers to the fragments.

15

Plant cells having a reduced activity of a gene product can be prepared, for example, by expressing at least one appropriate antisense-RNA, a sense-RNA to achieve a cosuppression effect, or by expressing at least one appropriately constructed ribozyme which specifically cleaves transcripts of the abovementioned gene product.

20

To this end, it is possible to employ both DNA molecules which comprise the entire coding sequence of a gene product including any flanking sequences that may be present, and DNA molecules which comprise only parts of the coding sequence, it being necessary for these parts to be long enough to cause an antisense effect in the cells. It is also possible to use DNA sequences which have a high degree of homology to the coding sequences of a gene product but which are not entirely identical.

25

30

When expressing nucleic acid molecules in plants, the synthesized protein can be localized in any desired compartment of the plant cell. However, to achieve localization in a certain compartment, it is, for example, possible to link the coding region with DNA

sequences which ensure localization in a certain compartment. Such sequences are known to the person skilled in the art (see, for example, Braun et al., EMBO J. 11 (1992), 3219-3227; Wolter et al., Proc. Natl. Acad. Sci. USA 85 (1988), 846-850; Sonnewald et al., Plant J. 1 (1991), 95-106).

5

The transgenic plant cells can be regenerated to whole plants using known techniques. The transgenic plants can in principle be plants of any desired plant species, i.e. both monocotyledonous and dicotyledonous plants.

10 In this manner, it is possible to obtain transgenic plants which have modified properties by overexpression, suppression or inhibition of homologous (= natural) genes or gene sequences or by expression of heterologous (= foreign) genes or gene sequences.

15 The compounds (I) according to the invention can preferably be used in transgenic crops which are resistant to herbicides selected from the group consisting of the sulfonylureas, imidazolinones, glufosinate-ammonium or glyphosate-isopropylammonium and analogous active compounds.

20 When using the active compounds according to the invention in transgenic crops, in addition to the effects against harmful plants which can be observed in other crops, there are frequently effects which are specific for the application in the respective transgenic crop, for example a modified or specifically broadened spectrum of weeds which can be controlled, modified application rates which can be used for the application, preferably good combinability with the herbicides to which the transgenic
25 crop is resistant, and an effect on the growth and the yield of the transgenic crop plants.

The invention therefore also provides for the use of the compounds (I) according to the invention as herbicides for controlling harmful plants in transgenic crop plants.

30

The compounds according to the invention can be applied in the customary formulations in the form of wettable powders, emulsifiable concentrates, sprayable solutions, dusts or granules. The invention therefore also provides herbicidal and plant-growth-regulating compositions comprising compounds of the formula (I).

The compounds of the formula (I) can be formulated in various ways depending on the prevailing biological and/or chemico-physical parameters. Examples of suitable formulation options are: wettable powders (WP), water-soluble powders (SP), water-soluble concentrates, emulsifiable concentrates (EC), emulsions (EW), such as oil-in-water and water-in-oil emulsions, sprayable solutions, suspension concentrates (SC), oil- or water-based dispersions, oil-miscible solutions, capsule suspensions (CS), dusts (DP), seed-dressing compositions, granules for broadcasting and soil application, granules (GR) in the form of microgranules, spray granules, coating granules and adsorption granules, water-dispersible granules (WG), water-soluble granules (SG), ULV formulations, microcapsules and waxes.

These individual formulation types are known in principle and are described, for example, in Winnacker-Küchler, "Chemische Technologie" [Chemical Technology], Volume 7, C. Hauser Verlag Munich, 4th edition 1986; Wade van Valkenburg, "Pesticide Formulations", Marcel Dekker, N.Y., 1973; K. Martens, "Spray Drying" Handbook, 3rd ed. 1979, G. Goodwin Ltd. London.

The necessary formulation auxiliaries, such as inert materials, surfactants, solvents and other additives, are likewise known and are described, for example, in: Watkins, "Handbook of Insecticide Dust Diluents and Carriers", 2nd ed., Darland Books, Caldwell N.J., H.v. Olphen, "Introduction to Clay Colloid Chemistry"; 2nd ed., J. Wiley & Sons, N.Y.; C. Marsden, "Solvents Guide"; 2nd ed., Interscience, N.Y. 1963; McCutcheon's "Detergents and Emulsifiers Annual", MC Publ. Corp., Ridgewood N.J.; Sisley and Wood, "Encyclopedia of Surface Active Agents", Chem. Publ. Co. Inc., N.Y. 1964; Schönfeldt, "Grenzflächenaktive Äthylenoxidaddukte" [Surface-active ethylene oxide adducts], Wiss. Verlagsgesell., Stuttgart 1976; Winnacker-Küchler, "Chemische Technologie" [Chemical Technology], Volume 7, C. Hauser Verlag Munich, 4th edition 1986.

Based on these formulations it is also possible to produce combinations with other pesticidally active substances, for example insecticides, acaricides, herbicides and fungicides, and also with safeners, fertilizers and/or growth regulators, for example in the form of a ready-mix or tank mix.

Wettable powders are preparations which are uniformly dispersible in water and which, in addition to the active compound and as well as a diluent or inert substance, also contain surfactants of ionic and/or nonionic type (wetting agents, dispersants), for example polyethoxylated alkyl phenols, polyethoxylated fatty alcohols, polyethoxylated fatty amines, fatty alcohol polyglycol ethersulfates, alkanesulfonates, alkylbenzenesulfonates, sodium ligninsulfonate, sodium 2,2'-dinaphthylmethane-6,6'-disulfonate, sodium dibutyl-naphthalenesulfonate or else sodium oleoylmethyltaurinate. To prepare the wettable powders, the herbicidally active compounds are finely ground, for example in customary apparatuses such as hammer mills, fan mills and air-jet mills, and are mixed simultaneously or subsequently with the formulation auxiliaries.

Emulsifiable concentrates are prepared by dissolving the active compound in an organic solvent, for example butanol, cyclohexanone, dimethylformamide, xylene or else relatively high-boiling aromatics or hydrocarbons or mixtures of the organic solvents, with the addition of one or more surfactants of ionic and/or nonionic type (emulsifiers). Examples of emulsifiers which can be used are calcium alkylarylsulfonates, such as Ca dodecylbenzenesulfonate, or nonionic emulsifiers, such as fatty acid polyglycol esters, alkylaryl polyglycol ethers, fatty alcohol polyglycol ethers, propylene oxide-ethylene oxide condensation products, alkyl polyethers, sorbitan esters, for example sorbitan fatty acid esters or polyoxyethylene sorbitan esters, for example polyoxyethylene sorbitan fatty acid esters.

Dusts are obtained by grinding the active compound with finely divided solid substances, for example talc, natural clays, such as kaolin, bentonite and pyrophyllite, or diatomaceous earth.

Suspension concentrates can be water- or oil-based. They can be prepared, for example, by wet milling using commercially customary bead mills, with or without the addition of surfactants as already mentioned above, for example, in the case of the other formulation types.

Emulsions, for example oil-in-water emulsions (EW), can be prepared for example by means of stirrers, colloid mills and/or static mixers using aqueous organic solvents

and, if desired, surfactants as already mentioned above, for example, in the case of the other formulation types.

Granules can be prepared either by spraying the active compound onto adsorptive, granulated inert material or by applying active-compound concentrates to the surface of carriers such as sand, kaolinites or granulated inert material, by means of adhesive binders, for example polyvinyl alcohol, sodium polyacrylate or else mineral oils.

Suitable active compounds can also be granulated in the manner which is customary for the preparation of fertilizer granules, if desired as a mixture with fertilizers.

Water-dispersible granules are generally prepared by the customary processes, such as spray-drying, fluidized-bed granulation, disk granulation, mixing using high-speed mixers, and extrusion without solid inert material. For the preparation of disk, fluidized-bed, extruder and spray granules, see for example processes in "Spray-Drying Handbook" 3rd ed. 1979, G. Goodwin Ltd., London; J.E. Browning, "Agglomeration", Chemical and Engineering 1967, pages 147 ff; "Perry's Chemical Engineer's Handbook", 5th ed., McGraw-Hill, New York 1973, pp. 8-57.

For further details on the formulation of crop protection products, see for example G.C. Klingman, "Weed Control as a Science", John Wiley and Sons., Inc., New York, 1961, pages 81-96 and J.D. Freyer, S.A. Evans, "Weed Control Handbook", 5th ed., Blackwell Scientific Publications, Oxford, 1968, pages 101-103.

The agrochemical formulations generally contain from 0.1 to 99% by weight, in particular from 0.1 to 95% by weight, of active compound of the formula (I).

In wettable powders the concentration of active compound is, for example, from about 10 to 90% by weight, the remainder to 100% by weight consisting of customary formulation constituents. In emulsifiable concentrates the concentration of active compound can be from about 1 to 90%, preferably from 5 to 80%, by weight.

Formulations in the form of dusts contain from 1 to 30% by weight of active compound, preferably most commonly from 5 to 20% by weight of active compound, while sprayable solutions contain from about 0.05 to 80%, preferably from 2 to 50%, by weight of active compound. In the case of water-dispersible granules, the content of active compound depends partly on whether the active compound is in liquid or solid

form and on the granulation auxiliaries, fillers, etc. that are used. In water-dispersible granules the content of active compound, for example, is between 1 and 95% by weight, preferably between 10 and 80% by weight.

5 In addition, said formulations of active compound may comprise the tackifiers, wetting agents, dispersants, emulsifiers, penetrants, preservatives, antifreeze agents, solvents, fillers, carriers, colorants, antifoams, evaporation inhibitors and pH and viscosity regulators which are customary in each case.

10 The compounds of the formula (I) or their salts can be used as such or combined in the form of their preparations (formulations) with other pesticidally active compounds, such as, for example, insecticides, acaricides, nematocides, herbicides, fungicides, safeners, fertilizers and/or growth regulators, for example as finished formulations or tank mixes.

15 Suitable active compounds which can be combined with the active compounds according to the invention in mixed formulations or in a tank mix are, for example, known active compounds, as described, for example, in Weed Research 26, 441-445 (1986), or in "The Pesticide Manual", 10th edition, The British Crop Protection Council
20 and the Royal Soc. of Chemistry, 1994, and in the literature cited therein. For example, the following active compounds may be mentioned as herbicides or plant-growth regulators which are known from the literature and which can be combined with the compounds of the formula (I) (note: the compounds are either referred to by the "common name" in accordance with the International Organization for Standardization
25 (ISO) or by the chemical names, if appropriate together with a customary code number):

acetochlor; acifluorfen(-sodium); aclonifen; AKH 7088, i.e. [[[1-[5-[2-chloro-4-(trifluoromethyl)phenoxy]-2-nitrophenyl]-2-methoxyethylidene]amino]oxy]acetic acid and its methyl ester; alachlor; alloxydim(-sodium); ametryn; amidochlor, amidosulfuron;
30 amitrol; AMS, i.e. ammonium sulfamate; anilofos; asulam; atrazine; azafenidin; azimsulfuron (DPX-A8947); aziprotryn; barban; BAS 516 H, i.e. 5-fluoro-2-phenyl-4H-3,1-benzoxazin-4-one; beflubutamid; benazolin(-ethyl); benfluralin; benfuresate; bensulfuron(-methyl); bensulide; bentazone; benzobicyclone; benzofenap; benzofluor; benzoylprop(-ethyl); benzthiazuron; bialaphos; bifenox; bispyribac(-sodium); bromacil;

bromobutide; bromofenoxim; bromoxynil; bromuron; buminafos; busoxinone;
 butachlor; butafenacil; butamifos; butenachlor; buthidazole; butralin; butroxydim;
 butylate; cafenstrole (CH-900); carbetamide; cafentrazone(-ethyl) (ICI-A0051);
 caloxydim, CDAA, i.e. 2-chloro-N,N-di-2-propenylacetamide; CDEC, i.e. 2-chloroallyl
 5 diethyldithiocarbamate; chlomethoxyfen; chloramben; chlorazifop-butyl; chlormesulon
 (ICI-A0051); chlorbromuron; chlorbufam; chlorfenac; chlorflurecol-methyl; chloridazon;
 chlorimuron(-ethyl); chlornitrofen; chlorotoluron; chloroxuron; chlorpropham;
 chlorsulfuron; chlorthal-dimethyl; chlorthiamid; chlortoluron, cinmethylin; cinosulfuron;
 clethodim; cinidon(-methyl), clefoxydim, clodinafop and its ester derivatives (for
 10 example clodinafop-propargyl); clomazone; clomeprop; cloproxydim; clopyralid;
 clopyrasulfuron(-methyl); cloransulam(-methyl); cumyluron (JC 940); cyanazine;
 cycloate; cyclosulfamuron (AC 104); cycloxydim; cycluron; cyhalofop and its ester
 derivatives (for example butyl-ester DEH-112); cyperquat; cyprazine; cyprazole;
 daimuron; 2,4-D; 2,4-DB; dalapon; desmedipham; desmetryn; di-allate; dicamba;
 15 dichlobenil; dichlorprop; diclofop and its esters such as diclofop-methyl; diclosulam,
 diethatyl(-ethyl); difenoxuron; difenzoquat; diflufenican; diflufenzopyr; dimefuron;
 dimepiperate; dimethachlor; dimethametryn; dimethenamid (SAN-582H); dimethazone,
 dimexyflam, dimethipin; dimetrasulfuron, dinitramine; dinoseb; dinoterb; diphenamid;
 dipropetryn; diquat; dithiopyr; diuron; DNOC; eglinazone-ethyl; EL 77, i.e. 5-cyano-
 20 1-(1,1-dimethylethyl)-N-methyl-1H-pyrazole-4-carboxamide; endothal; epoprodan,
 EPTC; esprocarb; ethalfluralin; ethametsulfuron-methyl; ethidimuron; ethiozin;
 ethofumesate; ethoxysulfuron, etobenzanid (HW 52); F5231, i.e. N-[2-chloro-4-fluoro-
 5-[4-(3-fluoropropyl)-4,5-dihydro-5-oxo-1H-tetrazol-1-yl]-phenyl]ethanesulfonamide;
 ethoxyfen and its esters (for example ethyl ester, HN-252); fenoprop; fenoxan,
 25 fenoxaprop and fenoxaprop-P and their esters, for example fenoxaprop-P-ethyl and
 fenoxaprop-ethyl; fenoxycidim; fentrazamide; fenuron; flamprop(-methyl or -isopropyl or
 -isopropyl-L); flazasulfuron; floazulate, florasulam; fluazifop and fluazifop-P and their
 esters, for example fluazifop-butyl and fluazifop-P-butyl; flucarbazone(-sodium);
 fluchloralin; flumetsulam; flumeturon; flumiclorac(-pentyl); flumioxazin (S-482);
 30 flumipropyn; fluometuron; fluoro-chloridone, fluorodifen; fluoroglycofen(-ethyl);
 flupoxam (KNW-739); flupropacil (UBIC-4243); flupyrsulfuron(-methyl, or -sodium);
 flurenol(-butyl); fluridone; flurochloridone; fluroxypyr(-methyl); flurprimidol, flurtamone;
 fluthiacet(-methyl); fluthiamide; fomesafen; fosamine; furyloxyfen; glufosinate(-
 ammonium); glyphosate(-isopropylammonium); halosafen; halosulfuron(-methyl) and

its esters (for example the methyl ester, NC-319); haloxyfop and its esters; haloxyfop-P (= R-haloxyfop) and its esters; hexazinone; imazamethabenz(-methyl); imazapyr; imazaquin and salts such as the ammonium salts; imazamethapyr; imazamox; imazapic, imazethamethapyr; imazethapyr, imazosulfuron; indanofan; ioxynil;

5 isocarbamid; isopropalin; isoproturon; isouron; isoxaben; isoxachlortole; isoxaflutole; isoxapyrifop; karbutilate; lactofen; lenacil; linuron; MCPA; MCPB; mecoprop; mefenacet; mefluidid; mesotrione; metamitron; metazachlor; methabenzthiazuron; metham; methazole; methoxyphenone; methyldymron; metabenzuron, methobenzuron; metobromuron; (alpha-)metolachlor; metosulam (XRD 511);

10 metoxuron; metribuzin; metsulfuron-methyl; MH; molinate; monalide; monocarbamide dihydrogensulfate; monolinuron; monuron; MT 128, i.e. 6-chloro-N-(3-chloro-2-propenyl)-5-methyl-N-phenyl-3-pyridazinamine; MT 5950, i.e. N-[3-chloro-4-(1-methylethyl)-phenyl]-2-methylpentanamide; naproanilide; napropamide; naptalam; NC 310, i.e. 4-(2,4-dichlorobenzoyl)-1-methyl-5-benzyloxypyrazole; neburon; nicosulfuron;

15 nipyracllophen; nitralin; nitrofen; nitrofluorfen; norflurazon; orbencarb; oryzalin; oxadiargyl (RP-020630); oxadiazone; oxasulfuron; oxaciclomefone; oxyfluorfen; paraquat; pebulate; pelargonic acid; pendimethalin; pentoxazone; perfluidone; phenisopham; phenmedipham; picloram; picolinafen; piperophos; piributicarb; pirifenop-butyl; pretilachlor; primisulfuron(-methyl); procarbazon(-sodium);

20 procyzazine; prodiamine; profluralin; proglinazine(-ethyl); prometon; prometryn; propachlor; propanil; propaquizafop and its esters; propazine; propham; propisochlor; propyzamide; prosulfalin; prosulfocarb; prosulfuron (CGA-152005); prynachlor; pyroflufen(-ethyl); pyrazolate; pyrazon; pyrazosulfuron(-ethyl); pyrazoxyfen; pyribenzoxim; pyributicarb; pyridafol; pyridate; pyriminobac(-methyl); pyriothiobac(-sodium) (KIH-2031); pyroxyfop and its esters (for example propargyl ester); quinclorac;

25 quinmerac; quincloramine, quinoxifop and its ester derivatives, quizalofop and quizalofop-P and their ester derivatives, for example quizalofop-ethyl; quizalofop-P-tefuryl and -ethyl; renriduron; rimsulfuron (DPX-E 9636); S 275, i.e. 2-[4-chloro-2-fluoro-5-(2-propynyloxy)phenyl]-4,5,6,7-tetrahydro-2H-indazole; sebumeton;

30 sethoxydim; siduron; simazine; simetryn; SN 106279, i.e. 2-[[7-[2-chloro-4-(trifluoromethyl)phenoxy]-2-naphthalenyl]oxy]propanoic acid and its methyl ester; sulcotrione; sulfentrazone (FMC-97285, F-6285); sulfazuron; sulfometuron(-methyl); sulfosate (ICI-A0224); sulfosulfuron; TCA; tebutam (GCP-5544); tebuthiuron; tepraloxym; terbacil; terbucarb; terbutachlor; terbumeton; terbuthylazine; terbutryn;

TFH 450, i.e. N,N-diethyl-3-[(2-ethyl-6-methylphenyl)sulfonyl]-1H-1,2,4-triazole-1-carboxamide; thenylchlor (NSK-850); thiafluamide; thiazafluron; thiazopyr (Mon-13200); thidiazimin (SN-24085); thifensulfuron(-methyl); thiobencarb; tiocarbazil; tralkoxydim; tri-allate; triasulfuron; triaziflam; triazofenamide; tribenuron(-methyl);

5 triclopyr; tridiphane; trietazine; trifluralin; triflusulfuron and esters (e.g. methyl ester, DPX-66037); trimeturon; tritosulfuron; tsitodef; vernolate; WL 110547, i.e. 5-phenoxy-1-[3-(trifluoromethyl)phenyl]-1H-tetrazole; UBH-509; D-489; LS 82-556; KPP-300; NC-324; NC-330; KH-218; DPX-N8189; SC-0774; DOWCO-535; DK-8910; V-53482; PP-600; MBH-001; KIH-9201; ET-751; KIH-6127 and KIH-2023.

10

Of particular interest is the selective control of harmful plants in crops of useful and ornamental plants. Although the compounds (I) according to the invention have very good to satisfactory selectivity in a large number of crops, it is possible in principle that phytotoxicity in the crop plants can occur in some crops and, in particular, when the

15 compounds (I) are mixed with other herbicides which are less selective. In this respect, combinations of the compounds (I) according to the invention which contain the compounds (I), or their combinations with other herbicides or pesticides, and safeners are of particular interest. The safeners, which are employed in such amounts that they act as antidotes, reduce the phytotoxic side effects of the herbicides/pesticides used,

20 for example in economically important crops such as cereals (wheat, barley, rye, corn, rice, millet), sugar beet, sugar cane, oilseed rape, cotton and soya, preferably cereal. Suitable safeners for the compounds (I) and their combinations with other pesticides are, for example, the following groups of compounds:

- 25 a) Compounds of the type of dichlorophenylpyrazoline-3-carboxylic acid, preferably compounds such as ethyl 1-(2,4-dichlorophenyl)-5-(ethoxycarbonyl)-5-methyl-2-pyrazoline-3-carboxylate (S1-1) ("mefenpyr-diethyl", PM, pp. 781-782), and related compounds, as described in WO 91/07874,
- 30 b) Derivatives of dichlorophenylpyrazole carboxylic acid, preferably compounds such as ethyl 1-(2,4-dichlorophenyl)-5-methylpyrazole-3-carboxylate (S1-2), ethyl 1-(2,4-dichlorophenyl)-5-isopropylpyrazole-3-carboxylate (S1-3), ethyl 1-(2,4-dichlorophenyl)-5-(1,1-dimethylethyl)pyrazole-3-carboxylate (S1-4), ethyl 1-(2,4-dichlorophenyl)-5-phenylpyrazole-3-carboxylate (S1-5) and related

compounds as described in EP-A-333 131 and EP-A-269 806.

- c) Compounds of the type of the triazolecarboxylic acids, preferably compounds such as fenchlorazole(ethyl ester), i.e. ethyl 1-(2,4-dichlorophenyl)-5-trichloromethyl-(1H)-1,2,4-triazole-3-carboxylate (S1-6) and related compounds as described in EP-A-174 562 and EP-A-346 620.
- d) Compounds of the type of the 5-benzyl- or 5-phenyl-2-isoxazoline-3-carboxylic acid, or the 5,5-diphenyl-2-isoxazoline-3-carboxylic acid, preferably compounds such as ethyl 5-(2,4-dichlorobenzyl)-2-isoxazoline-3-carboxylate (S1-7) or ethyl 5-phenyl-2-isoxazoline-3-carboxylate (S1-8) and related compounds, as described in WO 91/08202, or ethyl 5,5-diphenyl-2-isoxazolinecarboxylate (S1-9) ("isoxadifen-ethyl") or its n-propyl ester (S1-10) or ethyl 5-(4-fluorophenyl)-5-phenyl-2-isoxazoline-3-carboxylate (S1-11), as described in the German patent application (WO-A-95/07897).
- e) Compounds of the type of the 8-quinolineoxyacetic acid (S2), preferably 1-methylhex-1-yl (5-chloro-8-quinolineoxy) acetate (common name "cloquintocet-mexyl" (S2-1) (see PM, pp. 263-264) 1,3-dimethylbut-1-yl (5-chloro-8-quinolineoxy)acetate (S2-2), 4-allyloxybutyl (5-chloro-8-quinolineoxy)acetate (S2-3), 1-allyloxyprop-2-yl (5-chloro-8-quinolineoxy)acetate (S2-4), ethyl (5-chloro-8-quinolineoxy)acetate (S2-5), methyl (5-chloro-8-quinolineoxy)acetate (S2-6), allyl (5-chloro-8-quinolineoxy)acetate (S2-7), 2-(2-propylideneiminoxy)-1-ethyl (5-chloro-8-quinolineoxy)acetate (S2-8), 2-oxoprop-1-yl (5-chloro-8-quinolineoxy)acetate (S2-9) and related compounds, as described in EP-A-86 750, EP-A-94 349 and EP-A-191 736 or EP-A-0 492 366.
- f) Compounds of the type of the (5-chloro-8-quinolineoxy)malonic acid, preferably compounds such as diethyl (5-chloro-8-quinolineoxy)malonate, diallyl (5-chloro-8-quinolineoxy)malonate, methyl ethyl (5-chloro-8-quinolineoxy)malonate and related compounds, as described in EP-A-0 582 198.
- g) Active compounds of the type of the phenoxyacetic or -propionic acid derivatives or the aromatic carboxylic acids, such as, for example, 2,4-dichlorophenoxyacetic acid (esters) (2,4-D),

4-chloro-2-methylphenoxypropionic esters (mecoprop), MCPA or 3,6-dichloro-2-methoxybenzoic acid (esters) (dicamba).

- h) Active compounds of the type of the pyrimidines, which are used as soil-acting safeners in rice, such as, for example,

5 "fencloirim" (PM, pp. 512-511) (= 4,6-dichloro-2-phenylpyrimidine), which is known as safener for pretilachlor in sown rice,

- i) Active compounds of the type of the dichloroacetamides, which are frequently used as pre-emergent safeners (soil-acting safeners), such as, for example,

"dichlormid" (PM, pp. 363-364) (= N,N-diallyl-2,2-dichloroacetamide),

10 "R-29148" (= 3-dichloroacetyl-2,2,5-trimethyl-1,3-oxazolidine from Stauffer),

"benoxacor" (PM, pp. 102-103) (= 4-dichloroacetyl-3,4-dihydro-3-methyl-2H-1,4-benzoxazine),

"PPG-1292" (= N-allyl-N-[(1,3-dioxolan-2-yl)methyl]dichloroacetamide from PPG Industries),

15 "DK-24" (= N-allyl-N-[(allylaminocarbonyl)methyl]dichloroacetamide from Sagro-Chem),

"AD-67" or "MON 4660" (= 3-dichloroacetyl-1-oxa-3-aza-spiro[4,5]decane from Nitrokemia or Monsanto),

20 "diclonon" or "BAS145138" or "LAB145138" (= 3-dichloroacetyl-2,5,5-trimethyl-1,3-diazabicyclo[4.3.0]nonane from BASF) and

"furilazol" or "MON 13900" (see PM, 637-638) (= (RS)-3-dichloroacetyl-5-(2-furyl)-2,2-dimethyloxazolidine)

- j) Active compounds of the type of the dichloroacetone derivatives, such as, for example,

25 "MG 191" (CAS-Reg. No. 96420-72-3) (= 2-dichloromethyl-2-methyl-1,3-dioxolane from Nitrokemia), which is known as safener for corn,

- k) Active compounds of the type of the oxyimino compounds, which are known as seed dressings, such as, for example,

"oxabetrinil" (PM, pp. 902-903) (= (Z)-1,3-dioxolan-2-ylmethoxy-

30 imino(phenyl)acetonitrile), which is known as seed dressing safener for millet against metolachlor damage,

"fluxofenim" (PM, pp. 613-614) (= 1-(4-chlorophenyl)-2,2,2-trifluoro-1-ethanone O-(1,3-dioxolan-2-ylmethyl) oxime), which is known as seed dressing safener for millet against metolachlor damage,

"cyometrinil" or "-CGA-43089" (PM, p. 1304) (= (Z)-cyanomethoxyimino(phenyl)acetonitrile), which is known as seed dressing safener for millet against metolachlor damage,

- l) Active compounds of the type of the thiazolecarboxylic esters, which are known as seed dressings, such as, for example,

"flurazol" (PM, pp. 590-591) (= benzyl 2-chloro-4-trifluoromethyl-1,3-thiazole-5-carboxylate), which is known as seed dressing safener for millet against alachlor and metolachlor damage,

- m) Active compounds of the type of the naphthalenedicarboxylic acid derivatives, which are known as seed dressings, such as, for example,

"naphthalic anhydride" (PM, p. 1342) (= 1,8-naphthalenedicarboxylic anhydride), which is known as seed dressing safener for corn against thiocarbamate herbicide damage,

- n) Active compounds of the type of the chromanacetic acid derivatives, such as, for example,

"CL 304415" (CAS-Reg. No. 31541-57-8) (= 2-(4-carboxychroman-4-yl)acetic acid from American Cyanamid), which is known as safener for corn against imidazolinone damage,

- o) Active compounds which, in addition to a herbicidal action against harmful plants, also have safener action in crop plants such as rice, such as, for example,

"dimepiperate" or "MY-93" (PM, pp. 404-405) (= S-1-methyl-1-phenylethyl piperidine-1-thiocarboxylate), which is known as safener for rice against the herbicide molinate,

"daimuron" or "SK 23" (PM, p. 330) (= 1-(1-methyl-1-phenylethyl)-3-p-tolylurea), which is known as safener for rice against the herbicide imazosulfuron,

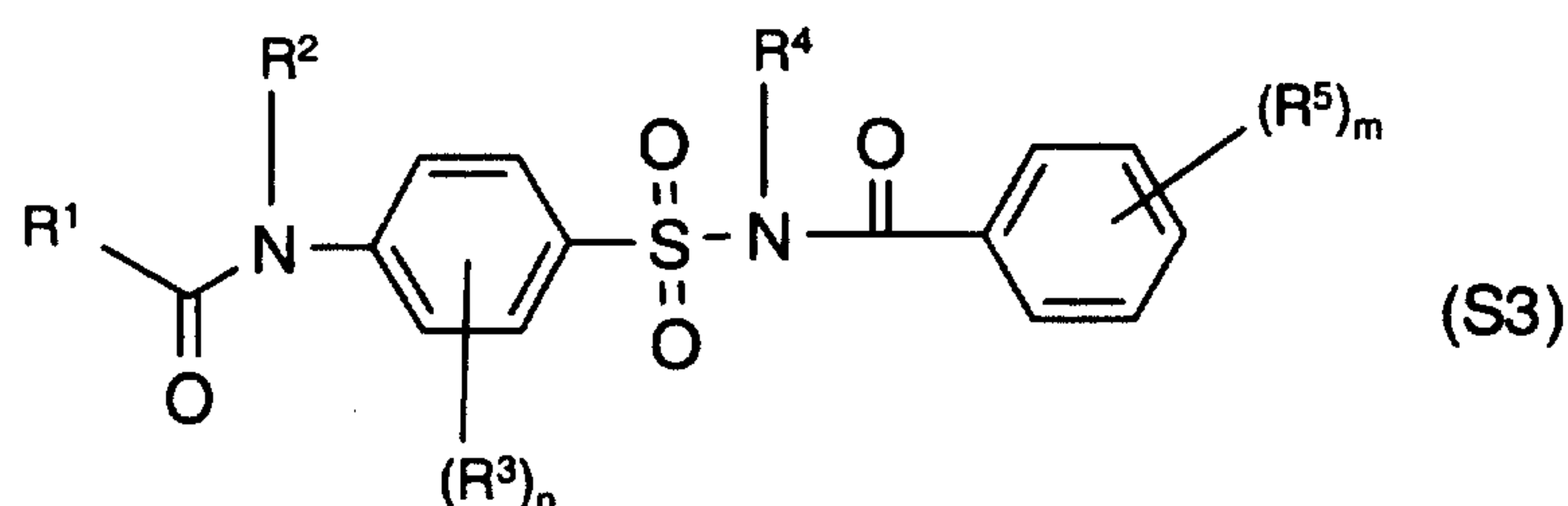
"cumyluron" = "JC-940" (= 3-(2-chlorophenylmethyl)-1-(1-methyl-1-phenylethyl)urea, see JP-A-60087254), which is known as safener for rice against damage by some herbicides,

"methoxyphenon" or "NK 049" (= 3,3'-dimethyl-4-methoxybenzophenone), which is known as safener for rice against damage by some herbicides,

"CSB" (= 1-bromo-4-(chloromethylsulfonyl)benzene) (CAS-Reg. No. 54091-06-4 from Kumiai), which is known as safener against damage by some herbicides in rice

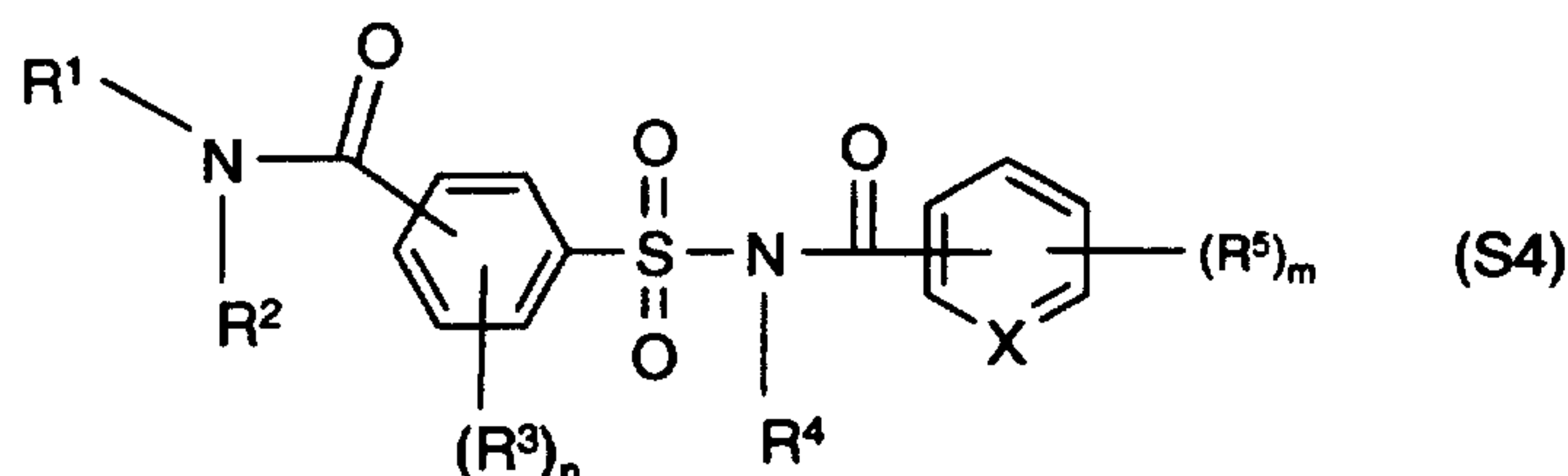
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p) N-Acylsulfonamides of the formula (S3) and salts thereof,



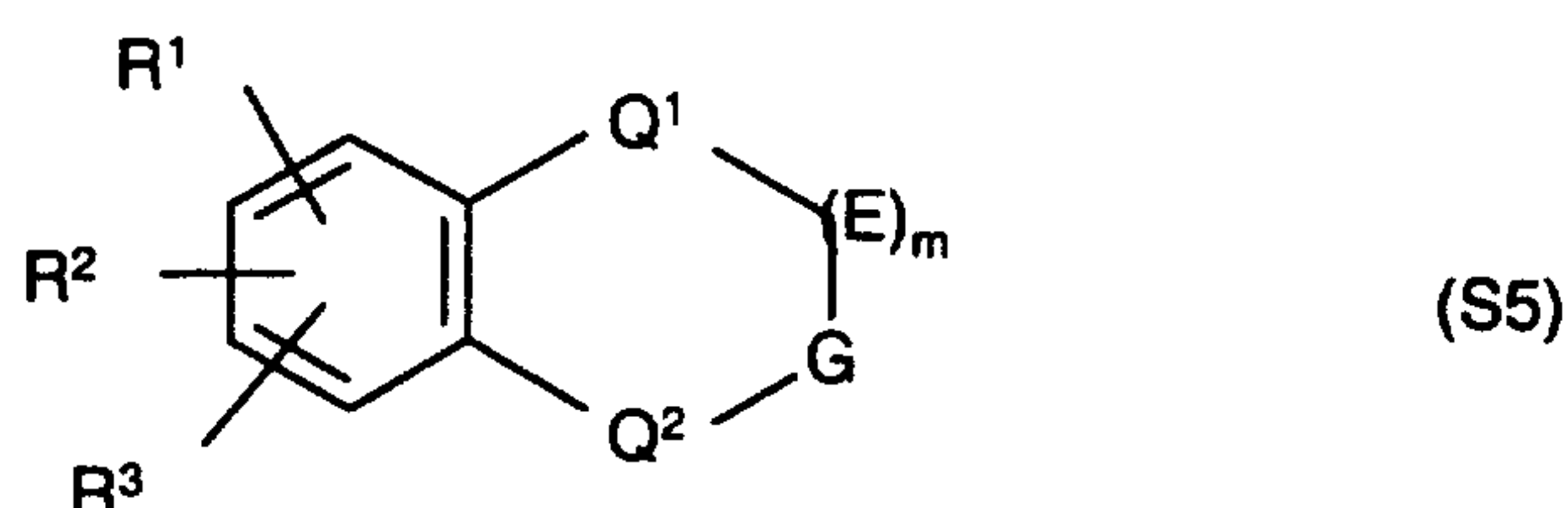
5 as described in WO-A-97/45016,

q) Acylsulfamoylbenzoamides of the formula (S4), if appropriate also in salt form,



as described in the International Application No. PCT/EP98/06097, and

10 r) Compounds of the formula (S5),



as described in WO-A 98/13 361,

15 including the stereoisomers and the salts used in agriculture.

Among the safeners mentioned, (S1-1) and (S1-9) and (S2-1), in particular (S1-1) and (S1-9), are of particular interest.

20 Some of the safeners are already known as herbicides and consequently show, in addition to the herbicidal action against harmful plants, also protective action in connection with crop plants.

The ratios by weight of herbicide (mixture) to safener generally depend on the

application rate of the herbicide and the efficacy of the safener in question and can vary within wide limits, for example in the range from 200:1 to 1:200, preferably 100:1 to 1:100, in particular 20:1 to 1:20. Analogously to the compounds (I) or their mixtures, the safeners can be formulated with other herbicides/pesticides and be provided and
5 used as ready-mix or tank mix with the herbicides.

For use, the herbicide or herbicide safener formulations which are present in commercially available form are, if appropriate, diluted in the customary manner, for example using water in the case of wettable powders, emulsifiable concentrates,
10 dispersions and water-dispersible granules. Preparations in the form of dusts, granules for soil application or broadcasting and sprayable solutions are usually not further diluted with other inert substances prior to use.

The application rate of the compounds of the formula (I) required varies with the
15 external conditions, such as temperature, humidity, the nature of the herbicide used and the like. It can vary within wide limits, for example between 0.001 and 10.0 kg/ha or more of active substance, but it is preferably between 0.005 and 5 kg/ha, in particular between 0.01 and 1 kg/ha of active substance.

20 In the examples below, the amounts (including percentages) are based on weight, unless specifically defined otherwise.

A. Chemical Examples

25 (A1) 2-Amino-4-[1-(4-fluoro-3-methoxyphenyl)ethyl]amino-6-isopropyl-1,3,5-triazine

0.35 g (2.1 mmol) of 1-(4-fluoro-3-methoxyphenyl)ethylamine, 0.34 g (2.0 mmol) of 2-amino-4-chloro-6-isopropyl-1,3,5-triazine and 0.29 g (2.1 mmol) of potassium carbonate were initially charged in 20 ml of acetonitrile, and the mixture was heated at
30 79°C for 8 h. Using a rotary evaporator, the solvent was removed from the reaction mixture, and the residue was taken up in water and extracted with ethyl acetate. The combined organic phases were dried and filtered, and the solvent was distilled off using a rotary evaporator. The residue was purified chromatographically, giving 0.45 g (1.47 mmol, 73.7% yield) of the desired product as a solid of melting point 110–113°C.

(A2) 2-[1-(4-Chloro-3-methylphenyl)ethyl]amino-4-methyl-6-trichloromethyl-1,3,5-triazine

5 0.45 g (2.7 mmol) of 1-(4-chloro-3-methylphenyl)ethylamine and 0.87 g (2.7 mmol) of 2-methyl-4,6-bis(trichloromethyl)-1,3,5-triazine were initially charged in 20 ml of acetonitrile, and the mixture was heated at 70–75°C for 5 h. Using a rotary evaporator, the solvent was removed from the reaction mixture, the residue was taken up in ethyl acetate and water and the aqueous phase was then extracted twice with ethyl acetate.
10 The combined organic phases were dried and filtered, and the solvent was distilled off using a rotary evaporator. The residue was purified chromatographically, giving 0.62 g (1.63 mmol, 60.4% yield) of the desired product as an oil.

(A3) Synthesis of 1-(3-bromo-4-fluorophenyl)ethylamine

15 9.5 g (43.8 mmol) of 3-bromo-4-fluoroacetophenone, 14.35 g (0.23 mol) of ammonium formate and 2.3 g (43.0 mmol) of 86% strength formic acid were heated at 160°C, with removal of water, for 5 h, and 0.75 g (14.0 mmol) of 86% strength formic acid were added after 3 h. The reaction mixture was taken up in water and diethyl ether, the
20 aqueous phase was extracted twice with diethyl ether and the solvent was removed from the combined organic phases using a rotary evaporator. The residue was mixed with 10 ml of concentrated hydrochloric acid and heated under reflux for 2 h. The content was taken up in water and the aqueous phase was extracted twice with ethyl acetate. With ice-cooling, the aqueous phase was made alkaline using 5 M aqueous
25 potassium hydroxide solution and again extracted twice with ethyl acetate. The two organic phases which were separated off last were combined and dried over magnesium sulfate, and the solvent was removed from the filtrate using a rotary evaporator. This gave 7.25 g (76% yield) of the desired product as an oil.

30 (A4) Synthesis of 2-amino-4-cyclobutyl-6-trichloromethyl-1,3,5-triazine

At 0°C, a solution of 7.90 g (67 mmol) of cyclobutane carbonyl chloride in 25 ml of diethyl ether was added dropwise to a solution of 11.3 g (56 mmol) of trichloromethylimidoylguanide in 25 ml of diethyl ether. After 30 minutes at 0°C, 8.28 g

(78 mmol) of triethylamine were added dropwise. The reaction mixture was then heated under reflux for 10 minutes. For work-up, the content was taken up in water, the aqueous phase was extracted with ethyl acetate, the combined organic phases were dried and the solvent was removed from the filtrate using a rotary evaporator.

5 Recrystallization gave 6 g (38.4% yield) of the desired product.

(A5) Synthesis of 2-amino-4-cyclobutyl-6-(3,5-dichlorobenzyl)amino-1,3,5-triazine

10 2.6 g (10 mmol) of 2-amino-4-cyclobutyl-6-trichloromethyl-1,3,5-triazine and 1.71 g (10 mmol) of 3,5-dichlorobenzylamine in 5 ml of N,N-dimethylformamide were heated at 130°C for 2 h. The reaction mixture was fractionated chromatographically, giving 3.1 g (88.6% yield) of the desired product.

15 The compounds described in Tables 1 to 10 below are obtained according to or analogously to Examples A1 to A5 above or the methods described further above in a general manner. The abbreviations used in the tables are:

Me = CH₃ = methyl

20 (also in composed radicals, such as methylthio (SMe or -SMe or MeS-), methylsulfonyl (SO₂Me), dimethylamino (NMe₂) etc.)

Ac = COCH₃ = acetyl

Bzl = CH₂C₆H₅ = benzyl

(n-)Bu = (n-)C₄H₉ = n-butyl

t-Bu = tertiary butyl

25 Et = C₂H₅ = ethyl

(n-)Pr, i-Pr, c-Pr = (n-), i-, c-C₃H₇ = n-propyl, isopropyl and cyclopropyl, respectively

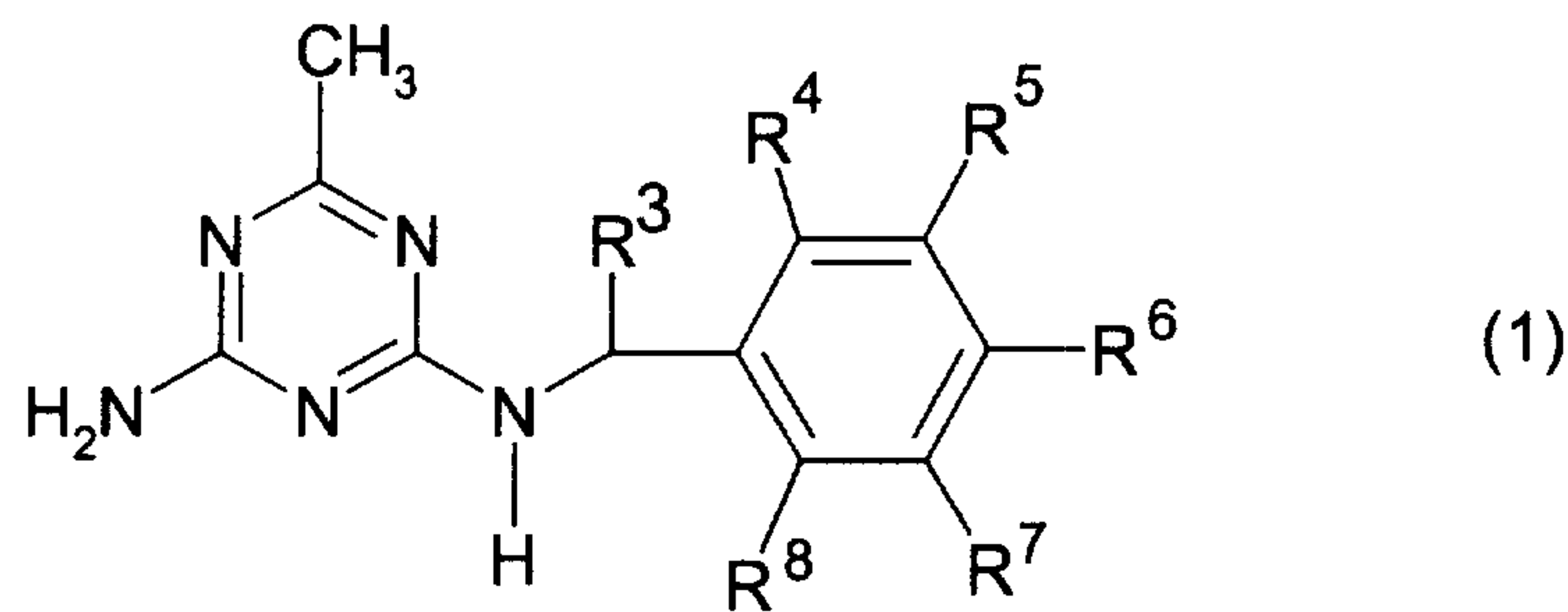
(n-)Pen = n-pentyl

Ph = phenyl

30 Phys. data = Physical data; if a number is given, this number means the melting point in °C; "resin" or "oil" refers to the consistency of the

non-crystalline compound obtained.

Table 1: Compounds of the formula (1)



No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1	CH ₃	CH ₃	H	F	H	H	
2	CH ₃	CF ₃	H	F	H	H	
3	CH ₃	OH	H	F	H	H	
4	CH ₃	OCH ₃	H	F	H	H	48
5	CH ₃	i-Pr	H	Bzl	H	H	
6	CH ₃	F	H	F	H	H	Oil
7	CH ₃	Cl	H	F	H	H	
8	CH ₃	Br	H	F	H	H	
9	CH ₃	I	H	t-Bu	H	H	
10	CH ₃	CH ₃	H	OBzl	H	H	
11	CH ₃	CF ₃	H	OPh	H	H	
12	CH ₃	OH	H	NO ₂	H	H	Resin
13	CH ₃	OCH ₃	H	NH ₂	H	H	Resin
14	CH ₃	CH ₂ OMe	H	C ₆ H ₅	H	H	
15	CH ₃	F	H	NHCOMe	H	H	Resin
16	CH ₃	Cl	H	NHCHO	H	H	Resin
17	CH ₃	Br	H	N(SO ₂ Me) ₂	H	H	Resin
18	CH ₃	I	H	NHSO ₂ Me	H	H	Resin

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
19	CH ₃	CH ₃	H	SCH ₃	H	H	
20	CH ₃	CF ₃	H	SOCH ₃	H	H	
21	CH ₃	OH	H	SO ₂ NH ₂	H	H	
22	CH ₃	OCH ₃	H	SO ₂ NHMe	H	H	
23	CH ₃	CH ₂ OCH ₃	H	F	H	H	
24	CH ₃	F	H	SO ₂ CH ₃	H	H	
25	CH ₃	Cl	H	CH ₂ OCH ₃	H	H	
26	CH ₃	Br	H	CH ₂ NMe ₂	H	H	
27	CH ₃	I	H	CH ₂ SCH ₃	H	H	
28	CH ₃	CH ₃	H	F	H	H	
29	CH ₃	CF ₃	H	Cl	H	H	
30	CH ₃	CH ₂ NMe ₂	H	F	H	H	
31	CH ₃	CH ₂ S-Me	H	F	H	H	
32	CH ₃	CH ₃	F	H	H	H	
33	CH ₃	CF ₃	F	H	H	H	
34	CH ₃	F	CF ₃	H	H	H	
35	CH ₃	CH ₃	H	H	CH ₃	H	
36	CH ₃	CF ₃	H	H	CH ₂ OCH ₃	H	
37	CH ₃	OH	H	H	CF ₃	H	
38	CH ₃	OCH ₃	H	H	OCH ₃	H	
39	CH ₃	CH ₂ OCH ₃	H	H	N(CH ₃) ₂	H	
40	CH ₃	F	H	H	F	H	
41	CH ₃	Cl	H	H	Cl	H	
42	CH ₃	Br	H	H	SO ₂ CH ₃	H	
43	CH ₃	I	H	H	SO ₂ CH ₃	H	
44	CH ₃	CH ₃	H	H	H	F	
45	CH ₃	CF ₃	H	H	H	F	
46	CH ₃	H	CH ₃	Cl	H	H	55

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
47	CH ₃	H	CF ₃	F	H	H	
48	CH ₃	H	CH ₃	F	H	H	Oil
49	CH ₃	H	OCH ₃	F	H	H	Oil
50	CH ₃	H	NO ₂	F	H	H	
51	CH ₃	H	NH ₂	F	H	H	Oil
52	CH ₃	H	N(CH ₃) ₂	F	H	H	
53	CH ₃	H	NHCOCH ₃	F	H	H	
54	CH ₃	H	NHCHO	F	H	H	
55	CH ₃	H	N(SO ₂ Me) ₂	F	H	H	
56	CH ₃	H	NHSO ₂ Me	F	H	H	
57	CH ₃	H	SMe	F	H	H	
58	CH ₃	H	SOMe	F	H	H	
59	CH ₃	H	SO ₂ NH ₂	F	H	H	
60	CH ₃	H	SO ₂ NHMe	F	H	H	
61	CH ₃	H	SO ₂ NMe ₂	F	H	H	
62	CH ₃	H	SO ₂ CH ₃	F	H	H	
63	CH ₃	H	NHCOMe	SO ₂ NH ₂	H	H	
64	CH ₃	H	CH ₂ OCH ₃	F	H	H	
65	CH ₃	H	CH ₂ NMe ₂	F	H	H	
66	CH ₃	H	CH ₂ SCH ₃	F	H	H	
67	CH ₃	H	F	F	H	H	Oil
68	CH ₃	H	Cl	F	H	H	Oil
69	CH ₃	H	Br	F	H	H	Resin
70	CH ₃	H	I	F	H	H	
71	CH ₃	H	F	c-Pr	H	H	Resin
72	CH ₃	H	F	Bzl	H	H	Resin
73	CH ₃	H	F	CH=CH ₂	H	H	Resin
74	CH ₃	H	F	C≡CH	H	H	Resin

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
75	CH ₃	H	F	H	F	H	Oil
76	CH ₃	F	H	Cl	F	H	Oil
77	CHFMe	H	OMe	Br	H	H	Resin
78	CHFMe	H	Me	Br	H	H	Resin
79	CHFMe	H	NO ₂	Br	H	H	Resin
80	CHFMe	H	NH ₂	Br	H	H	Resin
81	CHFMe	H	NO ₂	Cl	H	H	Resin
82	CHFMe	H	NH ₂	Cl	H	H	Resin
83	CHFMe	H	OMe	F	H	H	Resin
84	CHFMe	H	NO ₂	F	H	H	Resin
85	CHFMe	H	NH ₂	F	H	H	Resin
86	CHFMe	OMe	H	F	H	H	Resin
87	CHFMe	F	H	F	H	H	Resin
88	CHFMe	F	H	H	H	F	Resin
89	CHFMe	H	F	H	F	H	Resin
90	CHFMe	H	F	F	H	H	Resin
91	CHFMe	H	Me	F	H	H	Resin
92	CH ₃	H	F	Cl	H	H	Resin
93	CH ₃	H	CH ₃	H	NO ₂	H	Resin
94	CH ₃	H	CF ₃	H	NH ₂	H	Resin
95	CH ₃	H	OH	H	N(CH ₃) ₂	H	Resin
96	CH ₃	H	OCH ₃	H	NHCOCH ₃	H	Resin
97	CH ₃	H	CH ₃	H	NO ₂	H	Resin
98	CH ₃	H	CF ₃	H	NH ₂	H	Resin
99	CH ₃	H	OH	H	N(CH ₃) ₂	H	Resin
100	CH ₃	H	OCH ₃	H	NHCOCH ₃	H	Resin
101	CH ₃	H	NO ₂	H	NHCHO	H	Resin
102	CH ₃	H	NH ₂	H	N(SO ₂ Me) ₂	H	Resin

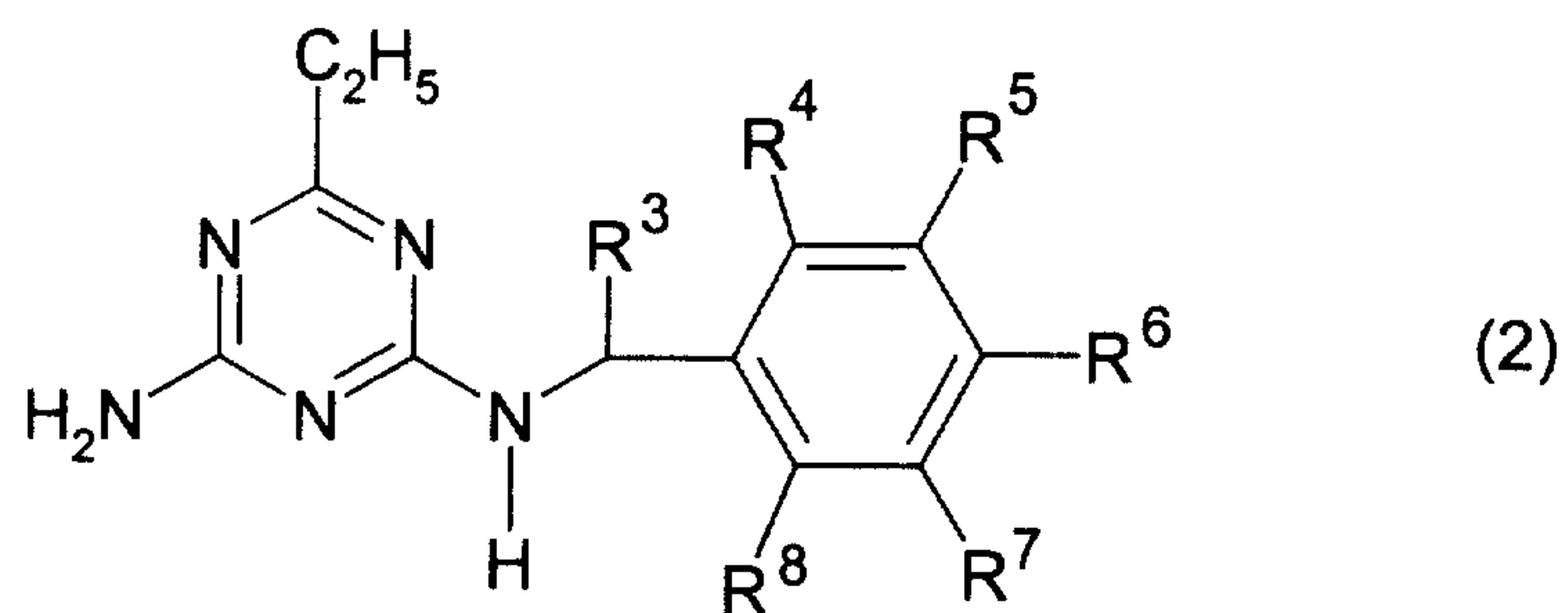
No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
103	CH ₃	H	N(CH ₃) ₂	H	NHSO ₂ Me	H	Resin
104	CH ₃	H	NHCOCH ₃	H	F	H	
105	CH ₃	H	NHCHO	H	Cl	H	
106	CH ₃	H	N(SO ₂ Me) ₂	H	Br	H	
107	CH ₃	H	NHSO ₂ Me	H	I	H	
108	CH ₃	H	SMe	H	CH ₃	H	
109	CH ₃	H	SOMe	H	CF ₃	H	
110	CH ₃	H	SO ₂ NH ₂	H	OH	H	
111	CH ₃	H	SO ₂ NHMe	H	OCH ₃	H	
112	CH ₃	H	SO ₂ NMe ₂	H	SCH ₃	H	
113	CH ₃	H	SO ₂ CH ₃	H	SOCH ₃	H	
114	CH ₃	H	CH ₂ OCH ₃	H	SO ₂ NH ₂	H	
115	CH ₃	H	F	H	SO ₂ NHMe	H	
116	CH ₃	H	Cl	H	SO ₂ NMe ₂	H	
117	CH ₃	H	Br	H	SO ₂ CH ₃	H	
118	CH ₃	H	I	H	C ₂ H ₅	H	
119	CH ₃	CH ₃	CH ₃	Cl	H	H	
120	CH ₃	CH ₃	F	H	Cl	H	
121	CH ₃	OCH ₃	Cl	H	F	H	
122	CH ₃	OCH ₃	CH ₃	H	H	F	
123	CH ₃	Cl	H	F	H	Cl	
124	CH ₃	H	F	F	F	H	53
125	CH ₃	Cl	H	F	OCH ₃	H	
126	CH ₃	F	H	Cl	OCH ₃	H	
127	CH ₃	F	H	F	F	H	Oil
128	CH ₃	F	CH ₃	H	CH ₃	F	
129	CH ₃	F	F	Cl	CH ₃	H	
130	CH ₃	CH ₃	F	Cl	H	F	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
131	CH ₃	CH ₃	F	F	F	CH ₃	Resin
132	CH ₃	CH ₃	H	CH ₃	H	H	
133	CH ₃	H	F	CH ₃	H	H	
134	CH ₃	CH ₃	H	Cl	H	H	
135	CH ₃	H	-CMe ₂ -(CH ₂) ₂ -CMe ₂ -		H	H	64
136	CH ₃	H	-(CH ₂) ₄ -		H	H	Resin
137	CH ₃	H	-(CH ₂) ₃ -		H	H	Resin
138	H	H	Cl	Cl	H	H	186
139	CH ₃	H	OCH ₃	OCH ₃	H	H	Resin
140	CH ₃	H	Cl	H	CH=CHEt	H	
141	CH ₃	H	Cl	H	C≡CEt	H	
142	CH ₃	H	Cl	H	Ph	H	
143	CH ₃	H	Cl	H	CN	H	
144	CH ₃	H	Cl	-(CH ₂) ₄ -		H	
145	CH ₃	H	Cl	-O(CH ₂) ₂ O-		H	Resin
146	CH ₃	H	Cl	-OCH ₂ O-		H	Resin
147	C ₂ H ₅	CH ₃	H	CH ₃	H	H	
148	C ₂ H ₅	F	H	CH ₃	H	H	
149	C ₂ H ₅	CH ₃	H	Cl	H	H	
150	C ₂ H ₅	H	NMe ₂	Cl	H	H	
151	C ₂ H ₅	H	SO ₂ CH ₃	CH ₃	H	H	
152	CH ₃	H	CH ₃	Br	H	H	
153	CH ₃	H	CH ₃	I	H	H	
154	C ₂ H ₅	H	CH ₃	F	H	H	Resin
155	C ₂ H ₅	H	CH ₃	Cl	H	H	
156	C ₂ H ₅	H	CH ₃	Br	H	H	
157	C ₂ H ₅	H	CH ₃	I	H	H	
158	C ₂ H ₅	H	F	F	H	H	Resin

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
159	C ₂ H ₅	H	F	H	F	H	Resin
160	c-Pr	H	OMe	Br	H	H	Resin
161	c-Pr	H	Me	Br	H	H	Resin
162	c-Pr	H	NO ₂	Br	H	H	Resin
163	c-Pr	H	NH ₂	Br	H	H	Resin
164	c-Pr	H	NO ₂	Cl	H	H	Resin
165	c-Pr	H	NH ₂	Cl	H	H	Resin
166	c-Pr	H	OMe	F	H	H	Resin
167	c-Pr	H	NO ₂	F	H	H	Resin
168	c-Pr	H	NH ₂	F	H	H	Resin
169	c-Pr	OMe	H	F	H	H	Resin
170	c-Pr	F	H	F	H	H	Resin
171	c-Pr	F	H	H	H	F	Resin
172	c-Pr	H	Me	F	H	H	Resin
173	c-Pr	H	F	F	H	H	Resin
174	c-Pr	H	F	H	F	H	Resin
175	Me	H	CH ₃	CH ₂ OCH ₃	H	H	
176	Me	H	F	CH ₂ OCH ₃	H	H	
177	Me	H	Cl	CH ₂ OCH ₃	H	H	
178	Me	H	Br	CH ₂ OCH ₃	H	H	
179	Me	H	CH ₃	CH ₂ SCH ₃	H	H	
180	Me	H	F	CH ₂ SCH ₃	H	H	
181	Me	H	Cl	CH ₂ SCH ₃	H	H	
182	Me	H	Br	CH ₂ SCH ₃	H	H	
183	Me	H	CH ₃	CH ₂ NMe ₂	H	H	
184	Me	H	F	CH ₂ NMe ₂	H	H	
185	Me	H	Cl	CH ₂ NMe ₂	H	H	
186	Me	H	Br	CH ₂ NMe ₂	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
187	Me	H	Cl	CH ₃	H	H	
188	Me	H	Br	CH ₃	H	H	
189	C ₂ H ₅	H	CH ₃	CH ₂ OCH ₃	H	H	
190	C ₂ H ₅	H	F	CH ₂ OCH ₃	H	H	
191	C ₂ H ₅	H	Cl	CH ₂ OCH ₃	H	H	
192	C ₂ H ₅	H	Br	CH ₂ OCH ₃	H	H	
193	C ₂ H ₅	H	CH ₃	CH ₂ SCH ₃	H	H	
194	C ₂ H ₅	H	F	CH ₂ SCH ₃	H	H	
195	C ₂ H ₅	H	Cl	CH ₂ SCH ₃	H	H	
196	C ₂ H ₅	H	Br	CH ₂ SCH ₃	H	H	
197	C ₂ H ₅	H	CH ₃	CH ₂ NMe ₂	H	H	
198	C ₂ H ₅	H	F	CH ₂ NMe ₂	H	H	
199	C ₂ H ₅	H	Cl	CH ₂ NMe ₂	H	H	
200	C ₂ H ₅	H	Br	CH ₂ NMe ₂	H	H	
201	C ₂ H ₅	H	Cl	CH ₃	H	H	
202	C ₂ H ₅	H	Br	CH ₃	H	H	
203	C ₂ H ₅	H	F	CH ₃	H	H	

Table 2: Compounds of the formula (2)



No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
204	CH ₃	CH ₃	H	F	H	H	
205	CH ₃	CF ₃	H	F	H	H	
206	CH ₃	OH	H	F	H	H	
207	CH ₃	OCH ₃	H	F	H	H	
208	CH ₃	i-Pr	H	CH ₂ C ₆ H ₅	H	H	
209	CH ₃	F	H	F	H	H	Oil
210	CH ₃	Cl	H	F	H	H	
211	CH ₃	Br	H	F	H	H	
212	CH ₃	I	H	C(CH ₃) ₃	H	H	
213	CH ₃	CH ₃	H	OCH ₂ C ₆ H ₅	H	H	
214	CH ₃	CF ₃	H	OC ₆ H ₅	H	H	
215	CH ₃	OH	H	NO ₂	H	H	Resin
216	CH ₃	OCH ₃	H	NH ₂	H	H	Resin
217	CH ₃	CH ₂ OCH ₃	H	C ₆ H ₅	H	H	
218	CH ₃	F	H	NHCOCH ₃	H	H	Resin
219	CH ₃	Cl	H	NHCHO	H	H	Resin
220	CH ₃	Br	H	N(SO ₂ CH ₃) ₂	H	H	Resin
221	CH ₃	I	H	NHSO ₂ CH ₃	H	H	Resin
222	CH ₃	CH ₃	H	SCH ₃	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
223	CH ₃	CF ₃	H	SOCH ₃	H	H	
224	CH ₃	OH	H	SO ₂ NH ₂	H	H	
225	CH ₃	OCH ₃	H	SO ₂ NHCH ₃	H	H	
226	CH ₃	CH ₂ OMe	H	F	H	H	
227	CH ₃	F	H	SO ₂ CH ₃	H	H	
228	CH ₃	Cl	H	CH ₂ OCH ₃	H	H	
229	CH ₃	Br	H	CH ₂ N(CH ₃) ₂	H	H	
230	CH ₃	I	H	CH ₂ SCH ₃	H	H	
231	CH ₃	CH ₃	H	F	H	H	
232	CH ₃	CF ₃	H	Cl	H	H	
233	CH ₃	CH ₂ NMe ₂	H	F	H	H	
234	CH ₃	CH ₂ SMe	H	F	H	H	
235	CH ₃	CH ₃	F	H	H	H	
236	CH ₃	CF ₃	F	H	H	H	
237	CH ₃	F	CF ₃	H	H	H	
238	CH ₃	CH ₃	H	H	CH ₃	H	
239	CH ₃	CF ₃	H	H	CH ₂ OCH ₃	H	
240	CH ₃	OH	H	H	CF ₃	H	
241	CH ₃	OCH ₃	H	H	OCH ₃	H	
242	CH ₃	CH ₂ OMe	H	H	N(CH ₃) ₂	H	Resin
243	CH ₃	F	H	H	F	H	
244	CH ₃	Cl	H	H	Cl	H	
245	CH ₃	Br	H	H	SO ₂ CH ₃	H	
246	CH ₃	I	H	H	SO ₂ CH ₃	H	
247	CH ₃	CH ₃	H	H	H	F	
248	CH ₃	CF ₃	H	H	H	F	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
249	CH ₃	H	CH ₃	Cl	H	H	50
250	CH ₃	H	CF ₃	F	H	H	
251	CH ₃	H	CH ₃	F	H	H	Oil
252	CH ₃	H	OCH ₃	F	H	H	45
253	CH ₃	H	NO ₂	F	H	H	
254	CH ₃	H	NH ₂	F	H	H	Oil
255	CH ₃	H	N(CH ₃) ₂	F	H	H	
256	CH ₃	H	NHCOCH ₃	F	H	H	
257	CH ₃	H	NHCHO	F	H	H	
258	CH ₃	H	N(SO ₂ Me) ₂	F	H	H	
259	CH ₃	H	NHSO ₂ Me	F	H	H	
260	CH ₃	H	SMe	F	H	H	
261	CH ₃	H	SOMe	F	H	H	
262	CH ₃	H	SO ₂ NH ₂	F	H	H	
263	CH ₃	H	SO ₂ NHMe	F	H	H	
264	CH ₃	H	SO ₂ NMe ₂	F	H	H	
265	CH ₃	H	SO ₂ CH ₃	F	H	H	
266	CH ₃	H	NHCOCH ₃	SO ₂ NH ₂	H	H	
267	CH ₃	H	CH ₂ OCH ₃	F	H	H	
268	CH ₃	H	CH ₂ NMe ₂	F	H	H	
269	CH ₃	H	CH ₂ SCH ₃	F	H	H	
270	CH ₃	H	F	F	H	H	Oil
271	CH ₃	H	Cl	F	H	H	
272	CH ₃	H	Br	F	H	H	47
273	CH ₃	H	I	F	H	H	
274	CH ₃	H	F	c-Pr	H	H	Resin

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
275	CH ₃	H	F	Bzl	H	H	Resin
276	CH ₃	H	F	CH=CH ₂	H	H	Resin
277	CH ₃	H	F	C≡CH	H	H	Resin
278	CH ₃	H	F	H	F	H	Oil
279	CH ₃	F	H	Cl	F	H	85
280	CHFMe	H	OMe	Br	H	H	Resin
281	CHFMe	H	Me	Br	H	H	Resin
282	CHFMe	H	NO ₂	Br	H	H	Resin
283	CHFMe	H	NH ₂	Br	H	H	Resin
284	CHFMe	H	NO ₂	Cl	H	H	Resin
285	CHFMe	H	NH ₂	Cl	H	H	Resin
286	CHFMe	H	OMe	F	H	H	Resin
287	CHFMe	H	NO ₂	F	H	H	Resin
288	CHFMe	H	NH ₂	F	H	H	Resin
289	CHFMe	OMe	H	F	H	H	Resin
290	CHFMe	F	H	F	H	H	Resin
291	CHFMe	F	H	H	H	F	Resin
292	CHFMe	H	F	H	F	H	Resin
293	CHFMe	H	F	F	H	H	Resin
294	CHFMe	H	Me	F	H	H	Resin
295	CH ₃	H	F	Cl	H	H	Resin
296	CH ₃	H	CH ₃	H	NO ₂	H	Resin
297	CH ₃	H	CF ₃	H	NH ₂	H	Resin
298	CH ₃	H	OH	H	N(CH ₃) ₂	H	Resin
299	CH ₃	H	OCH ₃	H	NHCOCH ₃	H	Resin
300	CH ₃	H	NO ₂	H	NHCHO	H	Resin

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
301	CH ₃	H	NH ₂	H	N(SO ₂ Me) ₂	H	Resin
302	CH ₃	H	N(CH ₃) ₂	H	NHSO ₂ CH ₃	H	Resin
303	CH ₃	H	NHCOCH ₃	H	F	H	
304	CH ₃	H	NHCHO	H	Cl	H	
305	CH ₃	H	N(SO ₂ Me) ₂	H	Br	H	
306	CH ₃	H	NHSO ₂ Me	H	I	H	
307	CH ₃	H	SMe	H	CH ₃	H	
308	CH ₃	H	SOMe	H	CF ₃	H	
309	CH ₃	H	SO ₂ NH ₂	H	OH	H	
310	CH ₃	H	SO ₂ NHMe	H	OCH ₃	H	
311	CH ₃	H	SO ₂ NMe ₂	H	SCH ₃	H	
312	CH ₃	H	SO ₂ CH ₃	H	SOCH ₃	H	
313	CH ₃	H	CH ₂ OCH ₃	H	SO ₂ NH ₂	H	
314	CH ₃	H	F	H	SO ₂ NHCH ₃	H	
315	CH ₃	H	Cl	H	SO ₂ NMe ₂	H	
316	CH ₃	H	Br	H	SO ₂ CH ₃	H	
317	CH ₃	H	I	H	C ₂ H ₅	H	
318	CH ₃	CH ₃	CH ₃	Cl	H	H	
319	CH ₃	CH ₃	F	H	Cl	H	
320	CH ₃	OCH ₃	Cl	H	F	H	
321	CH ₃	OCH ₃	CH ₃	H	H	F	
322	CH ₃	Cl	H	F	H	Cl	
323	CH ₃	H	F	F	F	H	
324	CH ₃	Cl	H	F	OCH ₃	H	
325	CH ₃	F	H	Cl	OCH ₃	H	
326	CH ₃	F	H	F	F	H	

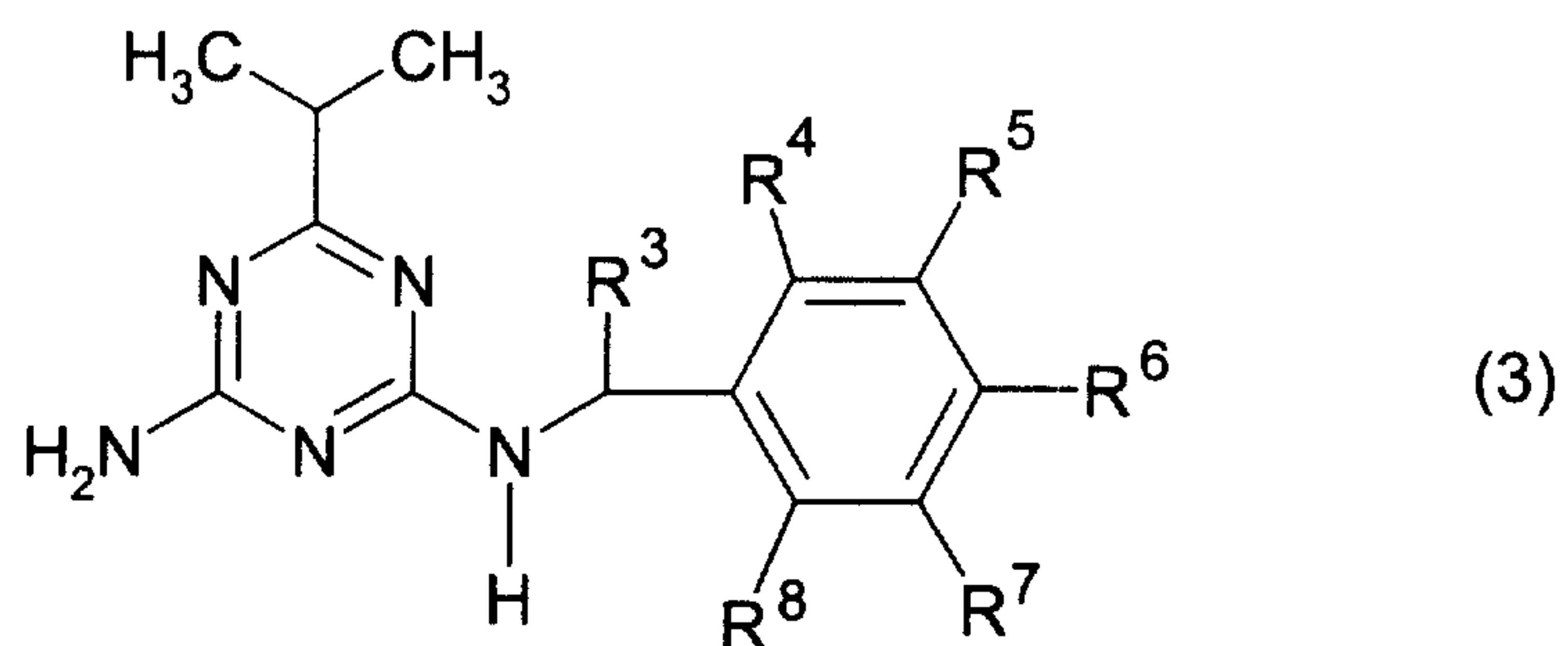
No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
327	CH ₃	F	CH ₃	H	CH ₃	F	
328	CH ₃	F	F	Cl	CH ₃	H	
329	CH ₃	CH ₃	F	Cl	H	F	
330	CH ₃	CH ₃	F	F	F	CH ₃	
331	CH ₃	CH ₃	H	CH ₃	H	H	
332	CH ₃	H	F	CH ₃	H	H	
333	CH ₃	CH ₃	H	Cl	H	H	
334	CH ₃	CH ₃	-(CH ₂) ₃ -		CH ₃	H	Resin
335	CH ₃	H	-C(CH ₃) ₂ -(CH ₂) ₂ -C(CH ₃) ₂ -		H	H	64
336	CH ₃	H	-(CH ₂) ₄ -		H	H	60
337	CH ₃	H	OCH ₃	OCH ₃	H	H	129
338	CH ₃	H	Cl	H	CH=CHEt	H	
339	CH ₃	H	Cl	H	C≡CEt	H	
340	CH ₃	H	Cl	H	Ph	H	
341	CH ₃	H	Cl	H	CN	H	
342	CH ₃	H	Cl	-(CH ₂) ₄ -		H	
343	CH ₃	H	Cl	-O(CH ₂) ₂ O-		H	
344	CH ₃	H	Cl	-OCH ₂ O-		H	Resin
345	C ₂ H ₅	CH ₃	H	CH ₃	H	H	
346	C ₂ H ₅	F	H	CH ₃	H	H	
347	C ₂ H ₅	CH ₃	H	Cl	H	H	
348	C ₂ H ₅	H	N(CH ₃) ₂	Cl	H	H	
349	C ₂ H ₅	H	SO ₂ CH ₃	CH ₃	H	H	
350	Me	H	Me	Br	H	H	
351	Me	H	Me	I	H	H	
352	Et	H	Me	F	H	H	Resin

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
353	Et	H	Me	Cl	H	H	
354	Et	H	Me	Br	H	H	
355	Et	H	Me	I	H	H	
356	C ₂ H ₅	H	F	F	H	H	Resin
357	C ₂ H ₅	H	F	H	F	H	Resin
358	c-Pr	H	OMe	Br	H	H	Resin
359	c-Pr	H	Me	Br	H	H	Resin
360	c-Pr	H	NO ₂	Br	H	H	Resin
361	c-Pr	H	NH ₂	Br	H	H	Resin
362	c-Pr	H	NO ₂	Cl	H	H	Resin
363	c-Pr	H	NH ₂	Cl	H	H	Resin
364	c-Pr	H	OMe	F	H	H	Resin
365	c-Pr	H	NO ₂	F	H	H	Resin
366	c-Pr	H	NH ₂	F	H	H	Resin
367	c-Pr	OMe	H	F	H	H	Resin
368	c-Pr	F	H	F	H	H	Resin
369	c-Pr	F	H	H	H	F	Resin
370	c-Pr	H	Me	F	H	H	Resin
371	c-Pr	H	F	F	H	H	Resin
372	c-Pr	H	F	H	F	H	Resin
373	Me	H	Me	CH ₂ OMe	H	H	
374	Me	H	F	CH ₂ OMe	H	H	
375	Me	H	Cl	CH ₂ OMe	H	H	
376	Me	H	Br	CH ₂ OMe	H	H	
377	Me	H	CH ₃	CH ₂ SMe	H	H	
378	Me	H	F	CH ₂ SMe	H	H	

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No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
379	Me	H	Cl	CH ₂ SMe	H	H	
380	Me	H	Br	CH ₂ SMe	H	H	
381	Me	H	CH ₃	CH ₂ NMe ₂	H	H	
382	Me	H	F	CH ₂ NMe ₂	H	H	
383	Me	H	Cl	CH ₂ NMe ₂	H	H	
384	Me	H	Br	CH ₂ NMe ₂	H	H	
385	Me	H	Cl	CH ₃	H	H	
386	Me	H	Br	CH ₃	H	H	
387	C ₂ H ₅	H	CH ₃	CH ₂ OCH ₃	H	H	
388	C ₂ H ₅	H	F	CH ₂ OCH ₃	H	H	
389	C ₂ H ₅	H	Cl	CH ₂ OCH ₃	H	H	
390	C ₂ H ₅	H	Br	CH ₂ OCH ₃	H	H	
391	C ₂ H ₅	H	CH ₃	CH ₂ SCH ₃	H	H	
392	C ₂ H ₅	H	F	CH ₂ SCH ₃	H	H	
393	C ₂ H ₅	H	Cl	CH ₂ SCH ₃	H	H	
394	C ₂ H ₅	H	Br	CH ₂ SCH ₃	H	H	
395	C ₂ H ₅	H	CH ₃	CH ₂ NMe ₂	H	H	
396	C ₂ H ₅	H	F	CH ₂ NMe ₂	H	H	
397	C ₂ H ₅	H	Cl	CH ₂ NMe ₂	H	H	
398	C ₂ H ₅	H	Br	CH ₂ NMe ₂	H	H	
399	C ₂ H ₅	H	Cl	CH ₃	H	H	
400	C ₂ H ₅	H	Br	CH ₃	H	H	
401	C ₂ H ₅	H	F	CH ₃	H	H	

Table 3: Compounds of the formula (3)



No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
402	CH ₃	CH ₃	H	F	H	H	
403	CH ₃	CF ₃	H	F	H	H	Oil
404	CH ₃	OH	H	F	H	H	
405	CH ₃	OCH ₃	H	F	H	H	
406	CH ₃	i-Pr ₂	H	CH ₂ C ₆ H ₅	H	H	
407	CH ₃	F	H	F	H	H	Oil
408	CH ₃	Cl	H	F	H	H	
409	CH ₃	Br	H	F	H	H	
410	CH ₃	I	H	C(CH ₃) ₃	H	H	
411	CH ₃	CH ₃	H	OCH ₂ C ₆ H ₅	H	H	
412	CH ₃	CF ₃	H	OC ₆ H ₅	H	H	
413	CH ₃	OH	H	NO ₂	H	H	Resin
414	CH ₃	OCH ₃	H	NH ₂	H	H	Resin
415	CH ₃	CH ₂ OMe	H	C ₆ H ₅	H	H	
416	CH ₃	F	H	NHCOCH ₃	H	H	Resin
417	CH ₃	Cl	H	NHCHO	H	H	Resin
418	CH ₃	Br	H	N(SO ₂ Me) ₂	H	H	Resin
419	CH ₃	I	H	NHSO ₂ CH ₃	H	H	Resin

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
420	CH ₃	CH ₃	H	SCH ₃	H	H	
421	CH ₃	CF ₃	H	SOCH ₃	H	H	
422	CH ₃	OH	H	SO ₂ NH ₂	H	H	
423	CH ₃	OCH ₃	H	SO ₂ NHCH ₃	H	H	
424	CH ₃	CH ₂ OMe	H	F	H	H	
425	CH ₃	F	H	SO ₂ CH ₃	H	H	
426	CH ₃	Cl	H	CH ₂ OCH ₃	H	H	
427	CH ₃	Br	H	CH ₂ NMe ₂	H	H	
428	CH ₃	I	H	CH ₂ SCH ₃	H	H	
429	CH ₃	CH ₃	H	F	H	H	
430	CH ₃	CF ₃	H	Cl	H	H	
431	CH ₃	CH ₂ NMe ₂	H	F	H	H	
432	CH ₃	CH ₂ SMe	H	F	H	H	
433	CH ₃	CH ₃	F	H	H	H	
434	CH ₃	CF ₃	F	H	H	H	
435	CH ₃	F	CF ₃	H	H	H	
436	CH ₃	CH ₃	H	H	CH ₃	H	
437	CH ₃	CF ₃	H	H	CH ₂ OCH ₃	H	
438	CH ₃	OH	H	H	CF ₃	H	
439	CH ₃	OCH ₃	H	H	OCH ₃	H	
440	CH ₃	CH ₂ OMe	H	H	N(CH ₃) ₂	H	Resin
441	CH ₃	F	H	H	F	H	
442	CH ₃	Cl	H	H	Cl	H	
443	CH ₃	Br	H	H	SO ₂ CH ₃	H	
444	CH ₃	I	H	H	SO ₂ CH ₃	H	
445	CH ₃	CH ₃	H	H	H	F	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
446	CH ₃	CF ₃	H	H	H	F	
447	CH ₃	H	CH ₃	Cl	H	H	Oil
448	CH ₃	H	CF ₃	F	H	H	
449	CH ₃	H	CH ₃	F	H	H	Oil
450	CH ₃	H	OCH ₃	F	H	H	112
451	CH ₃	H	NO ₂	F	H	H	
452	CH ₃	H	NH ₂	F	H	H	Oil
453	CH ₃	H	N(CH ₃) ₂	F	H	H	
454	CH ₃	H	NHCOCH ₃	F	H	H	
455	CH ₃	H	NHCHO	F	H	H	
456	CH ₃	H	N(SO ₂ Me) ₂	F	H	H	
457	CH ₃	H	NHSO ₂ CH ₃	F	H	H	
458	CH ₃	H	SMe	F	H	H	
459	CH ₃	H	SOMe	F	H	H	
460	CH ₃	H	SO ₂ NH ₂	F	H	H	
461	CH ₃	H	SO ₂ NHCH ₃	F	H	H	
462	CH ₃	H	SO ₂ NMe ₂	F	H	H	
463	CH ₃	H	SO ₂ CH ₃	F	H	H	
464	CH ₃	H	NHCOCH ₃	SO ₂ NH ₂	H	H	
465	CH ₃	H	CH ₂ OCH ₃	F	H	H	
466	CH ₃	H	CH ₂ NMe ₂	F	H	H	
467	CH ₃	H	CH ₂ SCH ₃	F	H	H	
468	CH ₃	H	F	F	H	H	Oil
469	CH ₃	H	Cl	F	H	H	
470	CH ₃	H	Br	F	H	H	Oil
471	CH ₃	H	I	F	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
472	CH ₃	H	F	c-Pr	H	H	Resin
473	CH ₃	H	F	Bzl	H	H	Resin
474	CH ₃	H	F	CH=CH ₂	H	H	Resin
475	CH ₃	H	F	C≡CH	H	H	Resin
476	CH ₃	H	F	H	F	H	Oil
477	CH ₃	F	H	Cl	F	H	Oil
478	CHFMe	H	OMe	Br	H	H	Resin
479	CHFMe	H	Me	Br	H	H	Resin
480	CHFMe	H	NO ₂	Br	H	H	Resin
481	CHFMe	H	NH ₂	Br	H	H	Resin
482	CHFMe	H	NO ₂	Cl	H	H	Resin
483	CHFMe	H	NH ₂	Cl	H	H	Resin
484	CHFMe	H	OMe	F	H	H	Resin
485	CHFMe	H	NO ₂	F	H	H	Resin
486	CHFMe	H	NH ₂	F	H	H	Resin
487	CHFMe	OMe	H	F	H	H	Resin
488	CHFMe	F	H	F	H	H	Resin
489	CHFMe	F	H	H	H	F	Resin
490	CHFMe	H	F	H	F	H	Resin
491	CHFMe	H	F	F	H	H	Resin
492	CHFMe	H	Me	F	H	H	Resin
493	CH ₃	H	F	Cl	H	H	Resin
494	CH ₃	H	CH ₃	H	NO ₂	H	Resin
495	CH ₃	H	CF ₃	H	NH ₂	H	Resin
496	CH ₃	H	OH	H	N(CH ₃) ₂	H	Resin
497	CH ₃	H	OCH ₃	H	NHCOCH ₃	H	Resin

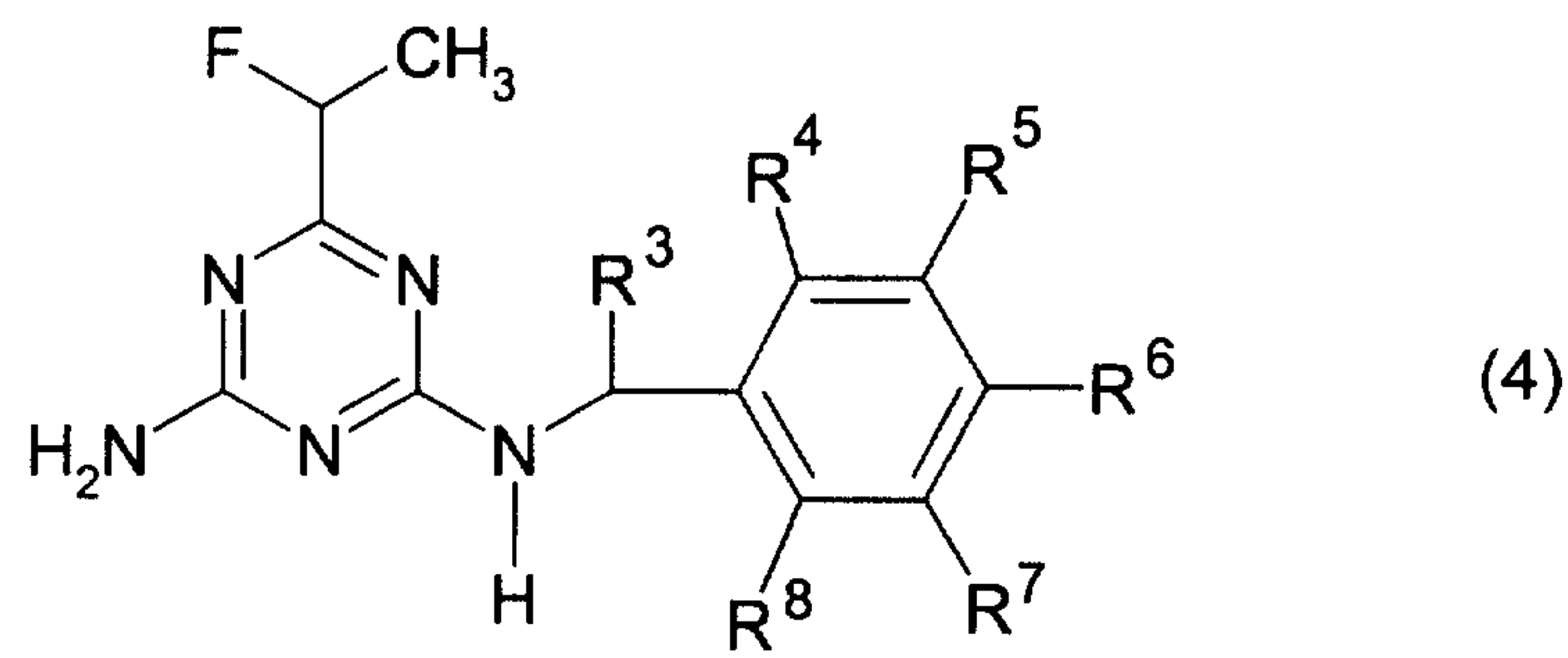
No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
498	CH ₃	H	NO ₂	H	NHCHO	H	Resin
499	CH ₃	H	NH ₂	H	N(SO ₂ Me) ₂	H	Resin
500	CH ₃	H	N(CH ₃) ₂	H	NHSO ₂ Me	H	Resin
501	CH ₃	H	NHCOCH ₃	H	F	H	
502	CH ₃	H	NHCHO	H	Cl	H	
503	CH ₃	H	N(SO ₂ Me) ₂	H	Br	H	
504	CH ₃	H	NHSO ₂ CH ₃	H	I	H	
505	CH ₃	H	SCH ₃	H	CH ₃	H	
506	CH ₃	H	SOCH ₃	H	CF ₃	H	
507	CH ₃	H	SO ₂ NH ₂	H	OH	H	
508	CH ₃	H	SO ₂ NHCH ₃	H	OCH ₃	H	
509	CH ₃	H	SO ₂ NMe ₂	H	SCH ₃	H	
510	CH ₃	H	SO ₂ CH ₃	H	SOCH ₃	H	
511	CH ₃	H	CH ₂ OCH ₃	H	SO ₂ NH ₂	H	
512	CH ₃	H	F	H	SO ₂ NHMe	H	
513	CH ₃	H	Cl	H	SO ₂ NMe ₂	H	
514	CH ₃	H	Br	H	SO ₂ CH ₃	H	
515	CH ₃	H	I	H	C ₂ H ₅	H	
516	CH ₃	CH ₃	CH ₃	Cl	H	H	
517	CH ₃	CH ₃	F	H	Cl	H	
518	CH ₃	OCH ₃	Cl	H	F	H	
519	CH ₃	OCH ₃	CH ₃	H	H	F	
520	CH ₃	Cl	H	F	H	Cl	
521	CH ₃	H	F	F	F	H	
522	CH ₃	Cl	H	F	OCH ₃	H	
523	CH ₃	F	H	Cl	OCH ₃	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
524	CH ₃	F	H	F	F	H	Oil
525	CH ₃	F	CH ₃	H	CH ₃	F	
526	CH ₃	F	F	Cl	CH ₃	H	
527	CH ₃	CH ₃	F	Cl	H	F	
528	CH ₃	CH ₃	F	F	F	CH ₃	
529	CH ₃	CH ₃	H	CH ₃	H	H	
530	CH ₃	H	F	CH ₃	H	H	
531	CH ₃	CH ₃	H	Cl	H	H	
532	CH ₃	H	-(CH ₂) ₄ -		H	H	Resin
533	CH ₃	H	Cl	H	CH=CH ₂ Et	H	
534	CH ₃	H	Cl	H	C≡CEt	H	
535	CH ₃	H	Cl	H	C ₆ H ₅	H	
536	CH ₃	H	Cl	H	CN	H	
537	CH ₃	H	Cl	-(CH ₂) ₄ -		H	
538	CH ₃	H	Cl	-O(CH ₂) ₂ O-		H	
539	CH ₃	H	Cl	-OCH ₂ O-		H	
540	C ₂ H ₅	CH ₃	H	CH ₃	H	H	
541	C ₂ H ₅	F	H	CH ₃	H	H	
542	C ₂ H ₅	CH ₃	H	Cl	H	H	Resin
543	C ₂ H ₅	H	N(CH ₃) ₂	Cl	H	H	Resin
544	C ₂ H ₅	H	SO ₂ CH ₃	CH ₃	H	H	Resin
545	Me	H	Me	Br	H	H	
546	Me	H	Me	I	H	H	
547	Et	H	Me	F	H	H	Resin
548	Et	H	Me	Cl	H	H	
549	Et	H	Me	Br	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
550	Et	H	Me	I	H	H	
551	C ₂ H ₅	H	F	F	H	H	Resin
552	C ₂ H ₅	H	F	H	F	H	Resin
553	c-Pr	H	OMe	Br	H	H	Resin
554	c-Pr	H	Me	Br	H	H	Resin
555	c-Pr	H	NO ₂	Br	H	H	Resin
556	c-Pr	H	NH ₂	Br	H	H	Resin
557	c-Pr	H	NO ₂	Cl	H	H	Resin
558	c-Pr	H	NH ₂	Cl	H	H	Resin
559	c-Pr	H	OMe	F	H	H	Resin
560	c-Pr	H	NO ₂	F	H	H	Resin
561	c-Pr	H	NH ₂	F	H	H	Resin
562	c-Pr	OMe	H	F	H	H	Resin
563	c-Pr	F	H	F	H	H	Resin
564	c-Pr	F	H	H	H	F	Resin
565	c-Pr	H	Me	F	H	H	Resin
566	c-Pr	H	F	F	H	H	Resin
567	c-Pr	H	F	H	F	H	Resin
568	Me	H	Me	CH ₂ OCH ₃	H	H	
569	Me	H	F	CH ₂ OCH ₃	H	H	
570	Me	H	Cl	CH ₂ OCH ₃	H	H	
571	Me	H	Br	CH ₂ OCH ₃	H	H	
572	Me	H	CH ₃	CH ₂ SCH ₃	H	H	
573	Me	H	F	CH ₂ SCH ₃	H	H	
574	Me	H	Cl	CH ₂ SCH ₃	H	H	
575	Me	H	Br	CH ₂ SCH ₃	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
576	Me	H	CH ₃	CH ₂ NMe ₂	H	H	
577	Me	H	F	CH ₂ NMe ₂	H	H	
578	Me	H	Cl	CH ₂ NMe ₂	H	H	
579	Me	H	Br	CH ₂ NMe ₂	H	H	
580	Me	H	Cl	CH ₃	H	H	
581	Me	H	Br	CH ₃	H	H	
582	C ₂ H ₅	H	CH ₃	CH ₂ OCH ₃	H	H	
583	C ₂ H ₅	H	F	CH ₂ OCH ₃	H	H	
584	C ₂ H ₅	H	Cl	CH ₂ OCH ₃	H	H	
585	C ₂ H ₅	H	Br	CH ₂ OCH ₃	H	H	
586	C ₂ H ₅	H	CH ₃	CH ₂ SCH ₃	H	H	
587	C ₂ H ₅	H	F	CH ₂ SCH ₃	H	H	
588	C ₂ H ₅	H	Cl	CH ₂ SCH ₃	H	H	
589	C ₂ H ₅	H	Br	CH ₂ SCH ₃	H	H	
590	C ₂ H ₅	H	CH ₃	CH ₂ NMe ₂	H	H	
591	C ₂ H ₅	H	F	CH ₂ NMe ₂	H	H	
592	C ₂ H ₅	H	Cl	CH ₂ NMe ₂	H	H	
593	C ₂ H ₅	H	Br	CH ₂ NMe ₂	H	H	
594	C ₂ H ₅	H	Cl	CH ₃	H	H	
595	C ₂ H ₅	H	Br	CH ₃	H	H	
596	C ₂ H ₅	H	F	CH ₃	H	H	

Table 4: Compounds of the formula (4)



No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
597	CH ₃	CH ₃	H	F	H	H	
598	CH ₃	CF ₃	H	F	H	H	117
599	CH ₃	OH	H	F	H	H	
600	CH ₃	OCH ₃	H	F	H	H	Oil
601	CH ₃	i-Pr	H	CH ₂ C ₆ H ₅	H	H	
602	CH ₃	F	H	F	H	H	Oil
603	H	Cl	H	F	H	H	161
604	H	H	Cl	F	H	H	125
605	H	H	F	F	H	H	127
606	H	H	Cl	Cl	H	H	115
607	CH ₃	CH ₃	H	OCH ₂ C ₆ H ₅	H	H	
608	CH ₃	CF ₃	H	OC ₆ H ₅	H	H	
609	CH ₃	OH	H	NO ₂	H	H	Resin
610	CH ₃	OCH ₃	H	NH ₂	H	H	Resin
611	CH ₃	CH ₂ OMe	H	C ₆ H ₅	H	H	
612	CH ₃	F	H	NHCOCH ₃	H	H	Resin
613	CH ₃	Cl	H	NHCHO	H	H	Resin
614	CH ₃	Br	H	N(SO ₂ CH ₃) ₂	H	H	Resin

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
615	CH ₃	I	H	NHSO ₂ CH ₃	H	H	Resin
616	CH ₃	CH ₃	H	SCH ₃	H	H	
617	CH ₃	CF ₃	H	SOCH ₃	H	H	
618	CH ₃	OH	H	SO ₂ NH ₂	H	H	
619	CH ₃	OCH ₃	H	SO ₂ NHCH ₃	H	H	
620	CH ₃	CH ₂ OMe	H	F	H	H	
621	CH ₃	F	H	SO ₂ CH ₃	H	H	
622	CH ₃	Cl	H	CH ₂ OCH ₃	H	H	
623	CH ₃	Br	H	CH ₂ N(CH ₃) ₂	H	H	
624	CH ₃	I	H	CH ₂ SCH ₃	H	H	
625	CH ₃	CH ₃	H	F	H	H	
626	CH ₃	CF ₃	H	Cl	H	H	
627	CH ₃	CH ₂ NMe ₂	H	F	H	H	
628	CH ₃	CH ₂ SMe	H	F	H	H	
629	CH ₃	CH ₃	F	H	H	H	
630	CH ₃	CF ₃	F	H	H	H	
631	CH ₃	F	CF ₃	H	H	H	
632	CH ₃	CH ₃	H	H	CH ₃	H	
633	CH ₃	CF ₃	H	H	CH ₂ OCH ₃	H	
634	CH ₃	OH	H	H	CF ₃	H	
635	CH ₃	OCH ₃	H	H	OCH ₃	H	
636	CH ₃	CH ₂ OMe	H	H	N(CH ₃) ₂	H	Resin
637	CH ₃	F	H	H	F	H	
638	CH ₃	Cl	H	H	Cl	H	
639	CH ₃	Br	H	H	SO ₂ CH ₃	H	
640	CH ₃	I	H	H	SO ₂ CH ₃	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
641	CH ₃	CH ₃	H	H	H	F	
642	CH ₃	CF ₃	H	H	H	F	
643	CH ₃	H	CH ₃	Cl	H	H	Oil
644	CH ₃	H	CF ₃	F	H	H	
645	CH ₃	H	CH ₃	F	H	H	112
646	CH ₃	H	OCH ₃	F	H	H	60
647	CH ₃	H	NO ₂	F	H	H	
648	CH ₃	H	NH ₂	F	H	H	Oil
649	CH ₃	H	N(CH ₃) ₂	F	H	H	
650	CH ₃	H	NHCOCH ₃	F	H	H	
651	CH ₃	H	NHCHO	F	H	H	
652	CH ₃	H	N(SO ₂ CH ₃) ₂	F	H	H	
653	CH ₃	H	NHSO ₂ CH ₃	F	H	H	
654	CH ₃	H	SCH ₃	F	H	H	
655	CH ₃	H	SOCH ₃	F	H	H	
656	CH ₃	H	SO ₂ NH ₂	F	H	H	
657	CH ₃	H	SO ₂ NHCH ₃	F	H	H	
658	CH ₃	H	SO ₂ N(CH ₃) ₂	F	H	H	
659	CH ₃	H	SO ₂ CH ₃	F	H	H	
660	CH ₃	H	NHCOCH ₃	SO ₂ NH ₂	H	H	
661	CH ₃	H	CH ₂ OCH ₃	F	H	H	
662	CH ₃	H	CH ₂ N(CH ₃) ₂	F	H	H	
663	CH ₃	H	CH ₂ SCH ₃	F	H	H	
664	CH ₃	H	F	F	H	H	111
665	CH ₃	H	Cl	F	H	H	Oil
666	CH ₃	H	Br	F	H	H	61

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
667	CH ₃	H	I	F	H	H	
668	CH ₃	H	F	c-Pr	H	H	Resin
669	CH ₃	H	F	Bzl	H	H	Resin
670	CH ₃	H	F	CH=CH ₂	H	H	Resin
671	CH ₃	H	F	C≡CH	H	H	Resin
672	CH ₃	H	F	H	F	H	Oil
673	CH ₃	F	H	Cl	F	H	Oil
674	CHFMe	H	OMe	Br	H	H	Resin
675	CHFMe	H	Me	Br	H	H	Resin
676	CHFMe	H	NO ₂	Br	H	H	Resin
677	CHFMe	H	NH ₂	Br	H	H	Resin
678	CHFMe	H	NO ₂	Cl	H	H	Resin
679	CHFMe	H	NH ₂	Cl	H	H	Resin
680	CHFMe	H	OMe	F	H	H	Resin
681	CHFMe	H	NO ₂	F	H	H	Resin
682	CHFMe	H	NH ₂	F	H	H	Resin
683	CHFMe	OMe	H	F	H	H	Resin
684	CHFMe	F	H	F	H	H	Resin
685	CHFMe	F	H	H	H	F	Resin
686	CHFMe	H	F	H	F	H	Resin
687	CHFMe	H	F	F	H	H	Resin
688	CHFMe	H	Me	F	H	H	Resin
689	CH ₃	H	F	Cl	H	H	Resin
690	CH ₃	H	CH ₃	H	NO ₂	H	Resin
691	CH ₃	H	CF ₃	H	NH ₂	H	Resin
692	CH ₃	H	OH	H	N(CH ₃) ₂	H	Resin

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
693	CH ₃	H	OCH ₃	H	NHCOCH ₃	H	Resin
694	CH ₃	H	NO ₂	H	NHCHO	H	Resin
695	CH ₃	H	NH ₂	H	N(SO ₂ CH ₃) ₂	H	Resin
696	CH ₃	H	N(CH ₃) ₂	H	NHSO ₂ CH ₃	H	Resin
697	CH ₃	H	NHCOCH ₃	H	F	H	
698	CH ₃	H	NHCHO	H	Cl	H	
699	CH ₃	H	N(SO ₂ CH ₃) ₂	H	Br	H	
700	CH ₃	H	NHSO ₂ CH ₃	H	I	H	
701	CH ₃	H	SCH ₃	H	CH ₃	H	
702	CH ₃	H	SOCH ₃	H	CF ₃	H	
703	CH ₃	H	SO ₂ NH ₂	H	OH	H	
704	CH ₃	H	SO ₂ NHCH ₃	H	OCH ₃	H	
705	CH ₃	H	SO ₂ N(CH ₃) ₂	H	SCH ₃	H	
706	CH ₃	H	SO ₂ CH ₃	H	SOCH ₃	H	
707	CH ₃	H	CH ₂ OCH ₃	H	SO ₂ NH ₂	H	
708	CH ₃	H	F	H	SO ₂ NHCH ₃	H	
709	CH ₃	H	Cl	H	SO ₂ N(CH ₃) ₂	H	
710	CH ₃	H	Br	H	SO ₂ CH ₃	H	
711	CH ₃	H	I	H	C ₂ H ₅	H	
712	CH ₃	CH ₃	CH ₃	Cl	H	H	
713	CH ₃	CH ₃	F	H	Cl	H	
714	CH ₃	OCH ₃	Cl	H	F	H	Oil
715	CH ₃	OCH ₃	CH ₃	H	H	F	
716	CH ₃	Cl	H	F	H	Cl	
717	CH ₃	H	F	F	F	H	51
718	CH ₃	Cl	H	F	OCH ₃	H	Oil

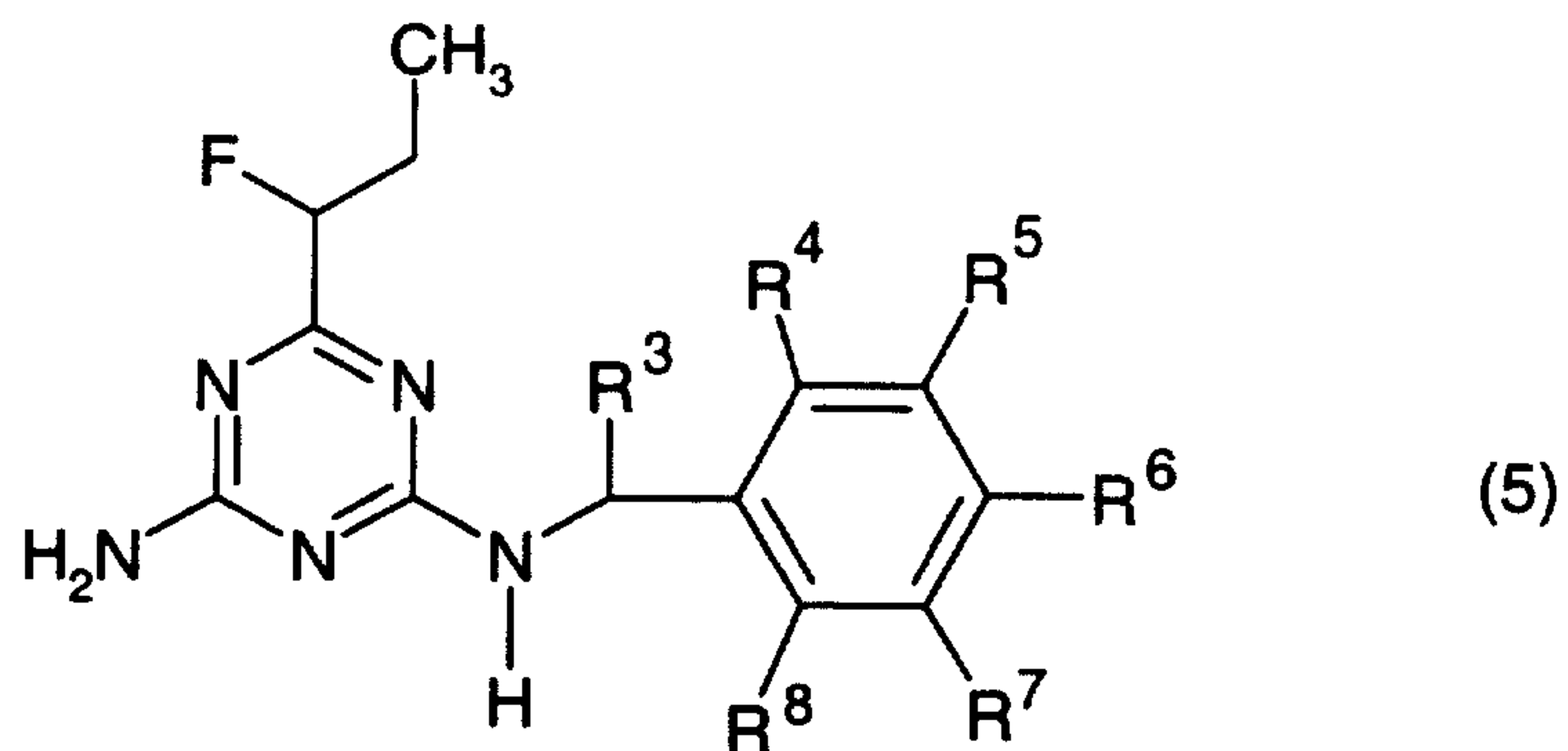
No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
719	CH ₃	F	H	Cl	OCH ₃	H	
720	CH ₃	F	H	F	F	H	
721	CH ₃	F	CH ₃	H	CH ₃	F	
722	CH ₃	F	F	Cl	CH ₃	H	
723	CH ₃	CH ₃	F	Cl	H	F	
724	CH ₃	CH ₃	F	F	F	CH ₃	
725	CH ₃	CH ₃	H	CH ₃	H	H	
726	CH ₃	H	F	CH ₃	H	H	
727	CH ₃	CH ₃	H	Cl	H	H	
728	CH ₃	H	Cl	H	CH=CH ₂	H	
729	CH ₃	H	Cl	H	C≡C ₂ H ₅	H	
730	CH ₃	H	Cl	H	C ₆ H ₅	H	
731	CH ₃	H	Cl	H	CN	H	
732	CH ₃	H	Cl	-(CH ₂) ₄ -		H	
733	CH ₃	H	Cl	-O(CH ₂) ₂ O-		H	
734	CH ₃	H	Cl	-OCH ₂ O-		H	
735	Et	CH ₃	H	CH ₃	H	H	
736	Et	F	H	CH ₃	H	H	
737	Et	CH ₃	H	Cl	H	H	
738	Et	H	N(CH ₃) ₂	Cl	H	H	Resin
739	Et	H	SO ₂ CH ₃	CH ₃	H	H	
740	Me	H	Me	Br	H	H	
741	Me	H	Me	I	H	H	
742	Et	H	Me	F	H	H	Resin
743	Et	H	Me	Cl	H	H	
744	Et	H	Me	Br	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
745	Et	H	Me	I	H	H	
746	C ₂ H ₅	H	F	F	H	H	Resin
747	C ₂ H ₅	H	F	H	F	H	Resin
748	c-Pr	H	OMe	Br	H	H	Resin
749	c-Pr	H	Me	Br	H	H	Resin
750	c-Pr	H	NO ₂	Br	H	H	Resin
751	c-Pr	H	NH ₂	Br	H	H	Resin
752	c-Pr	H	NO ₂	Cl	H	H	Resin
753	c-Pr	H	NH ₂	Cl	H	H	Resin
754	c-Pr	H	OMe	F	H	H	Resin
755	c-Pr	H	NO ₂	F	H	H	Resin
756	c-Pr	H	NH ₂	F	H	H	Resin
757	c-Pr	OMe	H	F	H	H	Resin
758	c-Pr	F	H	F	H	H	Resin
759	c-Pr	F	H	H	H	F	Resin
760	c-Pr	H	Me	F	H	H	Resin
761	c-Pr	H	F	F	H	H	Resin
762	c-Pr	H	F	H	F	H	Resin
763	Me	H	Me	CH ₂ OCH ₃	H	H	
764	Me	H	F	CH ₂ OCH ₃	H	H	
765	Me	H	Cl	CH ₂ OCH ₃	H	H	
766	Me	H	Br	CH ₂ OCH ₃	H	H	
767	Me	H	CH ₃	CH ₂ SCH ₃	H	H	
768	Me	H	F	CH ₂ SCH ₃	H	H	
769	Me	H	Cl	CH ₂ SCH ₃	H	H	
770	Me	H	Br	CH ₂ SCH ₃	H	H	

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No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
771	Me	H	CH ₃	CH ₂ N(CH ₃) ₂	H	H	
772	Me	H	F	CH ₂ N(CH ₃) ₂	H	H	
773	Me	H	Cl	CH ₂ N(CH ₃) ₂	H	H	
774	Me	H	Br	CH ₂ N(CH ₃) ₂	H	H	
775	Me	H	Cl	CH ₃	H	H	
776	Me	H	Br	CH ₃	H	H	
777	Et	H	CH ₃	CH ₂ OCH ₃	H	H	
778	Et	H	F	CH ₂ OCH ₃	H	H	
779	Et	H	Cl	CH ₂ OCH ₃	H	H	
780	Et	H	Br	CH ₂ OCH ₃	H	H	
781	Et	H	CH ₃	CH ₂ SCH ₃	H	H	
782	Et	H	F	CH ₂ SCH ₃	H	H	
783	Et	H	Cl	CH ₂ SCH ₃	H	H	
784	Et	H	Br	CH ₂ SCH ₃	H	H	
785	Et	H	CH ₃	CH ₂ N(CH ₃) ₂	H	H	
786	Et	H	F	CH ₂ N(CH ₃) ₂	H	H	
787	Et	H	Cl	CH ₂ N(CH ₃) ₂	H	H	
788	Et	H	Br	CH ₂ N(CH ₃) ₂	H	H	
789	Et	H	Cl	CH ₃	H	H	
790	Et	H	Br	CH ₃	H	H	
791	Et	H	F	CH ₃	H	H	

Table 5: Compounds of the formula (5)



No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
792	CH ₃	CH ₃	H	F	H	H	
793	CH ₃	CF ₃	H	F	H	H	68
794	CH ₃	OH	H	F	H	H	
795	CH ₃	OCH ₃	H	F	H	H	Oil
796	CH ₃	i-Pr	H	CH ₂ C ₆ H ₅	H	H	
797	CH ₃	F	H	F	H	H	
798	CH ₃	Cl	H	F	H	H	
799	CH ₃	Br	H	F	H	H	
800	CH ₃	I	H	C(CH ₃) ₃	H	H	
801	CH ₃	CH ₃	H	OCH ₂ C ₆ H ₅	H	H	
802	CH ₃	CF ₃	H	OC ₆ H ₅	H	H	
803	CH ₃	OH	H	NO ₂	H	H	
804	CH ₃	OCH ₃	H	NH ₂	H	H	
805	CH ₃	CH ₂ OMe	H	C ₆ H ₅	H	H	
806	CH ₃	F	H	NHCOCH ₃	H	H	
807	CH ₃	Cl	H	NHCHO	H	H	
808	CH ₃	Br	H	N(SO ₂ Me) ₂	H	H	
809	CH ₃	I	H	NHSO ₂ CH ₃	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
810	CH ₃	CH ₃	H	SCH ₃	H	H	
811	CH ₃	CF ₃	H	SOCH ₃	H	H	
812	CH ₃	OH	H	SO ₂ NH ₂	H	H	
813	CH ₃	OCH ₃	H	SO ₂ NHCH ₃	H	H	
814	CH ₃	CH ₂ OMe	H	F	H	H	
815	CH ₃	F	H	SO ₂ CH ₃	H	H	
816	CH ₃	Cl	H	CH ₂ OCH ₃	H	H	
817	CH ₃	Br	H	CH ₂ NMe ₂	H	H	
818	CH ₃	I	H	CH ₂ SCH ₃	H	H	
819	CH ₃	CH ₃	H	F	H	H	
820	CH ₃	CF ₃	H	Cl	H	H	
821	CH ₃	CH ₂ NMe ₂	H	F	H	H	
822	CH ₃	CH ₂ SMe	H	F	H	H	
823	CH ₃	CH ₃	F	H	H	H	
824	CH ₃	CF ₃	F	H	H	H	
825	CH ₃	F	CF ₃	H	H	H	
826	CH ₃	CH ₃	H	H	CH ₃	H	
827	CH ₃	CF ₃	H	H	CH ₂ OCH ₃	H	
828	CH ₃	OH	H	H	CF ₃	H	
829	CH ₃	OCH ₃	H	H	OCH ₃	H	
830	CH ₃	CH ₂ OMe	H	H	N(CH ₃) ₂	H	Resin
831	CH ₃	F	H	H	F	H	
832	CH ₃	Cl	H	H	Cl	H	
833	CH ₃	Br	H	H	SO ₂ CH ₃	H	
834	CH ₃	I	H	H	SO ₂ CH ₃	H	
835	CH ₃	CH ₃	H	H	H	F	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
836	CH ₃	CF ₃	H	H	H	F	
837	CH ₃	H	CH ₃	Cl	H	H	
838	CH ₃	H	CF ₃	F	H	H	
839	CH ₃	H	CH ₃	F	H	H	44
840	CH ₃	H	OCH ₃	F	H	H	Oil
841	CH ₃	H	NO ₂	F	H	H	
842	CH ₃	H	NH ₂	F	H	H	Oil
843	CH ₃	H	N(CH ₃) ₂	F	H	H	
844	CH ₃	H	NHCOCH ₃	F	H	H	
845	CH ₃	H	NHCHO	F	H	H	
846	CH ₃	H	N(SO ₂ Me) ₂	F	H	H	
847	CH ₃	H	NHSO ₂ CH ₃	F	H	H	
848	CH ₃	H	SCH ₃	F	H	H	
849	CH ₃	H	SOCH ₃	F	H	H	
850	CH ₃	H	SO ₂ NH ₂	F	H	H	
851	CH ₃	H	SO ₂ NHCH ₃	F	H	H	
852	CH ₃	H	SO ₂ NMe ₂	F	H	H	
853	CH ₃	H	SO ₂ CH ₃	F	H	H	
854	CH ₃	H	NHCOCH ₃	SO ₂ NH ₂	H	H	
855	CH ₃	H	CH ₂ OCH ₃	F	H	H	
856	CH ₃	H	CH ₂ NMe ₂	F	H	H	
857	CH ₃	H	CH ₂ SCH ₃	F	H	H	
858	CH ₃	H	F	F	H	H	
859	CH ₃	H	Cl	F	H	H	Oil
860	CH ₃	H	Br	F	H	H	62
861	CH ₃	H	I	F	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
862	CH ₃	H	F	c-Pr	H	H	Resin
863	CH ₃	H	F	Bzl	H	H	Resin
864	CH ₃	H	F	CH=CH ₂	H	H	Resin
865	CH ₃	H	F	C≡CH	H	H	Resin
866	CH ₃	H	F	H	F	H	Oil
867	CH ₃	F	H	Cl	F	H	Oil
868	CFHMe	H	OMe	Br	H	H	Resin
869	CFHMe	H	Me	Br	H	H	Resin
870	CFHMe	H	NO ₂	Br	H	H	Resin
871	CFHMe	H	NH ₂	Br	H	H	Resin
872	CFHMe	H	NO ₂	Cl	H	H	Resin
873	CFHMe	H	NH ₂	Cl	H	H	Resin
874	CFHMe	H	OMe	F	H	H	Resin
875	CFHMe	H	NO ₂	F	H	H	Resin
876	CFHMe	H	NH ₂	F	H	H	Resin
877	CFHMe	OMe	H	F	H	H	Resin
878	CFHMe	F	H	F	H	H	Resin
879	CFHMe	F	H	H	H	F	Resin
880	CFHMe	H	F	H	F	H	Resin
881	CFHMe	H	F	F	H	H	Resin
882	CFHMe	H	Me	F	H	H	Resin
883	CH ₃	H	F	Cl	H	H	Resin
884	CH ₃	H	CH ₃	H	NO ₂	H	Resin
885	CH ₃	H	CF ₃	H	NH ₂	H	Resin
886	CH ₃	H	OH	H	N(CH ₃) ₂	H	Resin
887	CH ₃	H	OCH ₃	H	NHCOCH ₃	H	Resin

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
888	CH ₃	H	NO ₂	H	NHCHO	H	Resin
889	CH ₃	H	NH ₂	H	N(SO ₂ CH ₃) ₂	H	Resin
890	CH ₃	H	N(CH ₃) ₂	H	NHSO ₂ CH ₃	H	Resin
891	CH ₃	H	NHCOCH ₃	H	F	H	
892	CH ₃	H	NHCHO	H	Cl	H	
893	CH ₃	H	N(SO ₂ Me) ₂	H	Br	H	
894	CH ₃	H	NHSO ₂ CH ₃	H	I	H	
895	CH ₃	H	SCH ₃	H	CH ₃	H	
896	CH ₃	H	SOCH ₃	H	CF ₃	H	
897	CH ₃	H	SO ₂ NH ₂	H	OH	H	
898	CH ₃	H	SO ₂ NHCH ₃	H	OCH ₃	H	
899	CH ₃	H	SO ₂ NMe ₂	H	SCH ₃	H	
900	CH ₃	H	SO ₂ CH ₃	H	SOCH ₃	H	
901	CH ₃	H	CH ₂ OCH ₃	H	SO ₂ NH ₂	H	
902	CH ₃	H	F	H	SO ₂ NHCH ₃	H	
903	CH ₃	H	Cl	H	SO ₂ N(CH ₃) ₂	H	
904	CH ₃	H	Br	H	SO ₂ CH ₃	H	
905	CH ₃	H	I	H	C ₂ H ₅	H	
906	CH ₃	CH ₃	CH ₃	Cl	H	H	
907	CH ₃	CH ₃	F	H	Cl	H	
908	CH ₃	OCH ₃	Cl	H	F	H	100
909	CH ₃	OCH ₃	CH ₃	H	H	F	
910	CH ₃	Cl	H	F	H	Cl	
911	CH ₃	H	F	F	F	H	60
912	CH ₃	Cl	H	F	OCH ₃	H	
913	CH ₃	F	H	Cl	OCH ₃	H	

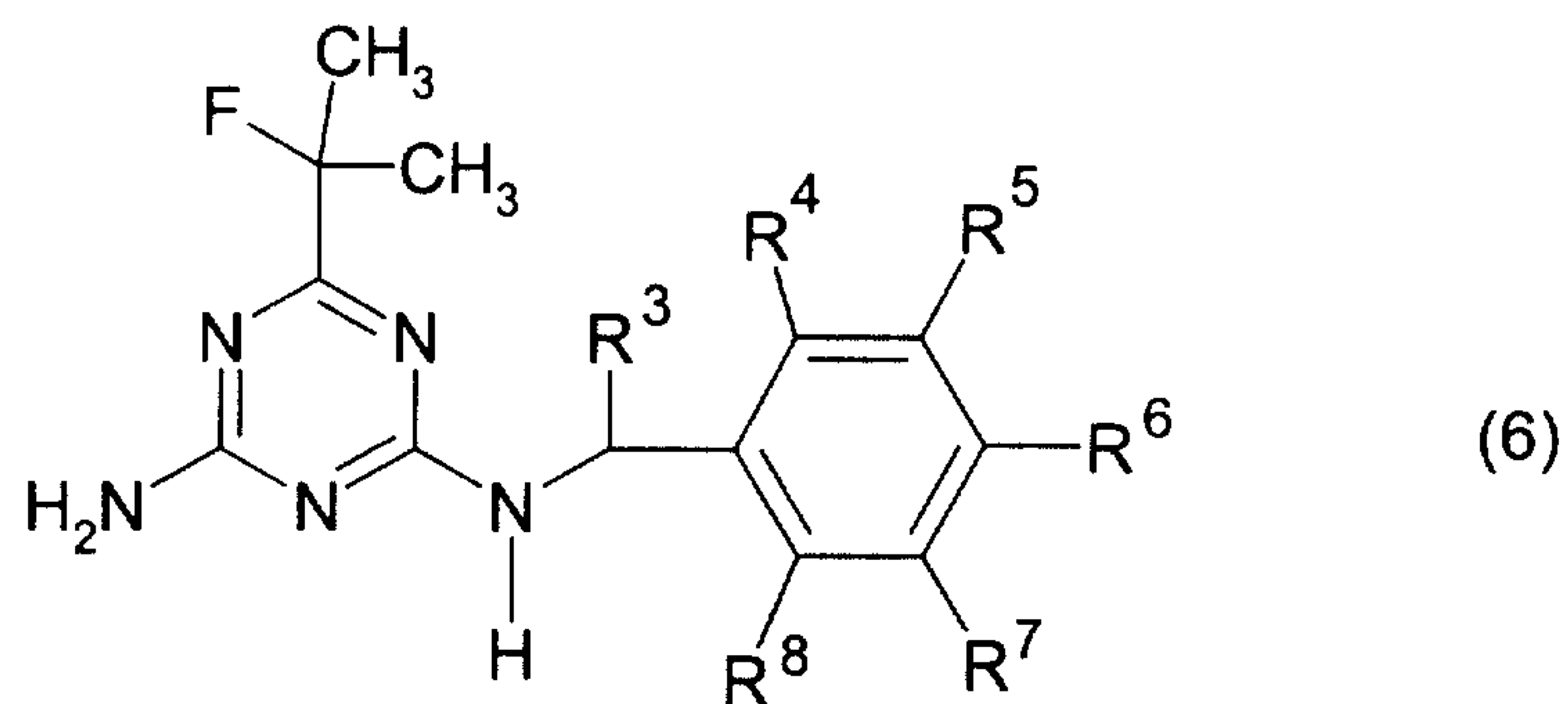
No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
914	CH ₃	F	H	F	F	H	
915	CH ₃	F	CH ₃	H	CH ₃	F	
916	CH ₃	F	F	Cl	CH ₃	H	
917	CH ₃	CH ₃	F	Cl	H	F	
918	CH ₃	CH ₃	F	F	F	CH ₃	
919	CH ₃	CH ₃	H	CH ₃	H	H	
920	CH ₃	H	F	CH ₃	H	H	
921	CH ₃	CH ₃	H	Cl	H	H	
922	CH ₃	H	Cl	H	CH=CHet	H	
923	CH ₃	H	Cl	H	C≡CEt	H	
924	CH ₃	H	Cl	H	C ₆ H ₅	H	
925	CH ₃	H	Cl	H	CN	H	
926	CH ₃	H	Cl	-(CH ₂) ₄ -		H	
927	CH ₃	H	Cl	-O(CH ₂) ₂ O-		H	
928	CH ₃	H	Cl	-OCH ₂ O-		H	Resin
929	C ₂ H ₅	CH ₃	H	CH ₃	H	H	
930	C ₂ H ₅	F	H	CH ₃	H	H	
931	C ₂ H ₅	CH ₃	H	Cl	H	H	
932	C ₂ H ₅	H	N(CH ₃) ₂	Cl	H	H	
933	C ₂ H ₅	H	SO ₂ CH ₃	CH ₃	H	H	
934	Me	H	Me	Br	H	H	
935	Me	H	Me	I	H	H	
936	Et	H	Me	F	H	H	Resin
937	Et	H	Me	Cl	H	H	
938	Et	H	Me	Br	H	H	
939	Et	H	Me	I	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
940	C ₂ H ₅	H	F	F	H	H	Resin
941	C ₂ H ₅	H	F	H	F	H	Resin
942	c-Pr	H	OMe	Br	H	H	Resin
943	c-Pr	H	Me	Br	H	H	Resin
944	c-Pr	H	NO ₂	Br	H	H	Resin
945	c-Pr	H	NH ₂	Br	H	H	Resin
946	c-Pr	H	NO ₂	Cl	H	H	Resin
947	c-Pr	H	NH ₂	Cl	H	H	Resin
948	c-Pr	H	OMe	F	H	H	Resin
949	c-Pr	H	NO ₂	F	H	H	Resin
950	c-Pr	H	NH ₂	F	H	H	Resin
951	c-Pr	OMe	H	F	H	H	Resin
952	c-Pr	F	H	F	H	H	Resin
953	c-Pr	F	H	H	H	F	Resin
954	c-Pr	H	Me	F	H	H	Resin
955	c-Pr	H	F	F	H	H	Resin
956	c-Pr	H	F	H	F	H	Resin
957	Me	H	Me	CH ₂ OCH ₃	H	H	
958	Me	H	F	CH ₂ OCH ₃	H	H	
959	Me	H	Cl	CH ₂ OCH ₃	H	H	
960	Me	H	Br	CH ₂ OCH ₃	H	H	
961	Me	H	CH ₃	CH ₂ SCH ₃	H	H	
962	Me	H	F	CH ₂ SCH ₃	H	H	
963	Me	H	Cl	CH ₂ SCH ₃	H	H	
964	Me	H	Br	CH ₂ SCH ₃	H	H	
965	Me	H	CH ₃	CH ₂ NMe ₂	H	H	

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No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
966	Me	H	F	CH ₂ NMe ₂	H	H	
967	Me	H	Cl	CH ₂ NMe ₂	H	H	
968	Me	H	Br	CH ₂ NMe ₂	H	H	
969	Et	H	Cl	CH ₃	H	H	
970	Me	H	Br	CH ₃	H	H	
971	Et	H	CH ₃	CH ₂ OCH ₃	H	H	
972	Et	H	F	CH ₂ OCH ₃	H	H	
973	Et	H	Cl	CH ₂ OCH ₃	H	H	
974	Et	H	Br	CH ₂ OCH ₃	H	H	
975	Et	H	CH ₃	CH ₂ SCH ₃	H	H	
976	Et	H	F	CH ₂ SCH ₃	H	H	
977	Et	H	Cl	CH ₂ SCH ₃	H	H	
978	Et	H	Br	CH ₂ SCH ₃	H	H	
979	Et	H	CH ₃	CH ₂ NMe ₂	H	H	
980	Et	H	F	CH ₂ NMe ₂	H	H	
981	Et	H	Cl	CH ₂ NMe ₂	H	H	
982	Et	H	Br	CH ₂ NMe ₂	H	H	
983	Et	H	Cl	CH ₃	H	H	
984	Et	H	Br	CH ₃	H	H	
985	Et	H	F	CH ₃	H	H	

Table 6: Compounds of the formula (6)



No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
986	CH ₃	CH ₃	H	F	H	H	
987	CH ₃	CF ₃	H	F	H	H	179
988	CH ₃	OH	H	F	H	H	
989	CH ₃	OCH ₃	H	F	H	H	Oil
990	CH ₃	i-Pr	H	CH ₂ C ₆ H ₅	H	H	
991	CH ₃	F	H	F	H	H	Oil
992	CH ₃	Cl	H	F	H	H	
993	CH ₃	Br	H	F	H	H	
994	CH ₃	I	H	C(CH ₃) ₃	H	H	
995	CH ₃	CH ₃	H	OCH ₂ C ₆ H ₅	H	H	
996	CH ₃	CF ₃	H	OC ₆ H ₅	H	H	
997	CH ₃	OH	H	NO ₂	H	H	Resin
998	CH ₃	OCH ₃	H	NH ₂	H	H	Resin
999	CH ₃	CH ₂ OMe	H	C ₆ H ₅	H	H	
1000	CH ₃	F	H	NHCOCH ₃	H	H	Resin
1001	CH ₃	Cl	H	NHCHO	H	H	Resin
1002	CH ₃	Br	H	N(SO ₂ Me) ₂	H	H	Resin
1003	CH ₃	I	H	NHSO ₂ CH ₃	H	H	Resin

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1004	CH ₃	CH ₃	H	SCH ₃	H	H	
1005	CH ₃	CF ₃	H	SOCH ₃	H	H	
1006	CH ₃	OH	H	SO ₂ NH ₂	H	H	
1007	CH ₃	OCH ₃	H	SO ₂ NHCH ₃	H	H	
1008	CH ₃	CH ₂ OMe	H	F	H	H	
1009	CH ₃	F	H	SO ₂ CH ₃	H	H	
1010	CH ₃	Cl	H	CH ₂ OCH ₃	H	H	
1011	CH ₃	Br	H	CH ₂ NMe ₂	H	H	
1012	CH ₃	I	H	CH ₂ SCH ₃	H	H	
1013	CH ₃	CH ₃	H	F	H	H	
1014	CH ₃	CF ₃	H	Cl	H	H	
1015	CH ₃	CH ₂ NMe ₂	H	F	H	H	
1016	CH ₃	CH ₂ SMe	H	F	H	H	
1017	CH ₃	CH ₃	F	H	H	H	
1018	CH ₃	CF ₃	F	H	H	H	
1019	CH ₃	F	CF ₃	H	H	H	
1020	CH ₃	CH ₃	H	H	CH ₃	H	
1021	CH ₃	CF ₃	H	H	CH ₂ OCH ₃	H	
1022	CH ₃	OH	H	H	CF ₃	H	
1023	CH ₃	OCH ₃	H	H	OCH ₃	H	
1024	CH ₃	CH ₂ OMe	H	H	N(CH ₃) ₂	H	Resin
1025	CH ₃	F	H	H	F	H	
1026	CH ₃	Cl	H	H	Cl	H	
1027	CH ₃	Br	H	H	SO ₂ CH ₃	H	
1028	CH ₃	I	H	H	SO ₂ CH ₃	H	
1029	CH ₃	CH ₃	H	H	H	F	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1030	CH ₃	CF ₃	H	H	H	F	
1031	CH ₃	H	CH ₃	Cl	H	H	138
1032	CH ₃	H	CF ₃	F	H	H	
1033	CH ₃	H	CH ₃	F	H	H	Oil
1034	CH ₃	H	OCH ₃	F	H	H	Oil
1035	CH ₃	H	NO ₂	F	H	H	
1036	CH ₃	H	NH ₂	F	H	H	Oil
1037	CH ₃	H	N(CH ₃) ₂	F	H	H	
1038	CH ₃	H	NHCOCH ₃	F	H	H	
1039	CH ₃	H	NHCHO	F	H	H	
1040	CH ₃	H	N(SO ₂ Me) ₂	F	H	H	
1041	CH ₃	H	NHSO ₂ CH ₃	F	H	H	
1042	CH ₃	H	SMe	F	H	H	
1043	CH ₃	H	SOMe	F	H	H	
1044	CH ₃	H	SO ₂ NH ₂	F	H	H	
1045	CH ₃	H	SO ₂ NHCH ₃	F	H	H	
1046	CH ₃	H	SO ₂ NMe ₂	F	H	H	
1047	CH ₃	H	SO ₂ CH ₃	F	H	H	
1048	CH ₃	H	NHCOCH ₃	SO ₂ NH ₂	H	H	
1049	CH ₃	H	CH ₂ OCH ₃	F	H	H	
1050	CH ₃	H	CH ₂ NMe ₂	F	H	H	
1051	CH ₃	H	CH ₂ SCH ₃	F	H	H	
1052	CH ₃	H	F	F	H	H	120
1053	CH ₃	H	Cl	F	H	H	Oil
1054	CH ₃	H	Br	F	H	H	132
1055	CH ₃	H	I	F	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1056	CH ₃	H	F	c-Pr	H	H	Resin
1057	CH ₃	H	F	CH ₂ C ₆ H ₅	H	H	Resin
1058	CH ₃	H	F	CH=CH ₂	H	H	Resin
1059	CH ₃	H	F	C≡CH	H	H	Resin
1060	CH ₃	H	F	H	F	H	143
1061	CH ₃	F	H	Cl	F	H	130
1062	CHFMe	H	OMe	Br	H	H	Resin
1063	CHFMe	H	Me	Br	H	H	Resin
1064	CHFMe	H	NO ₂	Br	H	H	Resin
1065	CHFMe	H	NH ₂	Br	H	H	Resin
1066	CHFMe	H	NO ₂	Cl	H	H	Resin
1067	CHFMe	H	NH ₂	Cl	H	H	Resin
1068	CHFMe	H	OMe	F	H	H	Resin
1069	CHFMe	H	NO ₂	F	H	H	Resin
1070	CHFMe	H	NH ₂	F	H	H	Resin
1071	CHFMe	OMe	H	F	H	H	Resin
1072	CHFMe	F	H	F	H	H	Resin
1073	CHFMe	F	H	H	H	F	Resin
1074	CHFMe	H	F	H	F	H	Resin
1075	CHFMe	H	F	F	H	H	Resin
1076	CHFMe	H	Me	F	H	H	Resin
1077	CH ₃	H	F	Cl	H	H	Resin
1078	CH ₃	H	CH ₃	H	NO ₂	H	Resin
1079	CH ₃	H	CF ₃	H	NH ₂	H	Resin
1080	CH ₃	H	OH	H	N(CH ₃) ₂	H	Resin
1081	CH ₃	H	OCH ₃	H	NHCOCH ₃	H	Resin

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1082	CH ₃	H	NO ₂	H	NHCHO	H	Resin
1083	CH ₃	H	NH ₂	H	N(SO ₂ Me) ₂	H	Resin
1084	CH ₃	H	N(CH ₃) ₂	H	NHSO ₂ CH ₃	H	Resin
1085	CH ₃	H	NHCOCH ₃	H	F	H	
1086	CH ₃	H	NHCHO	H	Cl	H	
1087	CH ₃	H	N(SO ₂ Me) ₂	H	Br	H	
1088	CH ₃	H	NHSO ₂ CH ₃	H	I	H	
1089	CH ₃	H	SMe	H	CH ₃	H	
1090	CH ₃	H	SOMe	H	CF ₃	H	
1091	CH ₃	H	SO ₂ NH ₂	H	OH	H	
1092	CH ₃	H	SO ₂ NHCH ₃	H	OCH ₃	H	
1093	CH ₃	H	SO ₂ NMe ₂	H	SCH ₃	H	
1094	CH ₃	H	SO ₂ CH ₃	H	SOCH ₃	H	
1095	CH ₃	H	CH ₂ OCH ₃	H	SO ₂ NH ₂	H	
1096	CH ₃	H	F	H	SO ₂ NHCH ₃	H	
1097	CH ₃	H	Cl	H	SO ₂ NMe ₂	H	
1098	CH ₃	H	Br	H	SO ₂ CH ₃	H	
1099	CH ₃	H	I	H	C ₂ H ₅	H	
1100	CH ₃	CH ₃	CH ₃	Cl	H	H	
1101	CH ₃	CH ₃	F	H	Cl	H	
1102	CH ₃	OCH ₃	Cl	H	F	H	Oil
1103	CH ₃	OCH ₃	CH ₃	H	H	F	
1104	CH ₃	Cl	H	F	H	Cl	
1105	CH ₃	H	F	F	F	H	129
1106	CH ₃	Cl	H	F	OCH ₃	H	
1107	CH ₃	F	H	Cl	OCH ₃	H	

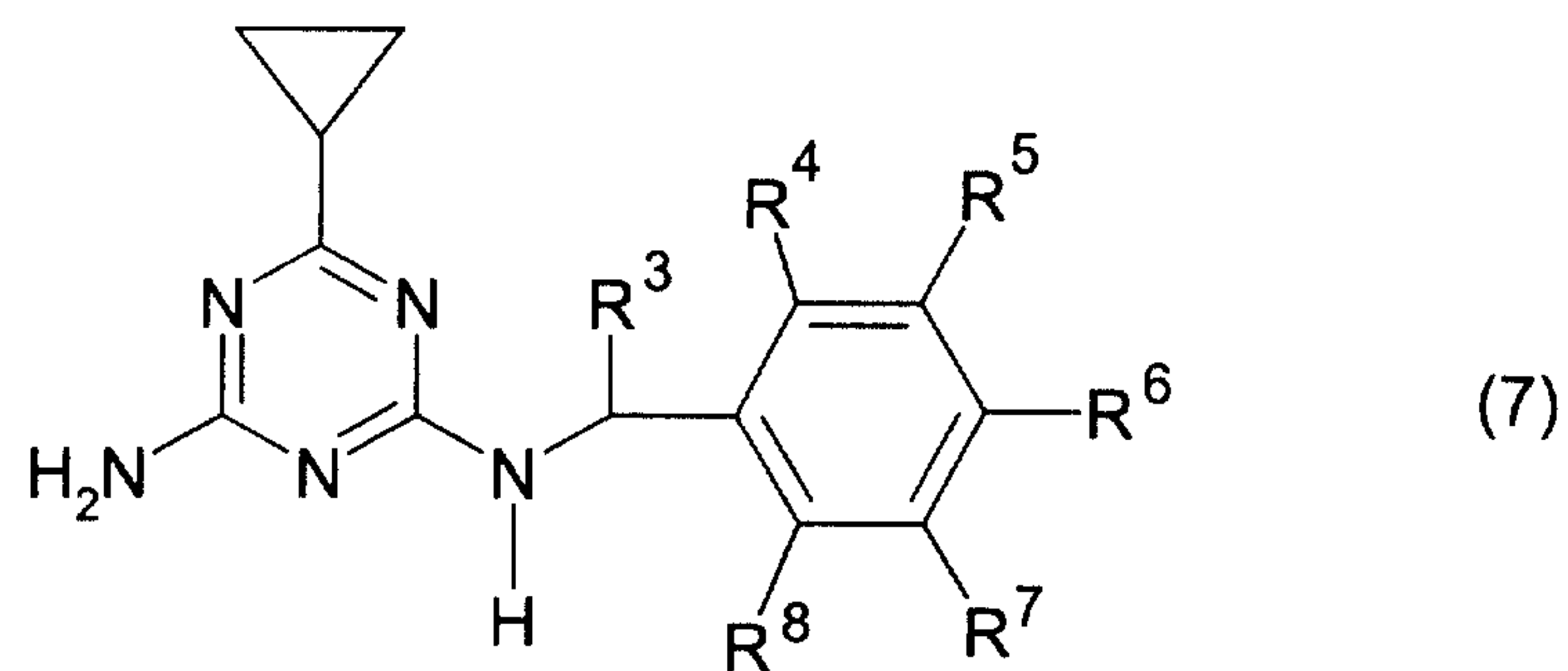
100

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1108	CH ₃	F	H	F	F	H	95
1109	CH ₃	F	CH ₃	H	CH ₃	F	
1110	CH ₃	F	F	Cl	CH ₃	H	
1111	CH ₃	CH ₃	F	Cl	H	F	
1112	CH ₃	CH ₃	F	F	F	CH ₃	
1113	CH ₃	CH ₃	H	CH ₃	H	H	
1114	CH ₃	H	F	CH ₃	H	H	
1115	CH ₃	CH ₃	H	Cl	H	H	
1116	H	H	Cl	Cl	H	H	Resin
1117	CH ₃	H	-(CH ₂) ₃ -		H	H	Resin
1118	CH ₃	H	Cl	H	CH=CHEt	H	
1119	CH ₃	H	Cl	H	C≡CEt	H	
1120	CH ₃	H	Cl	H	C ₆ H ₅	H	
1121	CH ₃	H	Cl	H	CN	H	
1122	CH ₃	H	Cl	-(CH ₂) ₄ -		H	
1123	CH ₃	H	Cl	-O(CH ₂) ₂ O-		H	
1124	CH ₃	H	Cl	-OCH ₂ O-		H	
1125	C ₂ H ₅	CH ₃	H	CH ₃	H	H	
1126	C ₂ H ₅	F	H	CH ₃	H	H	
1127	C ₂ H ₅	CH ₃	H	Cl	H	H	
1128	C ₂ H ₅	H	N(CH ₃) ₂	Cl	H	H	
1129	C ₂ H ₅	H	SO ₂ CH ₃	CH ₃	H	H	
1130	Me	H	Me	Br	H	H	
1131	Me	H	Me	I	H	H	
1132	Et	H	Me	F	H	H	Resin
1133	Et	H	Me	Cl	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1134	E	H	Me	Br	H	H	
1135	Et	H	Me	I	H	H	
1136	C ₂ H ₅	H	F	F	H	H	Resin
1137	C ₂ H ₅	H	F	H	F	H	Resin
1138	c-Pr	H	OMe	Br	H	H	Resin
1139	c-Pr	H	Me	Br	H	H	Resin
1140	c-Pr	H	NO ₂	Br	H	H	Resin
1141	c-Pr	H	NH ₂	Br	H	H	Resin
1142	c-Pr	H	NO ₂	Cl	H	H	Resin
1143	c-Pr	H	NH ₂	Cl	H	H	Resin
1144	c-Pr	H	OMe	F	H	H	Resin
1145	c-Pr	H	NO ₂	F	H	H	Resin
1146	c-Pr	H	NH ₂	F	H	H	Resin
1147	c-Pr	OMe	H	F	H	H	Resin
1148	c-Pr	F	H	F	H	H	Resin
1149	c-Pr	F	H	H	H	F	Resin
1150	c-Pr	H	Me	F	H	H	Resin
1151	c-Pr	H	F	F	H	H	Resin
1152	c-Pr	H	F	H	F	H	Resin
1153	Me	H	Me	CH ₂ OCH ₃	H	H	
1154	Me	H	F	CH ₂ OCH ₃	H	H	
1155	Me	H	Cl	CH ₂ OCH ₃	H	H	
1156	Me	H	Br	CH ₂ OCH ₃	H	H	
1157	Me	H	CH ₃	CH ₂ SCH ₃	H	H	
1158	Me	H	F	CH ₂ SCH ₃	H	H	
1159	Me	H	Cl	CH ₂ SCH ₃	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1160	Me	H	Br	CH ₂ SCH ₃	H	H	
1161	Me	H	CH ₃	CH ₂ NMe ₂	H	H	
1162	Me	H	F	CH ₂ NMe ₂	H	H	
1163	Me	H	Cl	CH ₂ NMe ₂	H	H	
1164	Me	H	Br	CH ₂ NMe ₂	H	H	
1165	Me	H	Cl	CH ₃	H	H	
1166	Me	H	Br	CH ₃	H	H	
1167	C ₂ H ₅	H	CH ₃	CH ₂ OCH ₃	H	H	
1168	C ₂ H ₅	H	F	CH ₂ OCH ₃	H	H	
1169	C ₂ H ₅	H	Cl	CH ₂ OCH ₃	H	H	
1170	C ₂ H ₅	H	Br	CH ₂ OCH ₃	H	H	
1171	C ₂ H ₅	H	CH ₃	CH ₂ SCH ₃	H	H	
1172	C ₂ H ₅	H	F	CH ₂ SCH ₃	H	H	
1173	C ₂ H ₅	H	Cl	CH ₂ SCH ₃	H	H	
1174	C ₂ H ₅	H	Br	CH ₂ SCH ₃	H	H	
1175	C ₂ H ₅	H	CH ₃	CH ₂ NMe ₂	H	H	
1176	C ₂ H ₅	H	F	CH ₂ NMe ₂	H	H	
1177	C ₂ H ₅	H	Cl	CH ₂ NMe ₂	H	H	
1178	C ₂ H ₅	H	Br	CH ₂ NMe ₂	H	H	
1179	C ₂ H ₅	H	Cl	CH ₃	H	H	
1180	C ₂ H ₅	H	Br	CH ₃	H	H	
1181	C ₂ H ₅	H	F	CH ₃	H	H	

Table 7: Compounds of the formula (7)



No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1182	CH ₃	CH ₃	H	F	H	H	Resin
1183	CH ₃	CF ₃	H	F	H	H	
1184	CH ₃	OH	H	F	H	H	
1185	CH ₃	OCH ₃	H	F	H	H	
1186	CH ₃	i-Pr	H	CH ₂ C ₆ H ₅	H	H	
1187	CH ₃	F	H	F	H	H	
1188	CH ₃	Cl	H	F	H	H	
1189	CH ₃	Br	H	F	H	H	
1190	CH ₃	I	H	i-Pr	H	H	
1191	CH ₃	CH ₃	H	OCH ₂ Ph	H	H	
1192	CH ₃	CF ₃	H	OPh	H	H	
1193	CH ₃	OH	H	NO ₂	H	H	Resin
1194	CH ₃	OCH ₃	H	NH ₂	H	H	Resin
1195	CH ₃	CH ₂ OMe	H	Ph	H	H	
1196	CH ₃	F	H	NHCOMe	H	H	Resin
1197	CH ₃	Cl	H	NHCHO	H	H	Resin
1198	CH ₃	Br	H	N(SO ₂ Me) ₂	H	H	Resin

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1199	CH ₃	I	H	NHSO ₂ Me	H	H	Resin
1200	CH ₃	CH ₃	H	SMe	H	H	
1201	CH ₃	CF ₃	H	SOMe	H	H	
1202	CH ₃	OH	H	SO ₂ NH ₂	H	H	
1203	CH ₃	OCH ₃	H	SO ₂ NHMe	H	H	
1204	CH ₃	CH ₂ OMe	H	F	H	H	
1205	CH ₃	F	H	SO ₂ CH ₃	H	H	
1206	CH ₃	Cl	H	CH ₂ OCH ₃	H	H	
1207	CH ₃	Br	H	CH ₂ NMe ₂	H	H	
1208	CH ₃	I	H	CH ₂ SCH ₃	H	H	
1209	CH ₃	CH ₃	H	F	H	H	
1210	CH ₃	CF ₃	H	Cl	H	H	
1211	CH ₃	CH ₂ NMe ₂	H	F	H	H	
1212	CH ₃	CH ₂ SMe	H	F	H	H	
1213	CH ₃	CH ₃	F	H	H	H	
1214	CH ₃	CF ₃	F	H	H	H	
1215	CH ₃	F	CF ₃	H	H	H	
1216	CH ₃	CH ₃	H	H	CH ₃	H	
1217	CH ₃	CF ₃	H	H	CH ₂ OCH ₃	H	
1218	CH ₃	OH	H	H	CF ₃	H	
1219	CH ₃	OCH ₃	H	H	OCH ₃	H	
1220	CH ₃	CH ₂ OMe	H	H	N(CH ₃) ₂	H	Resin
1221	CH ₃	F	H	H	F	H	
1222	CH ₃	Cl	H	H	Cl	H	
1223	CH ₃	Br	H	H	SO ₂ CH ₃	H	
1224	CH ₃	I	H	H	SO ₂ CH ₃	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1225	CH ₃	CH ₃	H	H	H	F	
1226	CH ₃	CF ₃	H	H	H	F	
1227	CH ₃	H	CH ₃	Cl	H	H	
1228	CH ₃	H	CF ₃	F	H	H	
1229	CH ₃	H	CH ₃	F	H	H	
1230	CH ₃	H	OCH ₃	F	H	H	
1231	CH ₃	H	NO ₂	F	H	H	
1232	CH ₃	H	NH ₂	F	H	H	
1233	CH ₃	H	N(CH ₃) ₂	F	H	H	
1234	CH ₃	H	NHCOCH ₃	F	H	H	
1235	CH ₃	H	NHCHO	F	H	H	
1236	CH ₃	H	N(SO ₂ CH ₃) ₂	F	H	H	
1237	CH ₃	H	NHSO ₂ CH ₃	F	H	H	
1238	CH ₃	H	SMe	F	H	H	
1239	CH ₃	H	SOMe	F	H	H	
1240	CH ₃	H	SO ₂ NH ₂	F	H	H	
1241	CH ₃	H	SO ₂ NHCH ₃	F	H	H	
1242	CH ₃	H	SO ₂ N(CH ₃) ₂	F	H	H	
1243	CH ₃	H	SO ₂ CH ₃	F	H	H	
1244	CH ₃	H	NHCOCH ₃	SO ₂ NH ₂	H	H	
1245	CH ₃	H	CH ₂ OCH ₃	F	H	H	
1246	CH ₃	H	CH ₂ N(CH ₃) ₂	F	H	H	
1247	CH ₃	H	CH ₂ SCH ₃	F	H	H	
1248	CH ₃	H	F	F	H	H	
1249	CH ₃	H	Cl	F	H	H	
1250	CH ₃	H	Br	F	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1251	CH ₃	H	I	F	H	H	
1252	CH ₃	H	F	c-Pr	H	H	Resin
1253	CH ₃	H	F	CH ₂ C ₆ H ₅	H	H	Resin
1254	CH ₃	H	F	CH=CH ₂	H	H	Resin
1255	CH ₃	H	F	C≡CH	H	H	Resin
1256	CH ₃	H	F	H	F	H	Oil
1257	CH ₃	F	H	Cl	F	H	Oil
1258	CHFMe	H	OMe	Br	H	H	Resin
1259	CHFMe	H	Me	Br	H	H	Resin
1260	CHFMe	H	NO ₂	Br	H	H	Resin
1261	CHFMe	H	NH ₂	Br	H	H	Resin
1262	CHFMe	H	NO ₂	Cl	H	H	Resin
1263	CHFMe	H	NH ₂	Cl	H	H	Resin
1264	CHFMe	H	OMe	F	H	H	Resin
1265	CHFMe	H	NO ₂	F	H	H	Resin
1266	CHFMe	H	NH ₂	F	H	H	Resin
1267	CHFMe	OMe	H	F	H	H	Resin
1268	CHFMe	F	H	F	H	H	Resin
1269	CHFMe	F	H	H	H	F	Resin
1270	CHFMe	H	F	H	F	H	Resin
1271	CHFMe	H	F	F	H	H	Resin
1272	CHFMe	H	Me	F	H	H	Resin
1273	CH ₃	H	F	Cl	H	H	Resin
1274	CH ₃	H	CH ₃	H	NO ₂	H	Resin
1275	CH ₃	H	CF ₃	H	NH ₂	H	Resin
1276	CH ₃	H	OH	H	N(CH ₃) ₂	H	Resin

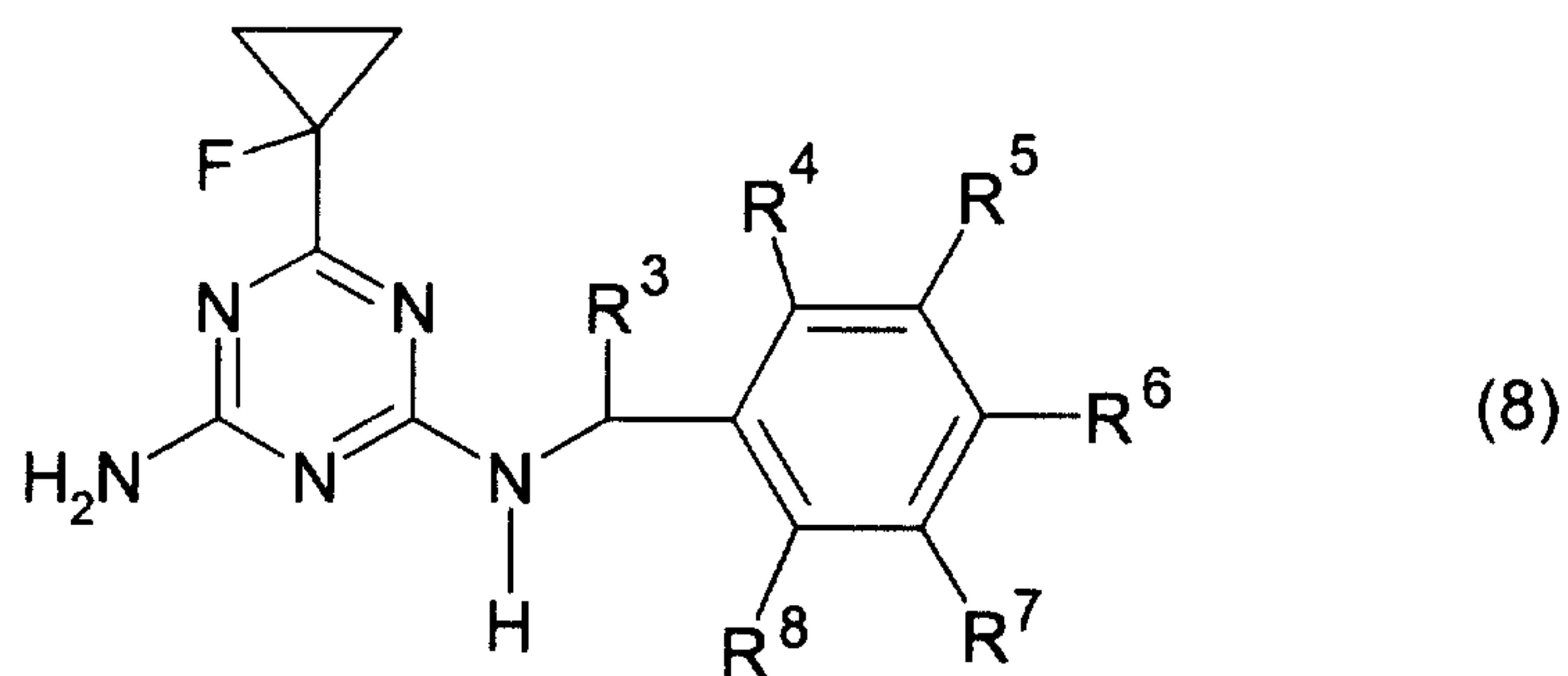
No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1277	CH ₃	H	OCH ₃	H	NHCOCH ₃	H	Resin
1278	CH ₃	H	NO ₂	H	NHCHO	H	Resin
1279	CH ₃	H	NH ₂	H	N(SO ₂ CH ₃) ₂	H	Resin
1280	CH ₃	H	NMe ₂	H	NHSO ₂ CH ₃	H	Resin
1281	CH ₃	H	NHCOCH ₃	H	F	H	
1282	CH ₃	H	NHCHO	H	Cl	H	
1283	CH ₃	H	N(SO ₂ Me) ₂	H	Br	H	
1284	CH ₃	H	NHSO ₂ Me	H	I	H	
1285	CH ₃	H	SMe	H	CH ₃	H	
1286	CH ₃	H	SOMe	H	CF ₃	H	
1287	CH ₃	H	SO ₂ NH ₂	H	OH	H	
1288	CH ₃	H	SO ₂ NHMe	H	OCH ₃	H	
1289	CH ₃	H	SO ₂ NMe ₂	H	SCH ₃	H	
1290	CH ₃	H	SO ₂ CH ₃	H	SOCH ₃	H	
1291	CH ₃	H	CH ₂ OCH ₃	H	SO ₂ NH ₂	H	
1292	CH ₃	H	F	H	SO ₂ NHCH ₃	H	
1293	CH ₃	H	Cl	H	SO ₂ N(CH ₃) ₂	H	
1294	CH ₃	H	Br	H	SO ₂ CH ₃	H	
1295	CH ₃	H	I	H	C ₂ H ₅	H	
1296	CH ₃	CH ₃	CH ₃	Cl	H	H	
1297	CH ₃	CH ₃	F	H	Cl	H	
1298	CH ₃	OCH ₃	Cl	H	F	H	
1299	CH ₃	OCH ₃	CH ₃	H	H	F	
1300	CH ₃	Cl	H	F	H	Cl	
1301	CH ₃	H	F	F	F	H	
1302	CH ₃	Cl	H	F	OCH ₃	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1303	CH ₃	F	H	Cl	OCH ₃	H	
1304	CH ₃	F	H	F	F	H	
1305	CH ₃	F	CH ₃	H	CH ₃	F	
1306	CH ₃	F	F	Cl	CH ₃	H	
1307	CH ₃	CH ₃	F	Cl	H	F	
1308	CH ₃	CH ₃	F	F	F	CH ₃	
1309	CH ₃	CH ₃	H	CH ₃	H	H	
1310	CH ₃	H	F	CH ₃	H	H	
1311	CH ₃	CH ₃	H	Cl	H	H	
1312	CH ₃	H	Cl	H	CH=CHEt	H	
1313	CH ₃	H	Cl	H	C≡CEt	H	
1314	CH ₃	H	Cl	H	C ₆ H ₅	H	
1315	CH ₃	H	Cl	H	CN	H	
1316	CH ₃	H	Cl	-(CH ₂) ₄ -			
1317	CH ₃	H	Cl	-O(CH ₂) ₂ O-			
1318	CH ₃	H	Cl	-OCH ₂ O-			
1319	C ₂ H ₅	CH ₃	H	CH ₃	H	H	Resin
1320	C ₂ H ₅	F	H	CH ₃	H	H	Resin
1321	C ₂ H ₅	CH ₃	H	Cl	H	H	Resin
1322	C ₂ H ₅	H	N(CH ₃) ₂	Cl	H	H	Resin
1323	C ₂ H ₅	H	SO ₂ CH ₃	CH ₃	H	H	Resin
1324	Me	H	CH ₃	Br	H	H	
1325	Me	H	CH ₃	I	H	H	
1326	Et	H	CH ₃	F	H	H	Resin
1327	Et	H	CH ₃	Cl	H	H	
1328	Et	H	CH ₃	Br	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1329	Et	H	CH ₃	I	H	H	
1330	Et	H	CH ₃	CH ₂ OCH ₃	H	H	
1331	C ₂ H ₅	H	F	F	H	H	Resin
1332	C ₂ H ₅	H	F	H	F	H	Resin
1333	c-Pr	H	OMe	Br	H	H	Resin
1334	c-Pr	H	Me	Br	H	H	Resin
1335	c-Pr	H	NO ₂	Br	H	H	Resin
1336	c-Pr	H	NH ₂	Br	H	H	Resin
1337	c-Pr	H	NO ₂	Cl	H	H	Resin
1338	c-Pr	H	NH ₂	Cl	H	H	Resin
1339	c-Pr	H	OMe	F	H	H	Resin
1340	c-Pr	H	NO ₂	F	H	H	Resin
1341	c-Pr	H	NH ₂	F	H	H	Resin
1342	c-Pr	OMe	H	F	H	H	Resin
1343	c-Pr	F	H	F	H	H	Resin
1344	c-Pr	F	H	H	H	F	Resin
1345	c-Pr	H	Me	F	H	H	Resin
1346	c-Pr	H	F	F	H	H	Resin
1347	c-Pr	H	F	H	F	H	Resin
1348	Me	H	F	CH ₂ OCH ₃	H	H	
1349	Me	H	Cl	CH ₂ OCH ₃	H	H	
1350	Me	H	Br	CH ₂ OCH ₃	H	H	
1351	Me	H	CH ₃	CH ₂ SCH ₃	H	H	
1352	Me	H	F	CH ₂ SCH ₃	H	H	
1353	Me	H	Cl	CH ₂ SCH ₃	H	H	
1354	Me	H	Br	CH ₂ SCH ₃	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1355	Me	H	CH ₃	CH ₂ NMe ₂	H	H	
1356	Me	H	F	CH ₂ NMe ₂	H	H	
1357	Me	H	Cl	CH ₂ NMe ₂	H	H	
1358	Me	H	Br	CH ₂ NMe ₂	H	H	
1359	Me	H	Cl	CH ₃	H	H	
1360	Me	H	Br	CH ₃	H	H	
1361	C ₂ H ₅	H	CH ₃	CH ₂ OCH ₃	H	H	
1362	C ₂ H ₅	H	F	CH ₂ OCH ₃	H	H	
1363	C ₂ H ₅	H	Cl	CH ₂ OCH ₃	H	H	
1364	C ₂ H ₅	H	Br	CH ₂ OCH ₃	H	H	
1365	C ₂ H ₅	H	CH ₃	CH ₂ SCH ₃	H	H	
1366	C ₂ H ₅	H	F	CH ₂ SCH ₃	H	H	
1367	C ₂ H ₅	H	Cl	CH ₂ SCH ₃	H	H	
1368	C ₂ H ₅	H	Br	CH ₂ SCH ₃	H	H	
1369	C ₂ H ₅	H	CH ₃	CH ₂ NMe ₂	H	H	
1370	C ₂ H ₅	H	F	CH ₂ NMe ₂	H	H	
1371	C ₂ H ₅	H	Cl	CH ₂ NMe ₂	H	H	
1372	C ₂ H ₅	H	Br	CH ₂ NMe ₂	H	H	
1373	C ₂ H ₅	H	Cl	CH ₃	H	H	
1374	C ₂ H ₅	H	Br	CH ₃	H	H	
1375	C ₂ H ₅	H	F	CH ₃	H	H	

Table 8: Compounds of the formula (8)



No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1376	CH ₃	CH ₃	H	F	H	H	Resin
1377	CH ₃	CF ₃	H	F	H	H	
1378	CH ₃	OH	H	F	H	H	
1379	CH ₃	OCH ₃	H	F	H	H	
1380	CH ₃	i-Pr	H	CH ₂ C ₆ H ₅	H	H	
1381	CH ₃	F	H	F	H	H	
1382	CH ₃	Cl	H	F	H	H	
1383	CH ₃	Br	H	F	H	H	
1384	CH ₃	I	H	i-Pr	H	H	
1385	CH ₃	CH ₃	H	OCH ₂ Ph	H	H	
1386	CH ₃	CF ₃	H	OPh	H	H	
1387	CH ₃	OH	H	NO ₂	H	H	Resin
1388	CH ₃	OCH ₃	H	NH ₂	H	H	Resin
1389	CH ₃	CH ₂ OMe	H	Ph	H	H	
1390	CH ₃	F	H	NHCOMe	H	H	Resin
1391	CH ₃	Cl	H	NHCHO	H	H	Resin
1392	CH ₃	Br	H	N(SO ₂ Me) ₂	H	H	Resin
1393	CH ₃	I	H	NHSO ₂ Me	H	H	Resin

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1394	CH ₃	CH ₃	H	SMe	H	H	
1395	CH ₃	CF ₃	H	SOMe	H	H	
1396	CH ₃	OH	H	SO ₂ NH ₂	H	H	
1397	CH ₃	OCH ₃	H	SO ₂ NHMe	H	H	
1398	CH ₃	CH ₂ OMe	H	F	H	H	
1399	CH ₃	F	H	SO ₂ CH ₃	H	H	
1400	CH ₃	Cl	H	CH ₂ OCH ₃	H	H	
1401	CH ₃	Br	H	CH ₂ N(CH ₃) ₂	H	H	
1402	CH ₃	I	H	CH ₂ SCH ₃	H	H	
1403	CH ₃	CH ₃	H	F	H	H	
1404	CH ₃	CF ₃	H	Cl	H	H	
1405	CH ₃	CH ₂ NMe ₂	H	F	H	H	
1406	CH ₃	CH ₂ SMe	H	F	H	H	
1407	CH ₃	CH ₃	F	H	H	H	
1408	CH ₃	CF ₃	F	H	H	H	
1409	CH ₃	F	CF ₃	H	H	H	
1410	CH ₃	CH ₃	H	H	CH ₃	H	
1411	CH ₃	CF ₃	H	H	CH ₂ OCH ₃	H	
1412	CH ₃	OH	H	H	CF ₃	H	
1413	CH ₃	OCH ₃	H	H	OCH ₃	H	
1414	CH ₃	CH ₂ OMe	H	H	N(CH ₃) ₂	H	Resin
1415	CH ₃	F	H	H	F	H	
1416	CH ₃	Cl	H	H	Cl	H	
1417	CH ₃	Br	H	H	SO ₂ CH ₃	H	
1418	CH ₃	I	H	H	SO ₂ CH ₃	H	
1419	CH ₃	CH ₃	H	H	H	F	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1420	CH ₃	CF ₃	H	H	H	F	
1421	CH ₃	H	CH ₃	Cl	H	H	
1422	CH ₃	H	CF ₃	F	H	H	
1423	CH ₃	H	CH ₃	F	H	H	
1424	CH ₃	H	OCH ₃	F	H	H	
1425	CH ₃	H	NO ₂	F	H	H	
1426	CH ₃	H	NH ₂	F	H	H	
1427	CH ₃	H	N(CH ₃) ₂	F	H	H	
1428	CH ₃	H	NHCOCH ₃	F	H	H	
1429	CH ₃	H	NHCHO	F	H	H	
1430	CH ₃	H	N(SO ₂ CH ₃) ₂	F	H	H	
1431	CH ₃	H	NHSO ₂ CH ₃	F	H	H	
1432	CH ₃	H	SMe	F	H	H	
1433	CH ₃	H	SOMe	F	H	H	
1434	CH ₃	H	SO ₂ NH ₂	F	H	H	
1435	CH ₃	H	SO ₂ NHCH ₃	F	H	H	
1436	CH ₃	H	SO ₂ N(CH ₃) ₂	F	H	H	
1437	CH ₃	H	SO ₂ CH ₃	F	H	H	
1438	CH ₃	H	NHCOCH ₃	SO ₂ NH ₂	H	H	
1439	CH ₃	H	CH ₂ OCH ₃	F	H	H	
1440	CH ₃	H	CH ₂ N(CH ₃) ₂	F	H	H	
1441	CH ₃	H	CH ₂ SCH ₃	F	H	H	
1442	CH ₃	H	F	F	H	H	
1443	CH ₃	H	Cl	F	H	H	
1444	CH ₃	H	Br	F	H	H	
1445	CH ₃	H	I	F	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1446	CH ₃	H	F	c-Pr	H	H	Resin
1447	CH ₃	H	F	CH ₂ C ₆ H ₅	H	H	Resin
1448	CH ₃	H	F	CH=CH ₂	H	H	Resin
1449	CH ₃	H	F	C≡CH	H	H	Resin
1450	CH ₃	H	F	H	F	H	Oil
1451	CH ₃	F	H	Cl	F	H	Oil
1452	CHFMe	H	OMe	Br	H	H	Resin
1453	CHFMe	H	Me	Br	H	H	Resin
1454	CHFMe	H	NO ₂	Br	H	H	Resin
1455	CHFMe	H	NH ₂	Br	H	H	Resin
1456	CHFMe	H	NO ₂	Cl	H	H	Resin
1457	CHFMe	H	NH ₂	Cl	H	H	Resin
1458	CHFMe	H	OMe	F	H	H	Resin
1459	CHFMe	H	NO ₂	F	H	H	Resin
1460	CHFMe	H	NH ₂	F	H	H	Resin
1461	CHFMe	OMe	H	F	H	H	Resin
1462	CHFMe	F	H	F	H	H	Resin
1463	CHFMe	F	H	H	H	F	Resin
1464	CHFMe	H	F	H	F	H	Resin
1465	CHFMe	H	F	F	H	H	Resin
1466	CHFMe	H	Me	F	H	H	Resin
1467	CH ₃	H	F	Cl	H	H	Resin
1468	CH ₃	H	CH ₃	H	NO ₂	H	Resin
1469	CH ₃	H	CF ₃	H	NH ₂	H	Resin
1470	CH ₃	H	OH	H	N(CH ₃) ₂	H	Resin
1471	CH ₃	H	OCH ₃	H	NHCOCH ₃	H	Resin

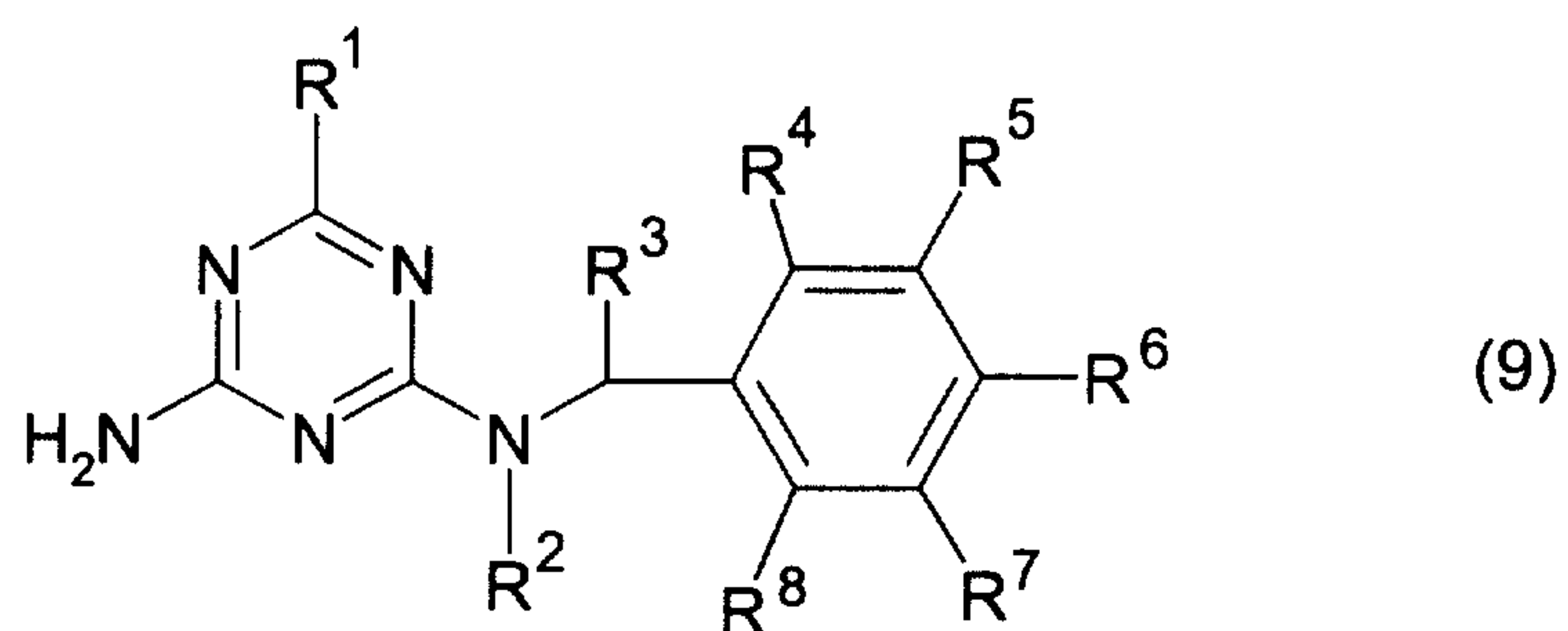
No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1472	CH ₃	H	NO ₂	H	NHCHO	H	Resin
1473	CH ₃	H	NH ₂	H	N(SO ₂ CH ₃) ₂	H	Resin
1474	CH ₃	H	NMe ₂	H	NHSO ₂ CH ₃	H	Resin
1475	CH ₃	H	NHCOCH ₃	H	F	H	
1476	CH ₃	H	NHCHO	H	Cl	H	
1477	CH ₃	H	N(SO ₂ Me) ₂	H	Br	H	
1478	CH ₃	H	NHSO ₂ Me	H	I	H	
1479	CH ₃	H	SCH ₃	H	CH ₃	H	
1480	CH ₃	H	SOCH ₃	H	CF ₃	H	
1481	CH ₃	H	SO ₂ NH ₂	H	OH	H	
1482	CH ₃	H	SO ₂ NHMe	H	OCH ₃	H	
1483	CH ₃	H	SO ₂ NMe ₂	H	SCH ₃	H	
1484	CH ₃	H	SO ₂ CH ₃	H	SOCH ₃	H	
1485	CH ₃	H	CH ₂ OCH ₃	H	SO ₂ NH ₂	H	
1486	CH ₃	H	F	H	SO ₂ NHCH ₃	H	
1487	CH ₃	H	Cl	H	SO ₂ N(CH ₃) ₂	H	
1488	CH ₃	H	Br	H	SO ₂ CH ₃	H	
1489	CH ₃	H	I	H	C ₂ H ₅	H	
1490	CH ₃	CH ₃	CH ₃	Cl	H	H	
1491	CH ₃	CH ₃	F	H	Cl	H	
1492	CH ₃	OCH ₃	Cl	H	F	H	
1493	CH ₃	OCH ₃	CH ₃	H	H	F	
1494	CH ₃	Cl	H	F	H	Cl	
1495	CH ₃	H	F	F	F	H	
1496	CH ₃	Cl	H	F	OCH ₃	H	
1497	CH ₃	F	H	Cl	OCH ₃	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1498	CH ₃	F	H	F	F	H	
1499	CH ₃	F	CH ₃	H	CH ₃	F	
1500	CH ₃	F	F	Cl	CH ₃	H	
1501	CH ₃	CH ₃	F	Cl	H	F	
1502	CH ₃	CH ₃	F	F	F	CH ₃	
1503	CH ₃	CH ₃	H	CH ₃	H	H	
1504	CH ₃	H	F	CH ₃	H	H	
1505	CH ₃	CH ₃	H	Cl	H	H	
1506	CH ₃	H	Cl	H	CH=CHC ₂ H ₅	H	
1507	CH ₃	H	Cl	H	C≡CC ₂ H ₅	H	
1508	CH ₃	H	Cl	H	C ₆ H ₅	H	
1509	CH ₃	H	Cl	H	CN	H	
1510	CH ₃	H	Cl	-(CH ₂) ₄ -			
1511	CH ₃	H	Cl	-O(CH ₂) ₂ O-			
1512	CH ₃	H	Cl	-OCH ₂ O-			
1513	C ₂ H ₅	CH ₃	H	CH ₃	H	H	Resin
1514	C ₂ H ₅	F	H	CH ₃	H	H	Resin
1515	C ₂ H ₅	CH ₃	H	Cl	H	H	Resin
1516	C ₂ H ₅	H	N(CH ₃) ₂	Cl	H	H	Resin
1517	C ₂ H ₅	H	SO ₂ CH ₃	CH ₃	H	H	Resin
1518	Me	H	Me	Br	H	H	
1519	Me	H	Me	I	H	H	
1520	Et	H	Me	F	H	H	Resin
1521	Et	H	Me	Cl	H	H	
1522	Et	H	Me	Br	H	H	
1523	Et	H	Me	I	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1524	C ₂ H ₅	H	F	F	H	H	Resin
1525	C ₂ H ₅	H	F	H	F	H	Resin
1526	c-Pr	H	OMe	Br	H	H	Resin
1527	c-Pr	H	Me	Br	H	H	Resin
1528	c-Pr	H	NO ₂	Br	H	H	Resin
1529	c-Pr	H	NH ₂	Br	H	H	Resin
1530	c-Pr	H	NO ₂	Cl	H	H	Resin
1531	c-Pr	H	NH ₂	Cl	H	H	Resin
1532	c-Pr	H	OMe	F	H	H	Resin
1533	c-Pr	H	NO ₂	F	H	H	Resin
1534	c-Pr	H	NH ₂	F	H	H	Resin
1535	c-Pr	OMe	H	F	H	H	Resin
1536	c-Pr	F	H	F	H	H	Resin
1537	c-Pr	F	H	H	H	F	Resin
1538	c-Pr	H	Me	F	H	H	Resin
1539	c-Pr	H	F	F	H	H	Resin
1540	c-Pr	H	F	H	F	H	Resin
1541	Me	H	Me	CH ₂ OCH ₃	H	H	
1542	Me	H	F	CH ₂ OCH ₃	H	H	
1543	Me	H	Cl	CH ₂ OCH ₃	H	H	
1544	Me	H	Br	CH ₂ OCH ₃	H	H	
1545	Me	H	CH ₃	CH ₂ SCH ₃	H	H	
1546	Me	H	F	CH ₂ SCH ₃	H	H	
1547	Me	H	Cl	CH ₂ SCH ₃	H	H	
1548	Me	H	Br	CH ₂ SCH ₃	H	H	
1549	Me	H	CH ₃	CH ₂ N(CH ₃) ₂	H	H	

No.	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1550	Me	H	F	CH ₂ N(CH ₃) ₂	H	H	
1551	Me	H	Cl	CH ₂ N(CH ₃) ₂	H	H	
1552	Me	H	Br	CH ₂ N(CH ₃) ₂	H	H	
1553	Me	H	Cl	CH ₃	H	H	
1554	Me	H	Br	CH ₃	H	H	
1555	C ₂ H ₅	H	CH ₃	CH ₂ OCH ₃	H	H	
1556	C ₂ H ₅	H	F	CH ₂ OCH ₃	H	H	
1557	C ₂ H ₅	H	Cl	CH ₂ OCH ₃	H	H	
1558	C ₂ H ₅	H	Br	CH ₂ OCH ₃	H	H	
1559	C ₂ H ₅	H	CH ₃	CH ₂ SCH ₃	H	H	
1560	C ₂ H ₅	H	F	CH ₂ SCH ₃	H	H	
1561	C ₂ H ₅	H	Cl	CH ₂ SCH ₃	H	H	
1562	C ₂ H ₅	H	Br	CH ₂ SCH ₃	H	H	
1563	C ₂ H ₅	H	CH ₃	CH ₂ N(CH ₃) ₂	H	H	
1564	C ₂ H ₅	H	F	CH ₂ N(CH ₃) ₂	H	H	
1565	C ₂ H ₅	H	Cl	CH ₂ N(CH ₃) ₂	H	H	
1566	C ₂ H ₅	H	Br	CH ₂ N(CH ₃) ₂	H	H	
1567	C ₂ H ₅	H	Cl	CH ₃	H	H	
1568	C ₂ H ₅	H	Br	CH ₃	H	H	
1569	C ₂ H ₅	H	F	CH ₃	H	H	

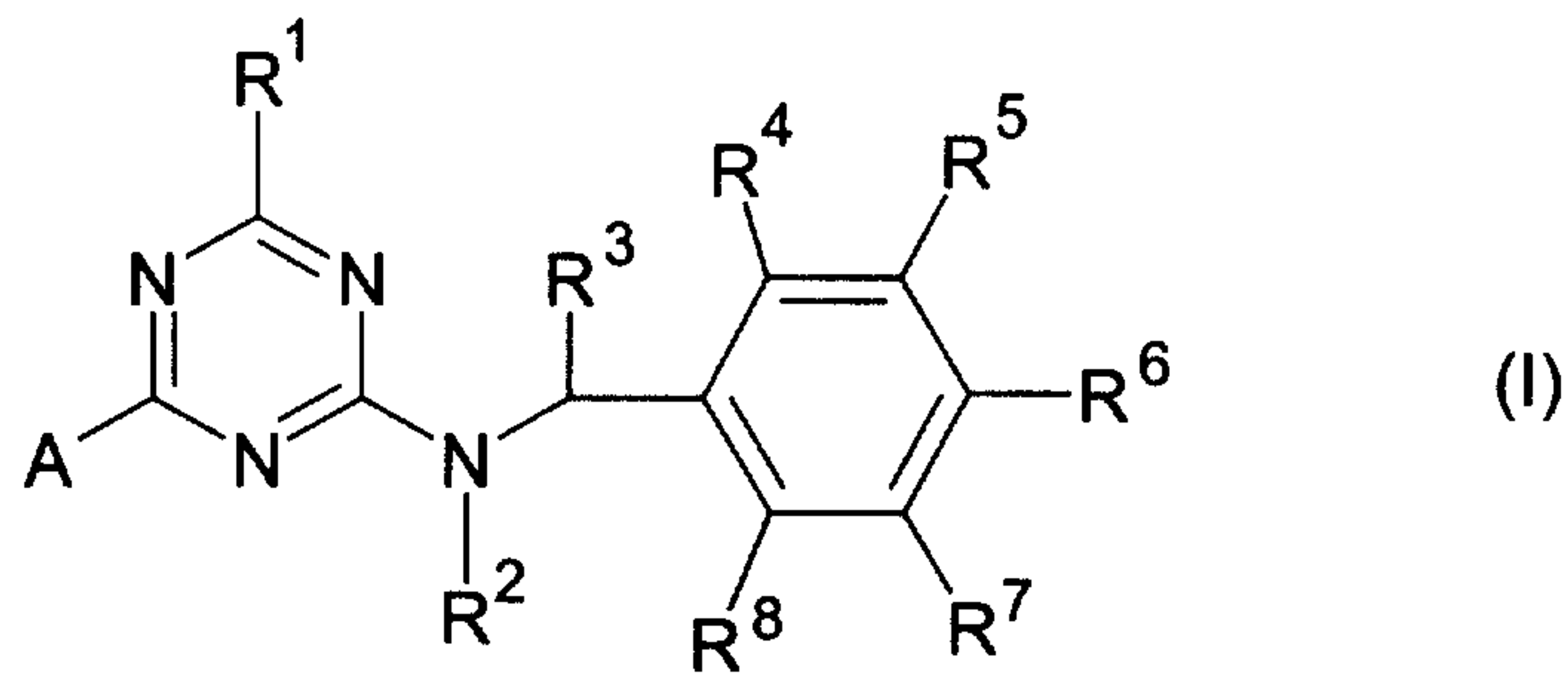
Table 9 below refers to the formula (9)



No.	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1570	CF ₃	H	CH ₃	OCH ₃	Cl	H	F	H	134
1571	CF ₃	H	CH ₃	Cl	H	F	OCH ₃	H	Oil
1572	CF ₃	H	CH ₃	F	H	Cl	OCH ₃	H	
1573	CF ₃	H	CH ₃	H	CH ₃	OCH ₃	H	H	104
1574	CF ₃	H	CH ₃	H	OCH ₃	OCH ₃	H	H	163
1575	c-Bu	H	CH ₃	H	NMe ₂	Cl	H	H	
1576	c-Bu	H	CH ₃	H	NMe ₂	S-Me	H	H	
1577	c-Bu	H	CH ₃	H	CH ₃	F	H	H	
1578	c-Bu	H	H	H	Cl	H	Cl	H	Resin
1579	c-Pen	H	CH ₃	H	NMe ₂	Cl	H	H	
1580	c-Pen	H	CH ₃	H	NMe ₂	S-Me	H	H	Resin
1581	c-Pen	H	CH ₃	H	CH ₃	F	H	H	
1582	c-Hex	H	CH ₃	H	NMe ₂	Cl	H	H	
1583	c-Hex	H	CH ₃	H	NMe ₂	S-Me	H	H	Resin
1584	c-Hex	H	CH ₃	H	CH ₃	F	H	H	
1585	CHMe- Ph(4-OH)	H	CH ₃	H	CH ₃	OCH ₃	H	H	Resin
1586	t-Bu	H	CH ₃	H	CH ₃	OCH ₃	H	H	Resin
1587	t-Bu	H	CH ₃	H	OCH ₃	OCH ₃	H	H	Oil

No.	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1588	1-Me-c-Pr	H	CH ₂ O-(3,5-Me ₂ -Ph)	H	Cl	F	H	H	128
1589	n-Pen	H	CH ₃	H	OCH ₃	OCH ₃	H	H	Resin
1590	Bzl	H	CH ₃	H	OCH ₃	OCH ₃	H	H	Resin

Table 10 below refers to the formula (I)



No.	A	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1591	NH ₂	CH ₃	CH ₃	CH ₃	H	SMe	H	CH ₃	H	
1592	NH ₂	CH ₃	Ac	CH ₃	H	SMe	H	CH ₃	H	
1593	NH ₂	CH ₃	SO ₂ Me	CH ₃	H	SMe	H	CH ₃	H	
1594	NH ₂	CH ₃	c-Pr	CH ₃	H	SMe	H	CH ₃	H	
1595	NHAc	CH ₃	H	CH ₃	H	SMe	H	CH ₃	H	Resin
1596	NHAc	CH ₃	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1597	NHAc	MeCHF	H	CH ₃	H	OMe	Br	H	H	Resin
1598	NHAc	MeCHF	H	CH ₃	H	Me	Br	H	H	Resin
1599	NHAc	MeCHF	H	CH ₃	H	NO ₂	Br	H	H	Resin
1600	NHAc	MeCHF	H	CH ₃	H	NH ₂	Br	H	H	Resin
1601	NHAc	MeCHF	H	CH ₃	H	NO ₂	Cl	H	H	Resin

No.	A	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1602	NHAc	MeCHF	H	CH ₃	H	NH ₂	Cl	H	H	Resin
1603	NHAc	MeCHF	H	CH ₃	H	OMe	F	H	H	Resin
1604	NHAc	MeCHF	H	CH ₃	H	NO ₂	F	H	H	Resin
1605	NHAc	MeCHF	H	CH ₃	H	NH ₂	F	H	H	Resin
1606	NHAc	MeCHF	H	CH ₃	OMe	H	F	H	H	Resin
1607	NHAc	MeCHF	H	CH ₃	F	H	F	H	H	Resin
1608	NHAc	MeCHF	H	CH ₃	F	H	H	H	F	Resin
1609	NHAc	MeCHF	H	CH ₃	H	CH ₃	F	H	H	Resin
1610	NHAc	MeCHF	H	CH ₃	H	F	F	H	H	Resin
1611	NHAc	MeCHF	H	CH ₃	H	F	H	F	H	Resin
1612	NHAc	EtCHF	H	CH ₃	H	OMe	Br	H	H	Resin
1613	NHAc	EtCHF	H	CH ₃	H	Me	Br	H	H	Resin
1614	NHAc	EtCHF	H	CH ₃	H	NO ₂	Br	H	H	Resin
1615	NHAc	EtCHF	H	CH ₃	H	NH ₂	Br	H	H	Resin
1616	NHAc	EtCHF	H	CH ₃	H	NO ₂	Cl	H	H	Resin
1617	NHAc	EtCHF	H	CH ₃	H	NH ₂	Cl	H	H	Resin
1618	NHAc	EtCHF	H	CH ₃	H	OMe	F	H	H	Resin
1619	NHAc	EtCHF	H	CH ₃	H	NO ₂	F	H	H	Resin
1620	NHAc	EtCHF	H	CH ₃	H	NH ₂	F	H	H	Resin
1621	NHAc	EtCHF	H	CH ₃	OMe	H	F	H	H	Resin
1622	NHAc	EtCHF	H	CH ₃	F	H	F	H	H	Resin
1623	NHAc	EtCHF	H	CH ₃	F	H	H	H	F	Resin
1624	NHAc	EtCHF	H	CH ₃	H	CH ₃	F	H	H	Resin
1625	NHAc	EtCHF	H	CH ₃	H	F	F	H	H	Resin
1626	NHAc	EtCHF	H	CH ₃	H	F	H	F	H	Resin
1627	H ₂ NCONH	MeCHF	H	CH ₃	H	OMe	Br	H	H	Resin

No.	A	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1628	H ₂ NCONH	MeCHF	H	CH ₃	H	Me	Br	H	H	Resin
1629	H ₂ NCONH	MeCHF	H	CH ₃	H	NO ₂	Br	H	H	Resin
1630	H ₂ NCONH	MeCHF	H	CH ₃	H	NH ₂	Br	H	H	Resin
1631	H ₂ NCONH	MeCHF	H	CH ₃	H	NO ₂	Cl	H	H	Resin
1632	H ₂ NCONH	MeCHF	H	CH ₃	H	NH ₂	Cl	H	H	Resin
1633	H ₂ NCONH	MeCHF	H	CH ₃	H	OMe	F	H	H	Resin
1634	H ₂ NCONH	MeCHF	H	CH ₃	H	NO ₂	F	H	H	Resin
1635	H ₂ NCONH	MeCHF	H	CH ₃	H	NH ₂	F	H	H	Resin
1636	H ₂ NCONH	MeCHF	H	CH ₃	OMe	H	F	H	H	Resin
1637	H ₂ NCONH	MeCHF	H	CH ₃	F	H	F	H	H	Resin
1638	H ₂ NCONH	MeCHF	H	CH ₃	F	H	H	H	F	Resin
1639	H ₂ NCONH	MeCHF	H	CH ₃	H	CH ₃	F	H	H	Resin
1640	H ₂ NCONH	MeCHF	H	CH ₃	H	F	F	H	H	Resin
1641	H ₂ NCONH	MeCHF	H	CH ₃	H	F	H	F	H	Resin
1642	H ₂ NCONH	EtCHF	H	CH ₃	H	OMe	Br	H	H	Resin
1643	H ₂ NCONH	EtCHF	H	CH ₃	H	Me	Br	H	H	Resin
1644	H ₂ NCONH	EtCHF	H	CH ₃	H	NO ₂	Br	H	H	Resin
1645	H ₂ NCONH	EtCHF	H	CH ₃	H	NH ₂	Br	H	H	Resin
1646	H ₂ NCONH	EtCHF	H	CH ₃	H	NO ₂	Cl	H	H	Resin
1647	H ₂ NCONH	EtCHF	H	CH ₃	H	NH ₂	Cl	H	H	Resin
1648	H ₂ NCONH	EtCHF	H	CH ₃	H	OMe	F	H	H	Resin
1649	H ₂ NCONH	EtCHF	H	CH ₃	H	NO ₂	F	H	H	Resin
1650	H ₂ NCONH	EtCHF	H	CH ₃	H	NH ₂	F	H	H	Resin
1651	H ₂ NCONH	EtCHF	H	CH ₃	OMe	H	F	H	H	Resin
1652	H ₂ NCONH	EtCHF	H	CH ₃	F	H	F	H	H	Resin
1653	H ₂ NCONH	EtCHF	H	CH ₃	F	H	H	H	F	Resin

No.	A	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1654	H ₂ NCONH	EtCHF	H	CH ₃	H	CH ₃	F	H	H	Resin
1655	H ₂ NCONH	EtCHF	H	CH ₃	H	F	F	H	H	Resin
1656	H ₂ NCONH	EtCHF	H	CH ₃	H	F	H	F	H	Resin
1657	H ₂ NCSNH	MeCHF	H	CH ₃	H	OMe	Br	H	H	Resin
1658	H ₂ NCSNH	MeCHF	H	CH ₃	H	Me	Br	H	H	Resin
1659	H ₂ NCSNH	MeCHF	H	CH ₃	H	NO ₂	Br	H	H	Resin
1660	H ₂ NCSNH	MeCHF	H	CH ₃	H	NH ₂	Br	H	H	Resin
1661	H ₂ NCSNH	MeCHF	H	CH ₃	H	NO ₂	Cl	H	H	Resin
1662	H ₂ NCSNH	MeCHF	H	CH ₃	H	NH ₂	Cl	H	H	Resin
1663	H ₂ NCSNH	MeCHF	H	CH ₃	H	OMe	F	H	H	Resin
1664	H ₂ NCSNH	MeCHF	H	CH ₃	H	NO ₂	F	H	H	Resin
1665	H ₂ NCSNH	MeCHF	H	CH ₃	H	NH ₂	F	H	H	Resin
1666	H ₂ NCSNH	MeCHF	H	CH ₃	OMe	H	F	H	H	Resin
1667	H ₂ NCSNH	MeCHF	H	CH ₃	F	H	F	H	H	Resin
1668	H ₂ NCSNH	MeCHF	H	CH ₃	F	H	H	H	F	Resin
1669	H ₂ NCSNH	MeCHF	H	CH ₃	H	CH ₃	F	H	H	Resin
1670	H ₂ NCSNH	MeCHF	H	CH ₃	H	F	F	H	H	Resin
1671	H ₂ NCSNH	MeCHF	H	CH ₃	H	F	H	F	H	Resin
1672	H ₂ NCSNH	EtCHF	H	CH ₃	H	OMe	Br	H	H	Resin
1673	H ₂ NCSNH	EtCHF	H	CH ₃	H	Me	Br	H	H	Resin
1674	H ₂ NCSNH	EtCHF	H	CH ₃	H	NO ₂	Br	H	H	Resin
1675	H ₂ NCSNH	EtCHF	H	CH ₃	H	NH ₂	Br	H	H	Resin
1676	H ₂ NCSNH	EtCHF	H	CH ₃	H	NO ₂	Cl	H	H	Resin
1677	H ₂ NCSNH	EtCHF	H	CH ₃	H	NH ₂	Cl	H	H	Resin
1678	H ₂ NCSNH	EtCHF	H	CH ₃	H	OMe	F	H	H	Resin
1679	H ₂ NCSNH	EtCHF	H	CH ₃	H	NO ₂	F	H	H	Resin

No.	A	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1680	H ₂ NCSNH	EtCHF	H	CH ₃	H	NH ₂	F	H	H	Resin
1681	H ₂ NCSNH	EtCHF	H	CH ₃	OMe	H	F	H	H	Resin
1682	H ₂ NCSNH	EtCHF	H	CH ₃	F	H	F	H	H	Resin
1683	H ₂ NCSNH	EtCHF	H	CH ₃	F	H	H	H	F	Resin
1684	H ₂ NCSNH	EtCHF	H	CH ₃	H	CH ₃	F	H	H	Resin
1685	H ₂ NCSNH	EtCHF	H	CH ₃	H	F	F	H	H	Resin
1686	H ₂ NCSNH	EtCHF	H	CH ₃	H	F	H	F	H	Resin
1687	NH-SO ₂ Me	CH ₃	H	CH ₃	H	SMe	H	CH ₃	H	Resin
1688	NH-SO ₂ Me	CH ₃	H	CH ₃	CF ₃	H	SMe	H	H	Resin
1689	N=C(Me)OMe	CH ₃	H	CH ₃	CF ₃	H	SMe	H	H	Resin
1690	N=C(Me)OEt	CH ₃	H	CH ₃	CF ₃	H	SMe	H	H	Resin
1691	N=C(Me)SMe	CH ₃	H	CH ₃	CF ₃	H	SMe	H	H	Resin
1692	N=CMe ₂	CH ₃	H	CH ₃	CF ₃	H	SMe	H	H	Resin
1693	NH ₂	C ₂ H ₅	CH ₃	CH ₃	H	SMe	H	CH ₃	H	
1694	NH ₂	C ₂ H ₅	Ac	CH ₃	H	SMe	H	CH ₃	H	
1695	NH ₂	C ₂ H ₅	SO ₂ Me	CH ₃	H	SMe	H	CH ₃	H	
1696	NH ₂	C ₂ H ₅	c-Pr	CH ₃	H	SMe	H	CH ₃	H	Resin
1697	NHCOCH ₃	C ₂ H ₅	H	CH ₃	H	SMe	H	CH ₃	H	
1698	NHCOCH ₃	C ₂ H ₅	H	CH ₃	CF ₃	H	SCH ₃	H	H	
1699	NHSO ₂ CH ₃	C ₂ H ₅	H	CH ₃	H	SMe	H	CH ₃	H	Resin
1700	NHSO ₂ CH ₃	C ₂ H ₅	H	CH ₃	CF ₃	H	SMe	H	H	
1701	N=C(Me)OMe	C ₂ H ₅	H	CH ₃	CF ₃	H	SMe	H	H	Resin
1702	N=C(Me)OEt	C ₂ H ₅	H	CH ₃	CF ₃	H	SMe	H	H	Resin
1703	N=C(Me)SMe	C ₂ H ₅	H	CH ₃	CF ₃	H	SMe	H	H	Resin
1704	N=C(CH ₃) ₂	C ₂ H ₅	H	CH ₃	CF ₃	H	SMe	H	H	Resin
1705	NH ₂	i-Pr	CH ₃	CH ₃	H	SMe	H	CH ₃	H	

No.	A	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1706	NH ₂	i-Pr	Ac	CH ₃	H	SMe	H	CH ₃	H	
1707	NH ₂	i-Pr	SO ₂ Me	CH ₃	H	SMe	H	CH ₃	H	
1708	NH ₂	i-Pr	c-Pr	CH ₃	H	SMe	H	CH ₃	H	Resin
1709	NHCOCH ₃	i-Pr	H	CH ₃	H	SMe	H	CH ₃	H	Resin
1710	NHCOCH ₃	i-Pr	H	CH ₃	CF ₃	H	SMe	H	H	Resin
1711	NHSO ₂ CH ₃	i-Pr	H	CH ₃	H	SMe	H	CH ₃	H	Resin
1712	NHSO ₂ CH ₃	i-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1713	N=C(Me)OMe	i-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1714	N=C(Me)OEt	i-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1715	N=C(Me)SMe	i-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1716	N=C(CH ₃) ₂	i-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1717	NH ₂	CHFMe	CH ₃	CH ₃	H	SMe	H	CH ₃	H	
1718	NH ₂	CHFMe	Ac	CH ₃	H	SMe	H	CH ₃	H	
1719	NH ₂	CHFMe	SO ₂ Me	CH ₃	H	SMe	H	CH ₃	H	
1720	NH ₂	CHFMe	c-Pr	CH ₃	H	SMe	H	CH ₃	H	Resin
1721	NHCOCH ₃	CHFMe	H	CH ₃	H	SMe	H	CH ₃	H	
1722	NHCOCH ₃	CHFMe	H	CH ₃	CF ₃	H	SMe	H	H	
1723	NHSO ₂ CH ₃	CHFMe	H	CH ₃	H	SMe	H	CH ₃	H	
1724	NHSO ₂ CH ₃	CHFMe	H	CH ₃	CF ₃	H	SMe	H	H	
1725	N=C(Me)OMe	CHFMe	H	CH ₃	CF ₃	H	SMe	H	H	Resin
1726	N=C(Me)OEt	CHFMe	H	CH ₃	CF ₃	H	SMe	H	H	Resin
1727	N=C(Me)SMe	CHFMe	H	CH ₃	CF ₃	H	SMe	H	H	Resin
1728	N=C(CH ₃) ₂	CHFMe	H	CH ₃	CF ₃	H	SMe	H	H	Resin
1729	NH ₂	CHFEt	CH ₃	CH ₃	H	SMe	H	CH ₃	H	
1730	NH ₂	CHFEt	Ac	CH ₃	H	SMe	H	CH ₃	H	
1731	NH ₂	CHFEt	SO ₂ Me	CH ₃	H	SMe	H	CH ₃	H	

No.	A	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1732	NH ₂	CHFEt	c-Pr	CH ₃	H	SMe	H	CH ₃	H	Resin
1733	NHCOCH ₃	CHFEt	H	CH ₃	H	SMe	H	CH ₃	H	
1734	NHCOCH ₃	CHFEt	H	CH ₃	CF ₃	H	SCH ₃	H	H	
1735	NHSO ₂ CH ₃	CHFEt	H	CH ₃	H	SCH ₃	H	CH ₃	H	
1736	NHSO ₂ CH ₃	CHFEt	H	CH ₃	CF ₃	H	SCH ₃	H	H	
1737	N=C(Me)OMe	CHFEt	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1738	N=C(Me)OEt	CHFEt	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1739	N=C(Me)SMe	CHFEt	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1740	N=C(CH ₃) ₂	CHFEt	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1741	NH ₂	CFMe ₂	CH ₃	CH ₃	H	SMe	H	CH ₃	H	
1742	NH ₂	CFMe ₂	Ac	CH ₃	H	SMe	H	CH ₃	H	
1743	NH ₂	CFMe ₂	SO ₂ Me	CH ₃	H	SMe	H	CH ₃	H	
1744	NH ₂	CFMe ₂	c-Pr	CH ₃	H	SMe	H	CH ₃	H	
1745	NHCOCH ₃	CFMe ₂	H	CH ₃	H	SMe	H	CH ₃	H	
1746	NHCOCH ₃	CFMe ₂	H	CH ₃	CF ₃	H	SCH ₃	H	H	
1747	NHSO ₂ CH ₃	CFMe ₂	H	CH ₃	H	SCH ₃	H	CH ₃	H	
1748	NHSO ₂ CH ₃	CFMe ₂	H	CH ₃	CF ₃	H	SCH ₃	H	H	
1749	N=C(Me)OMe	CFMe ₂	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1750	N=C(Me)OEt	CFMe ₂	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1751	N=C(Me)SMe	CFMe ₂	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1752	N=C(CH ₃) ₂	CFMe ₂	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1753	NH ₂	c-Pr	CH ₃	CH ₃	H	SMe	H	CH ₃	H	
1754	NH ₂	c-Pr	Ac	CH ₃	H	SMe	H	CH ₃	H	
1755	NH ₂	c-Pr	SO ₂ Me	CH ₃	H	SMe	H	CH ₃	H	
1756	NH ₂	c-Pr	c-Pr	CH ₃	H	SMe	H	CH ₃	H	Resin
1757	NHCOCH ₃	c-Pr	H	CH ₃	H	SMe	H	CH ₃	H	Resin

No.	A	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1758	NHCOCH ₃	c-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1759	NHSO ₂ CH ₃	c-Pr	H	CH ₃	H	SMe	H	CH ₃	H	Resin
1760	NHSO ₂ CH ₃	c-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1761	N=C(Me)OMe	c-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1762	N=C(Me)OEt	c-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1763	N=C(Me)SMe	c-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1764	N=C(CH ₃) ₂	c-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	Resin
1765	NH ₂	1-F-c-Pr	CH ₃	CH ₃	H	SMe	H	CH ₃	H	
1766	NH ₂	1-F-c-Pr	Ac	CH ₃	H	SMe	H	CH ₃	H	
1767	NH ₂	1-F-c-Pr	SO ₂ Me	CH ₃	H	SMe	H	CH ₃	H	
1768	NH ₂	1-F-c-Pr	c-Pr	CH ₃	H	SMe	H	CH ₃	H	
1769	NHCOCH ₃	1-F-c-Pr	H	CH ₃	H	SMe	H	CH ₃	H	
1770	NHCOCH ₃	1-F-c-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	
1771	NHSO ₂ CH ₃	1-F-c-Pr	H	CH ₃	H	SMe	H	CH ₃	H	
1772	NHSO ₂ CH ₃	1-F-c-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	
1773	N=C(Me)OMe	1-F-c-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	
1774	N=C(Me)OEt	1-F-c-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	
1775	N=C(Me)SMe	1-F-c-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	
1776	N=C(CH ₃) ₂	1-F-c-Pr	H	CH ₃	CF ₃	H	SCH ₃	H	H	
1777	CH ₃	CCl ₃	H	CH ₃	H	Br	F	H	H	Oil
1778	CH ₃	CCl ₃	H	CH ₃	H	CH ₃	Cl	H	H	Oil
1779	CH ₃	CCl ₃	H	CH ₃	F	H	F	H	H	Oil
1780	Et	CCl ₃	H	CH ₃	H	Br	F	H	H	
1781	Et	CCl ₃	H	CH ₃	H	CH ₃	Cl	H	H	
1782	Et	CCl ₃	H	CH ₃	F	H	F	H	H	
1783	CH ₃	CFMe ₂	H	CH ₃	H	Br	F	H	H	

No.	A	R ¹	R ²	R ³	R ⁴	R ⁵	R ⁶	R ⁷	R ⁸	Phys. data
1784	CH ₃	CFMe ₂	H	CH ₃	H	CH ₃	Cl	H	H	
1785	CH ₃	CFMe ₂	H	CH ₃	F	H	F	H	H	
1786	Et	CFMe ₂	H	CH ₃	H	Br	F	H	H	
1787	Et	CFMe ₂	H	CH ₃	H	CH ₃	Cl	H	H	
1788	Et	CFMe ₂	H	CH ₃	F	H	F	H	H	
1789	CH ₃	c-Pr	H	CH ₃	H	Br	F	H	H	
1790	CH ₃	c-Pr	H	CH ₃	H	CH ₃	Cl	H	H	
1791	CH ₃	c-Pr	H	CH ₃	F	H	F	H	H	
1792	i-Pr	CCl ₃	H	CH ₃	H	Br	F	H	H	
1793	i-Pr	CCl ₃	H	CH ₃	H	CH ₃	Cl	H	H	
1794	i-Pr	CCl ₃	H	CH ₃	F	H	F	H	H	
1795	NHCOCH ₃	CCl ₃	H	CH ₃	H	Br	F	H	H	
1796	NHCOCH ₃	CCl ₃	H	CH ₃	H	Me	Cl	H	H	
1797	NHCOCH ₃	CCl ₃	H	CH ₃	F	H	F	H	H	
1798	NHSO ₂ Me	CCl ₃	H	CH ₃	H	Br	F	H	H	
1799	NHSO ₂ Me	CCl ₃	H	CH ₃	H	Me	Cl	H	H	
1800	NHSO ₂ Me	CCl ₃	H	CH ₃	F	H	F	H	H	

B. Formulation examples

- 5 a) A dust is obtained by mixing 10 parts by weight of a compound of the formula (I) and 90 parts by weight of talc as inert substance and comminuting the mixture in a hammer mill.
- 10 b) A wettable powder which is readily dispersible in water is obtained by mixing 25 parts by weight of a compound of the formula (I), 64 parts by weight of kaolin-containing quartz as inert substance, 10 parts by weight of potassium lignosulfonate and 1 part by weight of sodium oleoylmethyltaurinate as wetter and dispersant and grinding the mixture in a pinned-disk mill.
- 15 c) A dispersion concentrate which is readily dispersible in water is obtained by mixing 20 parts by weight of a compound of the formula (I) with 6 parts by weight of alkylphenol polyglycol ether (®Triton X 207), 3 parts by weight of isotridecanol polyglycol ether (8 EO) and 71 parts by weight of paraffinic mineral oil (boiling range, for example, approx. 255 to above 277°C) and grinding the mixture in a ball mill to a fineness of below 5 microns.
- 20 d) An emulsifiable concentrate is obtained from 15 parts by weight of a compound of the formula (I), 75 parts by weight of cyclohexanone as solvent and 10 parts by weight of ethoxylated nonylphenol as emulsifier.
- 25 e) Water-dispersible granules are obtained by mixing 75 parts by weight of a compound of the formula (I),
- | | | |
|----|---|----------------------------|
| 10 | " | of calcium lignosulfonate, |
| 5 | " | of sodium lauryl sulfate, |
| 3 | " | of polyvinyl alcohol and |
| 7 | " | of kaolin, |
- 30 grinding the mixture in a pinned-disk mill and granulating the powder in a fluidized bed by spraying on water as granulation liquid.
- f) Water-dispersible granules are also obtained by homogenizing and precomminuting, on a colloid mill,

25 parts by weight of a compound of the formula (I),
 5 " of sodium 2,2'-dinaphthylmethane-6,6'-disulfonate,
 2 " of sodium oleoylmethyltaurate,
 1 part by weight of polyvinyl alcohol,
 5 17 parts by weight of calcium carbonate and
 50 " of water,
 subsequently grinding the mixture in a bead mill and atomizing and drying the
 resulting suspension in a spray tower by means of a single-substance nozzle.

10 C. Biological examples

1. Pre-emergence effect on weeds

Seeds or rhizome pieces of mono and dicotyledonous weed plants are placed in sandy
 15 lime soil in plastic pots and covered with soil. The compounds according to the
 invention which are formulated in the form of wettable powders or emulsion
 concentrates are then applied to the soil cover in the form of aqueous suspensions or
 emulsions at an application rate of 600 to 800 l of water/ha (converted), in various
 dosages.

20 After the treatment, the pots are placed in a greenhouse and kept under good growth
 conditions for the weeds. After the test plants had emerged, the damage to the plants
 or the negative effect on the emergence was visually scored after a test period of 3 to
 4 weeks by comparison with untreated controls. As shown by the test results, the
 25 compounds according to the invention have good herbicidal pre-emergence activity
 against a broad spectrum of weed grasses and broad-leaved weeds. For example, in
 the test the compounds of Example Nos. 4, 6, 12, 13, 15, 16, 17, 18, 46, 48, 49, 51,
 67, 68, 69, 71-103, 124, 127, 131, 135-139, 145, 146, 158-174, 209, 215, 216, 218,
 219, 220, 221, 242, 249, 251, 252, 254, 270, 272, 274-302, 334, 335, 336, 336, 344,
 30 352, 356-371, 403, 407, 413, 414, 416-419, 440, 447, 449, 450, 452, 468, 470, 472-
 500, 524, 532, 542, 543, 544, 547, 551-567, 598, 600, 602-606, 609, 610, 612-615,
 636, 643, 645, 646, 648, 664, 665, 666, 668-696, 714, 717, 718, 738, 742, 746-762,
 793, 795, 830, 839, 840, 842, 859, 860, 862-890, 908, 911, 928, 936, 940-956, 987,
 989, 991, 997, 998, 1000-1003, 1024, 1031, 1033, 1034, 1036, 1052-1054, 1056-

1084, 1102, 1105, 1109, 1116, 1117, 1132, 1136-1152, 1182, 1193, 1194, 1196-1199, 1220, 1252-1280, 1319-1323, 1326, 1331-1347, 1388, 1389, 1390-1393, 1414, 1446-1474, 1513-1517, 1520, 1524-1540, 1570, 1571, 1573, 1574, 1578, 1580, 1583, 1585-1590, 1595-1692, 1696, 1699, 1701-1704, 1708-1715, 1720, 1725-1728, 1732, 1737-1740, 1749-1752, 1756-1764, 1777, 1778 and 1779 (see Tables 1 to 10) have very good herbicidal activity pre-emergence against harmful plants from the group consisting of *Alopecurus* spp., *Apera* spp., *Poa* spp., *Echinochloa* spp., *Setaria* spp., *Digitaria* spp., *Chenopodium* spp., *Matricaria* spp., *Veronica* spp., *Viola* spp., *Stellaria* spp., *Amaranthus* spp. or *Solanum* spp. at an application rate of 0.5 kg or less of active substance per hectare.

2. Post-emergence effect on weeds

Seeds or rhizome pieces of mono- and dicotyledonous weeds are placed in sandy lime soil in plastic pots, covered with soil and grown in a greenhouse under good growth conditions. Three weeks after sowing, the test plants are treated at the three-leaf stage. The compounds according to the invention, formulated as wettable powders or emulsion concentrates, are sprayed, at various dosages, onto the green parts of the plants at an application rate of 600 to 800 l of water/ha (converted). After the test plants had remained in the greenhouse for about 3 to 4 weeks under optimum growth conditions, the effect of the preparations is scored visually by comparison with untreated controls. The agents according to the invention also have good herbicidal activity post-emergence against a broad spectrum of economically important weed grasses and broad-leaved weeds. For example, in the test the compounds of Example Nos. 4, 6, 12, 13, 15, 16, 17, 18, 46, 48, 49, 51, 67, 68, 69, 71-103, 124, 127, 131, 135-139, 145, 146, 158-174, 209, 215, 216, 218, 219, 220, 221, 242, 249, 251, 252, 254, 270, 272, 274-302, 334, 335, 336, 336, 344, 352, 356-371, 403, 407, 4013, 414, 416-419, 440, 447, 449, 450, 452, 468, 470, 472-500, 524, 532, 542, 543, 544, 547, 551-567, 598, 600, 602-606, 609, 610, 612-615, 636, 643, 645, 646, 648, 664, 665, 666, 668-696, 714, 717, 718, 738, 742, 746-762, 793, 795, 830, 839, 840, 842, 859, 860, 862-890, 908, 911, 928, 936, 940-956, 987, 989, 991, 997, 998, 1000-1003, 1024, 1031, 1033, 1034, 1036, 1052-1054, 1056-1084, 1102, 1105, 1109, 1116, 1117, 1132, 1136-1152, 1182, 1193, 1194, 1196-1199, 1220, 1252-1280, 1319-1323, 1326, 1331-1347, 1388, 1389, 1390-1393, 1414, 1446-1474, 1513-1517, 1520, 1524-1540,

1570, 1571, 1573, 1574, 1578, 1580, 1583, 1585-1590, 1595-1692, 1696, 1699, 1701-1704, 1708-1715, 1720, 1725-1728, 1732, 1737-1740, 1749-1752, 1756-1764, 1777, 1778 and 1779 (see Tables 1 to 10) have very good herbicidal activity post-emergence against harmful plants from the group consisting of *Chenopodium* spp., *Papaver* spp.,
 5 *Polygonum* spp., *Veronica* spp. or *Viola* spp. at an application rate of 0.5 kg or less of active substance per hectare.

3. Action on harmful plants in rice

10 Transplanted and sown rice and also typical rice weeds (gramineous and broad-leafed) are cultivated in closed plastic pots in a greenhouse to the three-leaf stage (*Echinochloa crus-galli* 1.5-leaf) under paddy rice conditions (height of water: 2-3 cm). This is followed by treatment with the novel compounds. For this purpose, the formulated active compounds are suspended, dissolved or emulsified in water and
 15 applied by pouring them into the dammed water around the test plants in different dosages.

After this treatment, the test plants are set up in the greenhouse under optimum growth conditions and are maintained in this way throughout the test period.

20 About three weeks after application, evaluation is made by visual scoring of the damage to the plants by comparison with untreated controls. The compounds according to the invention show very good herbicidal activity against harmful plants. For example, the compounds of Example Nos. 4, 6, 12, 13, 15, 16, 17, 18, 46, 48, 49, 51, 67, 68, 69, 71-103, 124, 127, 131, 135-139, 145, 146, 158-174, 209, 215, 216,
 25 218, 219, 220, 221, 242, 249, 251, 252, 254, 270, 272, 274-302, 334, 335, 336, 336, 344, 352, 356-371, 403, 407, 4013, 414, 416-419, 440, 447, 449, 450, 452, 468, 470, 472-500, 524, 532, 542, 543, 544, 547, 551-567, 598, 600, 602-606, 609, 610, 612-615, 636, 643, 645, 646, 648, 664, 665, 666, 668-696, 714, 717, 718, 738, 742, 746-762, 793, 795, 830, 839, 840, 842, 859, 860, 862-890, 908, 911, 928, 936, 940-956,
 30 987, 989, 991, 997, 998, 1000-1003, 1024, 1031, 1033, 1034, 1036, 1052-1054, 1056-1084, 1102, 1105, 1109, 1116, 1117, 1132, 1136-1152, 1182, 1193, 1194, 1196-1199, 1220, 1252-1280, 1319-1323, 1326, 1331-1347, 1388, 1389, 1390-1393, 1414, 1446-1474, 1513-1517, 1520, 1524-1540, 1570, 1571, 1573, 1574, 1578, 1580, 1583, 1585-1590, 1595-1692, 1696, 1699, 1701-1704, 1708-1715, 1720, 1725-1728, 1732, 1737-

1740, 1749-1752, 1756-1764, 1777, 1778 and 1779 (see Tables 1 to 10) show very good herbicidal activity in the test against harmful plants which are typical for rice crops, for example *Cyperus* spp., *Echinochloa* spp., *Digitaria* spp., *Sagitaria* spp. and *Scirpus* spp.

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4. Tolerance by crop plants

In further greenhouse experiments, seeds of a substantial number of crop plants and weeds are placed in sandy lime soil and covered with soil. Some of the pots are
10 treated immediately as described under Section 1, and the remaining pots are placed in the greenhouse until the plants have developed two to three true leaves and then sprayed with various dosages of the substances of the formula (I) according to the invention, as described under Section 2. Visual scoring four to five weeks after the application and after the plants have been in the greenhouse reveals that the
15 compounds according to the invention left dicotyledonous crops such as soya, cotton, oilseed rape, sugar beet and potatoes unharmed even when high dosages of active ingredient were used by the pre- and post-emergence method. Moreover, some substances also spare Gramineae crops such as barley, wheat, rye, sorghum, corn or rice. Some of the compounds of the formula (I) have high selectivity, and they are
20 therefore suitable for controlling undesirable vegetation in agricultural crops.

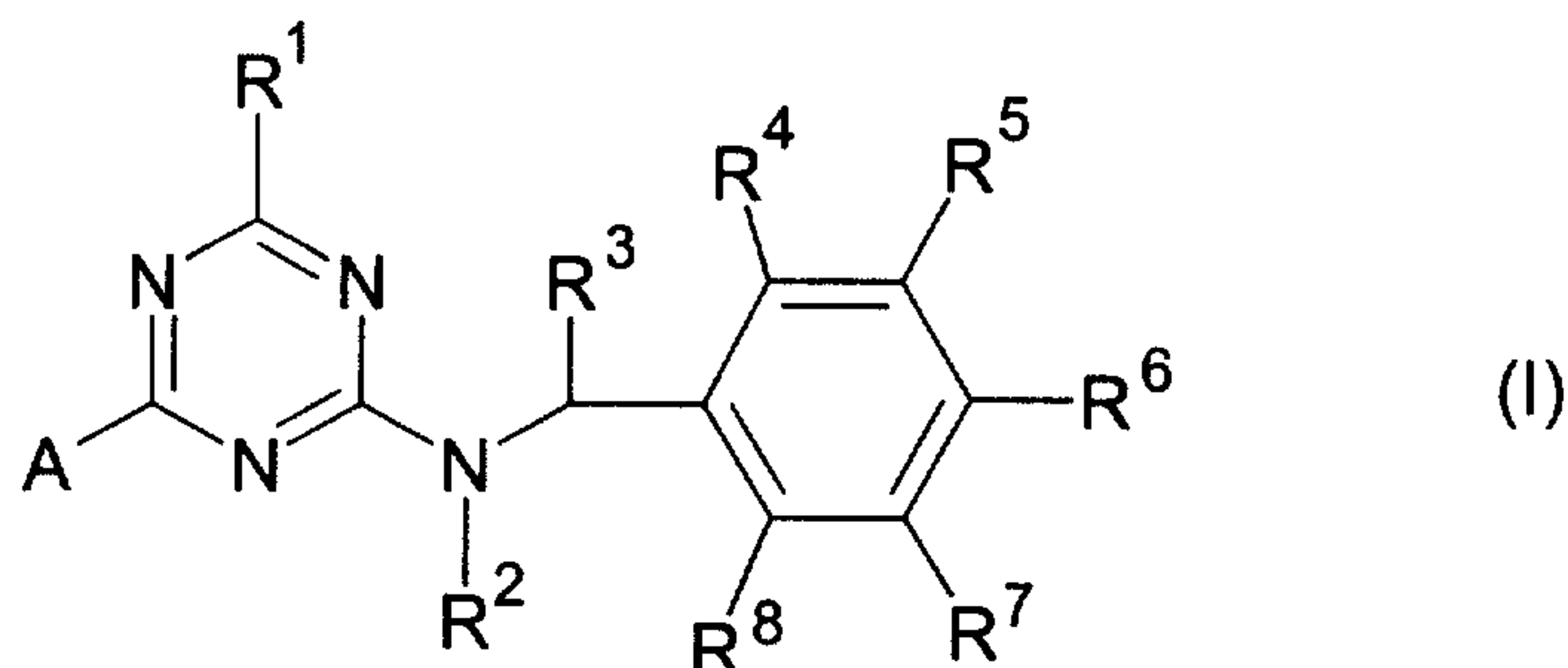
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Patent claims:

1. A compound of the formula (I) or a salt thereof



in which

A is a group of the formula NR^aR^b , in which

R^a and R^b , independently of one another, are hydrogen, formyl or else

aminocarbonyl, amino(thiocarbonyl), $(\text{C}_1\text{-C}_{10})$ alkyl, $(\text{C}_2\text{-C}_{10})$ alkenyl,

$(\text{C}_2\text{-C}_{10})$ alkynyl, $(\text{C}_1\text{-C}_{10})$ alkylsulfinyl, $(\text{C}_1\text{-C}_{10})$ alkylsulfonyl,

$(\text{C}_1\text{-C}_{10})$ alkoxy, $[(\text{C}_1\text{-C}_{10})\text{alkyl}]$ carbonyl, $[(\text{C}_1\text{-C}_{10})\text{alkoxy}]$ carbonyl,

N-mono $[(\text{C}_1\text{-C}_{10})\text{alkyl}]$ aminocarbonyl, N,N-di $[(\text{C}_1\text{-C}_{10})\text{alkyl}]$ -

aminocarbonyl, $[(\text{C}_1\text{-C}_{10})\text{alkylthio}]$ carbonyl, $[(\text{C}_1\text{-C}_{10})\text{alkyl}]$ (thiocarbonyl),

$[(\text{C}_1\text{-C}_{10})\text{alkoxy}]$ (thiocarbonyl), N-mono $[(\text{C}_1\text{-C}_{10})\text{alkyl}]$ amino-

(thiocarbonyl), N,N-di $[(\text{C}_1\text{-C}_{10})\text{alkyl}]$ amino(thiocarbonyl) or

$[(\text{C}_1\text{-C}_{10})\text{alkylthio}]$ (thiocarbonyl), where each of the 16 last-mentioned

radicals is unsubstituted or substituted, or

are $(\text{C}_3\text{-C}_6)$ cycloalkyl, $(\text{C}_5\text{-C}_6)$ cycloalkenyl, $(\text{C}_3\text{-C}_6)$ cycloalkoxy,

$(\text{C}_5\text{-C}_6)$ cycloalkenyloxy, phenyl, phenoxy, phenylamino, phenylcarbonyl,

naphthylcarbonyl, phenylsulfonyl, heterocyclyl, heterocyclyloxy,

heterocyclylamino, heterocyclylcarbonyl or heterocyclylsulfonyl, where

each of the 15 last-mentioned radicals is unsubstituted or substituted and

heterocyclyl in the radicals mentioned is in each case heterocyclyl having

3 to 9 ring atoms, 1 to 4 of which are hetero ring atoms selected from the

group consisting of N, O and S, or

one of the radicals R^a and R^b is as defined above and the other of the radicals

R^a and R^b is a group of the formula $NR'R''$, where R' and R'' ,

independently of one another, are H or (C₁-C₆)alkyl which is

unsubstituted or substituted, or R' and R'' together are straight-chain

(C₂-C₅)alkylene which is unsubstituted or substituted by one or more

radicals selected from the group consisting of (C₁-C₄)alkyl,

(C₁-C₄)alkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkyl, or

R^a and R^b together are (C₁-C₁₀)alkylidene which is unsubstituted or substituted

by one or more radicals selected from the group consisting of halogen,

cyano, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio, or

NR^aR^b together are a heterocyclyl radical which is attached to the nitrogen

atom and has 3 to 6 ring atoms and, in addition to the nitrogen atom as

hetero ring atom, optionally contains 1 to 3 further hetero ring atoms

selected from the group consisting of N, O and S, where the heterocycle

is unsubstituted or substituted,

or

A is (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, (C₃-C₆)cycloalkyl or

(C₅-C₆)cycloalkenyl, where each of the 5 last-mentioned radicals is

unsubstituted or substituted, and

20 R^1 is hydroxyl or

(C₁-C₁₀)alkyl, which is unsubstituted or substituted by one or more radicals

selected from the group consisting of halogen, hydroxyl, cyano, nitro,

thiocyanato, formyl, amino, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₂-

C₄)alkenyloxy, (C₂-C₄)haloalkenyloxy, (C₂-C₄)alkynyloxy, (C₂-

25 C₄)haloalkynyloxy, N-mono(C₁-C₄)alkylamino, N,N-di(C₁-C₄)alkylamino, (C₁-

C₄)alkylthio, (C₁-C₄)alkylsulfinyl, (C₁-C₄)haloalkylsulfinyl, (C₁-C₄)alkylsulfonyl,

(C₁-C₄)haloalkylsulfonyl, [(C₁-C₄)alkyl]carbonyl, [(C₁-C₄)haloalkyl]carbonyl,

[(C₁-C₄)alkoxy]carbonyl, (C₃-C₉)cycloalkyl, (C₅-C₆)cycloalkenyl, phenyl and heterocyclyl, where each of the 4 last-mentioned radicals is unsubstituted or substituted, or

is [(C₁-C₆)alkyl]carbonyl, [(C₁-C₆)alkoxy]carbonyl, (C₁-C₆)alkylsulfinyl or (C₁-C₄)alkylsulfonyl, where each of the 4 last-mentioned radicals is unsubstituted or substituted, or

is (C₃-C₆)cycloalkyl, which is unsubstituted or substituted, (C₅-C₆)cycloalkenyl, which is unsubstituted or substituted,

R^2 is H or formyl, (C₁-C₁₀)alkyl, (C₂-C₁₀)alkenyl, (C₂-C₁₀)alkynyl,

(C₁-C₁₀)alkylsulfinyl, (C₁-C₁₀)alkylsulfonyl, (C₁-C₁₀)alkoxy,

[(C₁-C₁₀)alkyl]carbonyl, [(C₁-C₁₀)alkoxy]carbonyl, where each of the 8 last-mentioned radicals is unsubstituted or substituted, or

is (C₃-C₆)cycloalkyl, (C₅-C₆)cycloalkenyl, (C₃-C₆)cycloalkoxy, (C₅-C₆)cycloalkenyloxy, phenyl, phenoxy, phenylamino, phenylcarbonyl,

phenylsulfonyl, heterocyclyl, heterocycliloxy, heterocyclylamino, heterocyclylcarbonyl or heterocyclylsulfonyl, where each of the 14 last-mentioned radicals is unsubstituted or substituted and heterocyclyl in the 5 last-mentioned radicals contains in each case 3 to 9 ring atoms, 1 to 4 of which are hetero ring atoms selected from the group consisting of N, O and S, or

is a group of the formula NR^cR^d , where R^c and R^d , independently of one another, are H, formyl, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl,

(C₁-C₆)alkylsulfinyl, (C₁-C₆)alkylsulfonyl, (C₁-C₆)alkoxy, [(C₁-C₆)alkyl]carbonyl or [(C₁-C₆)alkoxy]carbonyl, where each of the 8 last-mentioned groups is unsubstituted or substituted, or

R^c and R^d together are straight-chain (C₂-C₅)alkylene, which is unsubstituted or substituted by one or more radicals selected from the group consisting of (C₁-C₄)alkyl, (C₁-C₄)alkoxy, (C₁-C₄)alkoxy-(C₁-C₄)alkyl and oxo,

R^3 is halogen, CN, NO₂, SCN or a radical of the formula $-X^1-A^1$, where

X^1 is a direct bond or a divalent group of the formula $-O-$, $-S(O)_p-$, $-S(O)_p-O-$, $-O-S(O)_p-$, $-CO-$, $-O-CO-$, $-CO-O-$, $-S-CO-$, $-CO-S-$, $-S-CS-$, $-CS-S-$, $-O-CO-O-$, $-NR^O-$, $-O-NR^O-$, $-NR^O-O-$, $-NR^O-CO-$, $-CO-NR^O-$, $-O-CO-NR^O-$ or $-NR^O-CO-O-$, in which in each case p is the integer 0, 1 or 2 and R^O is hydrogen, (C_1-C_6) alkyl, (C_2-C_6) alkenyl, (C_2-C_6) alkynyl, phenyl, phenyl- (C_1-C_6) alkyl, (C_3-C_6) cycloalkyl or $[(C_1-C_6)$ alkyl]carbonyl, and

A^1 is hydrogen, (C_1-C_{10}) alkyl, (C_2-C_{10}) alkenyl, (C_2-C_{10}) alkynyl, (C_3-C_6) cycloalkyl, (C_5-C_6) cycloalkenyl, phenyl or heterocyclyl having 3 to 9 ring atoms and 1 to 4 hetero ring atoms selected from the group consisting of N, O and S, where each of the 7 last-mentioned radicals is unsubstituted or substituted,

each of the radicals R^4 , R^5 , R^6 , R^7 and R^8 , independently of one another, is halogen, nitro, cyano, thiocyanato or a radical of the formula $-X^2-A^2$, where

X^2 is a direct bond or a divalent group of the formula $-O-$, $-S(O)_q-$, $-S(O)_q-O-$, $-O-S(O)_q-$, $-S(O)_q-NR^r-$, $-NR^r-S(O)_q-$, $-CO-$, $-O-CO-$, $-CO-O-$, $-S-CO-$, $-CO-S-$, $-S-CS-$, $-CS-S-$, $-O-CO-O-$, $-NR^r-$, $-O-NR^r-$, $-NR^r-O-$, $-NR^r-CO-$, $-CO-NR^r-$, $-O-CO-NR^r-$ or $-NR^r-CO-O-$, in which in each case q is the integer 0, 1 or 2 and R^r is hydrogen, amino, substituted amino, (C_1-C_6) alkyl, (C_2-C_6) alkenyl, (C_2-C_6) alkynyl, phenyl, phenyl- (C_1-C_6) alkyl, phenylcarbonyl, (C_3-C_6) cycloalkyl, (C_5-C_6) cycloalkenyl, $[(C_1-C_6)$ alkyl]carbonyl, (C_1-C_6) alkylsulfonyl, (C_1-C_6) alkylsulfinyl, phenylsulfonyl or phenylsulfinyl, where each of the 13 last-mentioned radicals is unsubstituted or substituted, and

A^2 is hydrogen, (C_1-C_{10}) alkyl, (C_2-C_{10}) alkenyl, (C_2-C_{10}) alkynyl, (C_3-C_6) cycloalkyl, (C_5-C_6) cycloalkenyl, phenyl or heterocyclyl, where each of the 7 last-mentioned radicals is unsubstituted or substituted, or

two adjacent radicals from the group consisting of R^4 , R^5 , R^6 , R^7 and R^8 together with the carbon atoms of the phenyl ring to which they are attached form a fused ring having 4 to 6 ring atoms which is carbocyclic or contains 1 to 3 hetero ring atoms from the group consisting of N, O and S and which is unsubstituted or substituted by one or more radicals selected from the group consisting of (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, [(C₁-C₆)alkyl]carbonyl, [(C₁-C₆)alkoxy]carbonyl, (C₁-C₆)alkylsulfonyl and (C₁-C₆)alkylsulfinyl,

where at least two radicals selected from the group consisting of R^4 , R^5 , R^6 , R^7 and R^8 are different from hydrogen, except for compounds of the formula (I) and salts thereof in which

A is NH₂,

R^1 is a radical of the formula -C(CH₃)(X*)(R*), in which X* = halogen and R* = H, CH₃ or C₂H₅,

R^2 is H,

R^3 is CH₃,

R^5 is CH₃ or OCH₃,

R^6 is CH₃ or OCH₃ and

R^4 , R^7 and R^8 are each H.

2. A compound of the formula (I) or a salt thereof as claimed in claim 1, wherein

A is a group of the formula NR^aR^b , in which

R^a and R^b , independently of one another, are hydrogen, formyl, aminocarbonyl,

amino(thiocarbonyl), (C₁-C₁₀)alkyl, (C₂-C₁₀)alkenyl, (C₂-C₁₀)alkynyl,

(C₁-C₁₀)alkylsulfinyl, (C₁-C₁₀)alkylsulfonyl, (C₁-C₁₀)alkoxy,

[(C₁-C₁₀)alkyl]carbonyl, [(C₁-C₁₀)alkoxy]carbonyl,

N-mono[(C₁-C₁₀)alkyl]aminocarbonyl, N,N-di[(C₁-C₁₀)alkyl]aminocarbonyl, [(C₁-C₁₀)alkylthio]carbonyl, [(C₁-C₁₀)alkyl](thiocarbonyl), [(C₁-C₁₀)alkoxy](thiocarbonyl), N-mono[(C₁-C₁₀)alkyl]amino(thiocarbonyl), N,N-

5 di[(C₁-C₁₀)alkyl]amino(thiocarbonyl) or [(C₁-C₁₀)alkylthio](thiocarbonyl), where each of the 16 last-mentioned radicals is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)hydroxyalkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, or

10 are (C₃-C₆)cycloalkyl, (C₅-C₆)cycloalkenyl, (C₃-C₆)cycloalkoxy, (C₅-C₆)cycloalkenyloxy, phenyl, phenoxy, phenylamino, phenylcarbonyl, naphthylcarbonyl, phenylsulfonyl, heterocyclyl, heterocyclyloxy, heterocyclylamino, heterocyclylcarbonyl or heterocyclylsulfonyl, where each of the 15 last-mentioned radicals is unsubstituted or substituted by
15 one or more radicals selected from the group consisting of halogen, cyano, hydroxyl, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)hydroxyalkyl, (C₁-C₄)alkoxy-(C₁-C₄)alkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)hydroxyalkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, and
20 heterocyclyl in the radicals mentioned is in each case heterocyclyl having 3 to 9 ring atoms, 1 to 4 of which are hetero ring atoms selected from the group consisting of N, O and S, or

one of the radicals R^a and R^b is as defined above and the other of the radicals

R^a and R^b is a group of the formula NR'R'', where R' and R'',

independently of one another, are H or (C₁-C₆)alkyl, which is

25 unsubstituted or substituted, preferably unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, hydroxyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)hydroxyalkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, or R' and R'' together are straight-chain

(C₂-C₅)alkylene, which is unsubstituted or substituted by one or more radicals selected from the group consisting of (C₁-C₄)alkyl,

(C₁-C₄)alkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkyl, or

R^a and R^b together are (C₁-C₁₀)alkylidene, which is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, cyano, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio, or

NR^aR^b together are a heterocyclyl radical which is attached to the nitrogen atom and has 3 to 6 ring atoms and, in addition to the nitrogen atom as hetero ring atom, optionally contains 1 to 3 further hetero ring atoms selected from the group consisting of N, O and S, where the heterocycle is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, cyano, hydroxyl, (C₁-C₄)alkyl,

(C₁-C₄)haloalkyl, (C₁-C₄)hydroxyalkyl, (C₁-C₄)alkoxy,

(C₁-C₄)haloalkoxy, (C₁-C₄)hydroxyalkoxy, (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, (C₁-C₄)alkoxy-(C₁-C₄)alkyl and oxo,

or

A is (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, (C₃-C₆)cycloalkyl or

(C₅-C₆)cycloalkenyl, where each of the 5 last-mentioned radicals is

unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)alkylthio,

(C₁-C₄)alkoxy-(C₁-C₄)alkoxy and, in the case of cyclic radicals, also

(C₁-C₄)alkyl, (C₁-C₄)haloalkyl and (C₁-C₄)alkoxy-(C₁-C₄)alkyl, and

R¹ is hydroxyl or

(C₁-C₁₀)alkyl, which is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, hydroxyl, cyano, nitro, thiocyanato, formyl, amino, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₂-

C₄)alkenyloxy, (C₂-C₄)haloalkenyloxy, (C₂-C₄)alkynyloxy, (C₂-
 C₄)haloalkynyloxy, N-mono(C₁-C₄)alkylamino, N,N-di(C₁-C₄)alkylamino, (C₁-
 C₄)alkylthio, (C₁-C₄)alkylsulfinyl, (C₁-C₄)haloalkylsulfinyl, (C₁-C₄)alkylsulfonyl,
 (C₁-C₄)haloalkylsulfonyl, [(C₁-C₄)alkyl]carbonyl, [(C₁-C₄)haloalkyl]carbonyl,
 5 [(C₁-C₄)alkoxy]carbonyl, (C₃-C₉)cycloalkyl, (C₅-C₆)cycloalkenyl, phenyl and
 heterocyclyl, where each of the 4 last-mentioned radicals is unsubstituted or
 substituted by one or more radicals selected from the group consisting of
 halogen, cyano, hydroxyl, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₂-C₄)alkenyl,
 (C₂-C₄)haloalkenyl, (C₂-C₄)alkynyl, (C₂-C₄)haloalkynyl, (C₁-C₄)alkoxy,
 10 (C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio, and heterocyclyl in each case contains
 3 to 9 ring atoms, 1 to 4 of which are hetero ring atoms selected from the group
 consisting of N, O and S, or
 is [(C₁-C₆)alkyl]carbonyl, [(C₁-C₆)alkoxy]carbonyl, (C₁-C₆)alkylsulfinyl or
 (C₁-C₄)alkylsulfonyl, where each of the 4 last-mentioned radicals is
 15 unsubstituted or substituted by one or more radicals selected from the group
 consisting of halogen, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio,
 or
 is (C₃-C₆)cycloalkyl or (C₅-C₆)cycloalkenyl, where each of the two last-
 mentioned cyclic radicals is unsubstituted or substituted by one or more radicals
 20 selected from the group consisting of halogen, cyano, (C₁-C₄)alkyl,
 (C₁-C₄)haloalkyl, (C₂-C₄)alkenyl, (C₂-C₄)alkynyl, (C₁-C₄)alkoxy,
 (C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio,
 where the radical R¹, including substituents, has 1 to 30 carbon atoms,
 R² is H or formyl, (C₁-C₁₀)alkyl, (C₂-C₁₀)alkenyl, (C₂-C₁₀)alkynyl,
 25 (C₁-C₁₀)alkylsulfinyl, (C₁-C₁₀)alkylsulfonyl, (C₁-C₁₀)alkoxy,
 [(C₁-C₁₀)alkyl]carbonyl, [(C₁-C₁₀)alkoxy]carbonyl, where each of the 8 last-
 mentioned radicals is unsubstituted or substituted by one or more radicals

selected from the group consisting of halogen, (C₁-C₄)alkoxy,
 (C₁-C₄)haloalkoxy, (C₁-C₄)hydroxyalkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, or
 is (C₃-C₆)cycloalkyl, (C₅-C₆)cycloalkenyl, (C₃-C₆)cycloalkoxy, (C₅-
 C₆)cycloalkenyloxy, phenyl, phenoxy, phenylamino, phenylcarbonyl,
 5 phenylsulfonyl, heterocyclyl, heterocyclyloxy, heterocyclylamino,
 heterocyclylcarbonyl or heterocyclylsulfonyl, where each of the 14 last-
 mentioned radicals is unsubstituted or substituted by one or more radicals
 selected from the group consisting of halogen, cyano, hydroxyl, (C₁-C₄)alkyl,
 (C₁-C₄)haloalkyl, (C₁-C₄)hydroxyalkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy,
 10 (C₁-C₄)hydroxyalkoxy, (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, or
 is a group of the formula NR^cR^d, where R^c and R^d, independently of one another,
 are H, formyl, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, (C₁-C₆)alkylsulfinyl,
 (C₁-C₆)alkylsulfonyl, (C₁-C₆)alkoxy, [(C₁-C₆)alkyl]carbonyl or
 [(C₁-C₆)alkoxy]carbonyl, where each of the 8 last-mentioned groups is
 15 unsubstituted or substituted by one or more radicals selected from the group
 consisting of halogen, hydroxyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy,
 (C₁-C₄)hydroxyalkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, or
 R^c and R^d together are straight-chain (C₂-C₅)alkylene, which is unsubstituted or
 substituted by one or more radicals selected from the group consisting of
 20 (C₁-C₄)alkyl, (C₁-C₄)alkoxy, (C₁-C₄)alkoxy-(C₁-C₄)alkyl and oxo,
 R³ is halogen, CN, NO₂, SCN or a radical of the formula -X¹-A¹, where
 X¹ is a direct bond or a divalent group of the formula -O-, -S(O)_p-, -S(O)_p-O-,
 -O-S(O)_p-, -CO-, -O-CO-, -CO-O-, -S-CO-, -CO-S-, -S-CS-, -CS-S-,
 -O-CO-O-, -NR^O-, -O-NR^O-, -NR^O-O-, -NR^O-CO-, -CO-NR^O-,
 25 -O-CO-NR^O- or -NR^O-CO-O-, in which in each case p is the integer 0, 1 or
 2 and R^O is hydrogen, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl,
 phenyl, phenyl-(C₁-C₆)alkyl, (C₃-C₆)cycloalkyl or [(C₁-C₆)alkyl]carbonyl,
 and

A^1 is hydrogen, (C₁-C₁₀)alkyl, (C₂-C₁₀)alkenyl, (C₂-C₁₀)alkynyl,
 (C₃-C₆)cycloalkyl, (C₅-C₆)cycloalkenyl, phenyl or heterocyclyl having 3 to
 9 ring atoms and 1 to 4 hetero ring atoms selected from the group
 consisting of N, O and S, where each of the 7 last-mentioned radicals is
 unsubstituted or substituted by one or more radicals selected from the
 group consisting of halogen, cyano, hydroxyl, (C₁-C₄)alkyl,
 (C₃-C₆)cycloalkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and
 (C₁-C₄)hydroxyalkoxy and, in the case of cyclic radicals, also
 (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy-(C₁-C₄)alkyl and (C₁-C₄)hydroxyalkyl
 and, including substituents, has up to 20 carbon atoms,
 each of the radicals R^4 , R^5 , R^6 , R^7 and R^8 , independently of one another, is halogen,
 nitro, cyano, thiocyanato or a radical of the formula $-X^2-A^2$, where
 X^2 is a direct bond or a divalent group of the formula -O-, -S(O)_q-, -S(O)_q-O-,
 -O-S(O)_q-, -S(O)_q-NR^r-, -NR^r-S(O)_q-, -CO-, -O-CO-, -CO-O-, -S-CO-,
 -CO-S-, -S-CS-, -CS-S-, -O-CO-O-, -NR^r-, -O-NR^r-, -NR^r-O-, -NR^r-CO-,
 -CO-NR^r-, -O-CO-NR^r- or -NR^r-CO-O-, in which in each case q is the
 integer 0, 1 or 2 and R^r is hydrogen, amino, substituted amino,
 (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, phenyl, phenyl-(C₁-
 C₆)alkyl, phenylcarbonyl, (C₃-C₆)cycloalkyl, (C₅-C₆)cycloalkenyl,
 [(C₁-C₆)alkyl]carbonyl, (C₁-C₆)alkylsulfonyl, (C₁-C₆)alkylsulfinyl,
 phenylsulfonyl or phenylsulfinyl, where each of the 13 last-mentioned
 radicals is unsubstituted or substituted by one or more radicals selected
 from the group consisting of halogen, cyano, hydroxyl, (C₁-C₄)alkyl,
 (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)hydroxyalkoxy and, in the
 case of cyclic radicals, also (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy-(C₁-C₄)alkyl
 and (C₁-C₄)hydroxyalkyl, and

A^2 is hydrogen, (C₁-C₁₀)alkyl, (C₂-C₁₀)alkenyl, (C₂-C₁₀)alkynyl, (C₃-C₆)cycloalkyl, (C₅-C₆)cycloalkenyl, phenyl or heterocyclyl, where each of the 7 last-mentioned radicals is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, cyano, hydroxyl, amino, mercapto, aminocarbonyl, mono- and di(C₁-C₆)alkylamino, mono- and diarylamino, N-(C₁-C₆)alkyl-N-arylamino, mono- and diacylamino, N-(C₁-C₆)alkyl-N-acylamino, N-arylN-acylamino, (C₁-C₆)alkoxy, (C₁-C₆)alkylthio, (C₁-C₆)alkylsulfonyl, (C₁-C₆)alkylsulfinyl, [(C₁-C₅)alkyl]carbonyl, [(C₁-C₅)alkoxy]carbonyl, [(C₁-C₆)alkyl]carbonyloxy, (C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkoxy, (C₃-C₆)cycloalkylcarbonyl, (C₃-C₆)cycloalkylcarbonyloxy, phenyl, phenoxy, phenylthio, phenylcarbonyl, phenylcarbonyloxy, heterocyclyl, heterocyclioxy, heterocyclylthio, heterocyclylcarbonyl, heterocyclylcarbonyloxy and, in the case of cyclic radicals, also (C₁-C₆)alkyl,

where each of the 31 last-mentioned radicals is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, cyano, hydroxyl, amino, mono- and di(C₁-C₆)alkylamino, mono- and diarylamino, N-(C₁-C₆)alkyl-N-arylamino, mono- and di(C₁-C₆)acylamino, N-(C₁-C₆)alkyl-N-acylamino, (C₁-C₆)alkoxy, (C₁-C₆)alkylthio, (C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkoxy, phenyl, phenoxy and phenylthio and, in the case of cyclic radicals, also by (C₁-C₆)alkyl, (C₁-C₆)haloalkyl and (C₁-C₄)alkoxy-(C₁-C₆)alkyl and where heterocyclyl in A^2 in each case contains 3 to 9 ring atoms and 1 to 4 hetero ring atoms selected from the group consisting of N, O and S,

and A^2 , including substituents, has up to 20 carbon atoms, or

two adjacent radicals from the group consisting of R^4 , R^5 , R^6 , R^7 and R^8 together with the carbon atoms of the phenyl ring to which they are attached form a fused ring having 4 to 6 ring atoms, which is carbocyclic or contains 1 to 3 hetero ring atoms selected from the group consisting of N, O and S, and which is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₆)alkyl, (C₁-C₆)haloalkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, (C₁-C₆)alkoxy, (C₁-C₆)haloalkoxy, [(C₁-C₆)alkyl]carbonyl, [(C₁-C₆)alkoxy]carbonyl, (C₁-C₆)alkylsulfonyl and (C₁-C₆)alkylsulfinyl, where at least two radicals, preferably 2 or 3 radicals, in particular 2 radicals, from the group consisting of R^4 , R^5 , R^6 , R^7 and R^8 are different from hydrogen.

3. A compound of the formula (I) and salts thereof as claimed in claim 1 or 2, wherein

A is a group of the formula NR^aR^b , in which

R^a and R^b , independently of one another, are hydrogen, formyl, aminocarbonyl, amino(thiocarbonyl), (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl, (C₁-C₆)alkylsulfinyl, (C₁-C₆)alkylsulfonyl, (C₁-C₆)alkoxy, [(C₁-C₆)alkyl]carbonyl, [(C₁-C₆)alkoxy]carbonyl, N-mono[(C₁-C₆)alkyl]aminocarbonyl, N,N-di[(C₁-C₆)alkyl]aminocarbonyl, [(C₁-C₆)alkylthio]carbonyl, [(C₁-C₆)alkyl](thiocarbonyl), [(C₁-C₆)alkoxy](thiocarbonyl), N-mono[(C₁-C₆)alkyl]amino(thiocarbonyl), N,N-di[(C₁-C₆)alkyl]amino(thiocarbonyl), [(C₁-C₆)alkylthio](thiocarbonyl), where each of the 16 last-mentioned radicals is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)hydroxyalkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, or are (C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkoxy, phenyl, phenoxy, phenylamino, phenylcarbonyl, naphthylcarbonyl, phenylsulfonyl,

heterocyclyl, heterocyclyloxy, heterocyclylamino, heterocyclylcarbonyl, heterocyclylsulfonyl, where each of the 12 last-mentioned radicals is unsubstituted or substituted by one or more of the radicals selected from the group consisting of halogen, cyano, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy-(C₁-C₄)alkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, and heterocyclyl in the radicals mentioned is in each case heterocyclyl having 3 to 9 ring atoms, 1 to 3 of which are hetero ring atoms selected from the group consisting of N, O and S, or one of the radicals R^a and R^b is as defined above and the other of the radicals R^a and R^b is a group of the formula NR'R'', where R' and R'', independently of one another, are H or (C₁-C₄)alkyl, which is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, or R' and R'' together are straight-chain (C₂-C₅)alkylene, which is unsubstituted or substituted by one or more radicals selected from the group consisting of (C₁-C₄)alkyl, (C₁-C₄)alkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkyl, or R^a and R^b together are (C₁-C₆)alkylidene, which is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, cyano, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio, or NR^aR^b together are a heterocyclyl radical which is attached to the nitrogen atom and has 3 to 6 ring atoms and, in addition to the nitrogen atom as hetero ring atom, optionally contains 1 to 3 further hetero ring atoms selected from the group consisting of N, O and S, where the heterocycle is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, cyano, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)alkoxy-(C₁-C₄)alkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkyl,

or

A is (C₁-C₄)alkyl, (C₂-C₄)alkenyl, (C₂-C₄)alkynyl or (C₃-C₄)cycloalkyl, where each of the 4 last-mentioned radicals is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, (C₁-C₄)alkylthio, (C₁-C₄)alkoxy-(C₁-C₄)alkoxy and, in the case of cyclic radicals, also (C₁-C₄)alkyl, (C₁-C₄)haloalkyl and (C₁-C₄)alkoxy-(C₁-C₄)alkyl.

4. A compound of the formula (I) and salts thereof as claimed in any of claims 1 to 3, wherein

R¹ is (C₁-C₆)alkyl, which is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, hydroxyl, cyano, nitro, thiocyanato, formyl, amino, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy, N-mono[(C₁-C₄)alkyl]amino, N,N-di[(C₁-C₄)alkyl]amino, (C₁-C₄)alkylthio, (C₁-C₄)alkylsulfonyl, (C₁-C₄)haloalkylsulfonyl, [(C₁-C₄)alkyl]carbonyl, [(C₁-C₄)haloalkyl]carbonyl, [(C₁-C₄)alkoxy]carbonyl, (C₃-C₉)cycloalkyl, phenyl and heterocyclyl, where each of the 3 last-mentioned radicals is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, cyano, hydroxyl, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio and heterocyclyl contains in each case 3 to 9 ring atoms, 1 to 4 of which are hetero ring atoms selected from the group consisting of N, O and S, or is [(C₁-C₆)alkyl]carbonyl, [(C₁-C₆)alkoxy]carbonyl or (C₁-C₄)alkylsulfonyl, where each of the 3 last-mentioned radicals is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio, or

is (C₃-C₆)cycloalkyl, which is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy, (C₁-C₄)haloalkoxy and (C₁-C₄)alkylthio.

5 5. A compound of the formula (I) and salts thereof as claimed in any of claims 1 to 4, wherein

R² is H or formyl, (C₁-C₄)alkyl, (C₂-C₄)alkenyl, (C₂-C₄)alkynyl, (C₁-C₄)alkylsulfinyl, (C₁-C₄)alkylsulfonyl, (C₁-C₄)alkoxy, [(C₁-C₄)alkyl]carbonyl or

[(C₁-C₄)alkoxy]carbonyl, where each of the 8 last-mentioned radicals is

10 unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkoxy and (C₁-C₄)haloalkoxy, or

is (C₃-C₆)cycloalkyl, (C₃-C₆)cycloalkoxy, phenyl, phenoxy, phenylcarbonyl, phenylsulfonyl, heterocyclyl, heterocyclyloxy, heterocyclylcarbonyl or heterocyclylsulfonyl, where each of the 10 last-mentioned radicals is

15 unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, cyano, (C₁-C₄)alkyl, (C₁-C₄)haloalkyl, (C₁-C₄)alkoxy and (C₁-C₄)haloalkoxy and heterocyclyl in the radicals mentioned has in each case 3 to 9 ring atoms, 1 to 4 of which are hetero ring atoms selected from the group consisting of N, O and S, or

20 is a group of the formula NR^cR^d, where R^c and R^d, independently of one another, are H, formyl, (C₁-C₄)alkyl, (C₁-C₄)alkylsulfonyl, (C₁-C₄)alkoxy,

[(C₁-C₄)alkyl]carbonyl or [(C₁-C₄)alkoxy]carbonyl, where each of the 5 last-mentioned groups is unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C₁-C₄)alkoxy,

25 (C₁-C₄)haloalkoxy and (C₁-C₄)alkoxy-(C₁-C₄)alkoxy, or R^c and R^d together are straight-chain (C₂-C₅)alkylene which is unsubstituted or substituted by one or more radicals selected from the group consisting of (C₁-C₄)alkyl, (C₁-C₄)alkoxy, (C₁-C₄)alkoxy-(C₁-C₄)alkyl and oxo.

6. A compound of the formula (I) and salts thereof as claimed in any of claims 1 to 5, wherein

R^3 is halogen, CN, NO₂, SCN or a radical of the formula $-X^1-A^1$, where

5 X^1 is a direct bond or a divalent group of the formula -O-, -S(O)_p-, -S(O)_p-O-,
 -O-S(O)_p-, -CO-, -O-CO-, -CO-O-, -S-CO-, -CO-S-, -S-CS-, -CS-S-,
 -O-CO-O-, -NR^O-, -O-NR^O-, -NR^O-O-, -NR^O-CO-, -CO-NR^O-,
 -O-CO-NR^O- or -NR^O-CO-O-, in which in each case p is the integer 0, 1
 or 2 and R^O is hydrogen, (C₁-C₄)alkyl, (C₂-C₄)alkenyl, (C₂-C₄)alkynyl,
 10 phenyl, phenyl-(C₁-C₂)alkyl, (C₃-C₆)cycloalkyl or [(C₁-C₄)alkyl]carbonyl,
 and
 A^1 is hydrogen, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl,
 (C₃-C₆)cycloalkyl, phenyl or heterocyclyl having 3 to 9 ring atoms and 1
 to 3 hetero ring atoms selected from the group consisting of N, O and S,
 15 where each of the 6 last-mentioned radicals is unsubstituted or
 substituted by one or more radicals selected from the group consisting of
 halogen, cyano, (C₁-C₄)alkyl, (C₃-C₆)cycloalkyl, (C₁-C₄)alkoxy,
 (C₁-C₄)haloalkoxy, (C₁-C₄)alkylthio and, in the case of cyclic radicals,
 also (C₁-C₄)haloalkyl and (C₁-C₄)alkoxy-(C₁-C₄)alkyl and, including
 20 substituents, has up to 16 carbon atoms.

7. A compound of the formula (I) and salts thereof as claimed in any of claims 1 to 6, wherein

each of the radicals R^4 , R^5 , R^6 , R^7 and R^8 , independently of one another, is halogen,

25 nitro, cyano, thiocyanato or a radical of the formula $-X^2-A^2$, where

X^2 is a direct bond or a divalent group of the formula -O-, -S(O)_q-, -S(O)_q-O-,
 -O-S(O)_q-, -S(O)_q-NR^r-, -NR^r-S(O)_q-, -CO-, -O-CO-, -CO-O-, -S-CO-,
 -CO-S-, -S-CS-, -CS-S-, -O-CO-O-, -NR^r-, -O-NR^r-, -NR^r-O-, -NR^r-CO-,

-CO-NR^f-, -O-CO-NR^f- or -NR^f-CO-O-, preferably -O-, -S(O)_q-, -S(O)_q-O-,
 -S(O)_q-NR^f-, -NR^f-S(O)_q-, -CO-, -O-CO-, -CO-O-, -S-CO-, -CO-S-, -NR^f -,
 -O-NR^f-, -NR^f-O-, -NR^f-CO-, -CO-NR^f-, -O-CO-NR^f- or -NR^f-CO-O-, in
 which in each case q is the integer 0, 1 or 2 and R^f, in each case
 5 independently of one another, is hydrogen, amino, mono- or di(C₁-
 C₄)alkylamino, mono- or di(C₁-C₄)arylamino, N-(C₁-C₄)alkyl-N-aryl-
 amino, (C₁-C₄)alkyl, (C₂-C₄)alkenyl, (C₂-C₄)alkynyl, phenyl, phenyl-(C₁-
 C₄)alkyl, phenylcarbonyl, (C₃-C₆)cycloalkyl, (C₅-C₆)cycloalkenyl,
 10 [(C₁-C₄)alkyl]carbonyl, (C₁-C₄)alkylsulfonyl, (C₁-C₄)alkylsulfinyl,
 phenylsulfonyl or phenylsulfinyl, where each of the 18 last-mentioned
 radicals is unsubstituted or substituted by one or more radicals selected
 from the group consisting of halogen, cyano, (C₁-C₄)alkyl, (C₁-C₄)alkoxy,
 (C₁-C₄)haloalkoxy and, in the case of cyclic radicals, also
 (C₁-C₄)haloalkyl and (C₁-C₄)alkoxy-(C₁-C₄)alkyl, and
 15 A² is hydrogen, (C₁-C₆)alkyl, (C₂-C₆)alkenyl, (C₂-C₆)alkynyl,
 (C₃-C₆)cycloalkyl, (C₅-C₆)cycloalkenyl, phenyl or heterocyclyl having 3 to
 6 ring atoms and 1 to 3 hetero ring atoms selected from the group
 consisting of N, O and S, where each of the 7 last-mentioned radicals is
 unsubstituted or substituted by one or more radicals selected from the
 20 group consisting of halogen, cyano, hydroxyl, amino or else mercapto or
 aminocarbonyl, mono- and di(C₁-C₄)alkylamino, mono- and
 diphenylamino, N-(C₁-C₄)alkyl-N-phenylamino, mono- and
 di[(C₁-C₄)alkanoyl]amino, mono- and di[(C₁-C₄)alkylsulfonyl]amino,
 N-(C₁-C₄)alkyl-N-[(C₁-C₄)alkanoyl]amino, (C₁-C₄)alkyl-N-
 25 [(C₁-C₄)alkylsulfonyl]amino, N-phenyl-N-[(C₁-C₄)alkanoyl]amino,
 N-phenyl-N-[(C₁-C₄)alkylsulfonyl]amino, (C₁-C₄)alkoxy, (C₁-C₄)alkylthio,
 (C₁-C₄)alkylsulfonyl, (C₁-C₄)alkylsulfinyl, [(C₁-C₄)alkyl]carbonyl,

[(C₁-C₄)alkoxy]carbonyl, [(C₁-C₄)alkyl]carbonyloxy, (C₃-C₆)cycloalkyl,
 (C₃-C₆)cycloalkoxy, (C₃-C₆)cycloalkylcarbonyl,
 (C₃-C₆)cycloalkylcarbonyloxy, phenyl, phenoxy, phenylthio,
 phenylcarbonyl, phenylcarbonyloxy, heterocyclyl, heterocyclyloxy,
 heterocyclylthio, heterocyclylcarbonyl, heterocyclylcarbonyloxy and, in
 the case of cyclic radicals, also (C₁-C₆)alkyl,

where each of the 35 last-mentioned radicals is unsubstituted or
 substituted by one or more radicals selected from the group
 consisting of halogen, cyano, hydroxyl, amino, mono- and di-
 (C₁-C₄)alkylamino, mono- and diphenylamino, N-(C₁-C₄)alkyl-N-
 phenylamino, (C₁-C₄)alkoxy, (C₁-C₄)alkylthio, (C₃-C₆)cycloalkyl,
 (C₃-C₆)cycloalkoxy, phenyl, phenoxy and phenylthio and, in the
 case of cyclic radicals, also by (C₁-C₄)alkyl, (C₁-C₄)haloalkyl and
 (C₁-C₄)alkoxy-(C₁-C₄)alkyl,

and A², including substituents, has up to 16 carbon atoms,
 or

two adjacent radicals from the group consisting of R⁴, R⁵, R⁶, R⁷ and R⁸
 together with the carbon atoms of the phenyl ring to which they are attached
 form a fused ring having 4 to 6 ring atoms, which is carbocyclic or contains 1 to
 3 hetero ring atoms selected from the group consisting of N, O and S and which
 is unsubstituted or substituted by one or more radicals selected from the group
 consisting of halogen, (C₁-C₄)alkyl, (C₂-C₄)alkenyl, (C₂-C₄)alkynyl,
 [(C₁-C₄)alkyl]-carbonyl, (C₁-C₆)alkoxy, [(C₁-C₄)alkoxy]carbonyl, (C₁-
 C₄)alkylsulfonyl and (C₁-C₄)alkylsulfinyl,

where at least two radicals selected from the group consisting of R⁴, R⁵, R⁶, R⁷ and R⁸
 are different from hydrogen.

8. A process for preparing the compound of the formula (I) or a salt thereof, as
 defined in any of claims 1 to 7, which comprises

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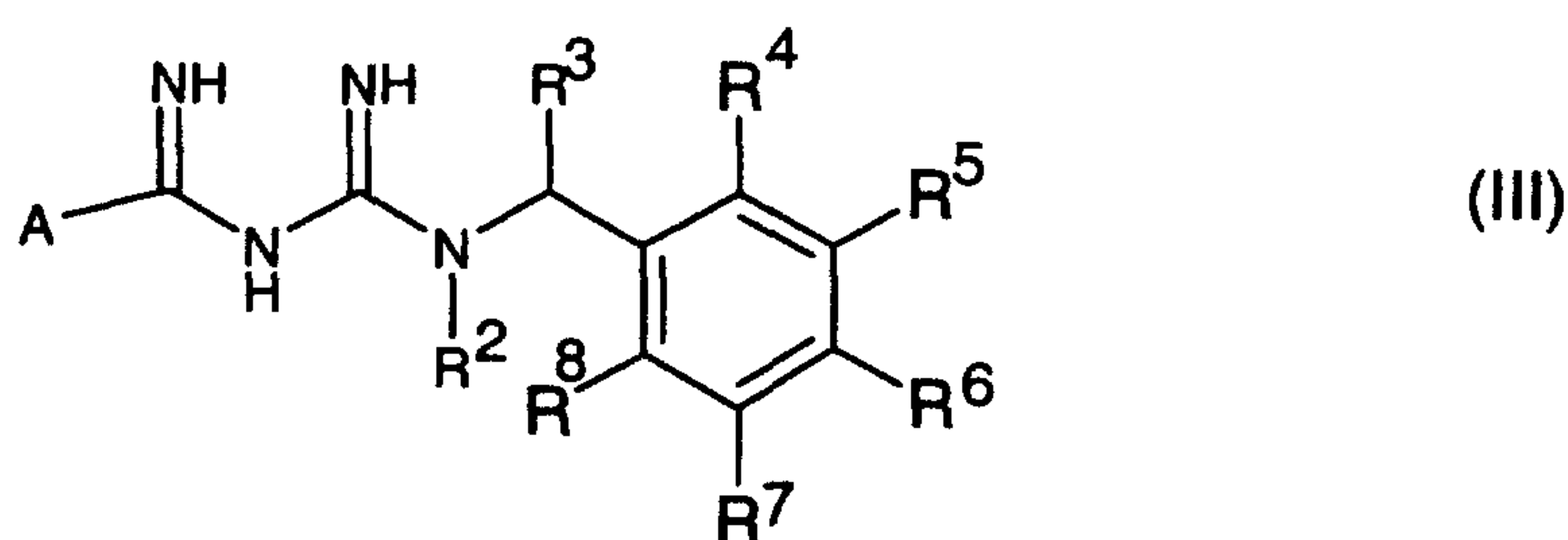
- a) reacting a compound of the formula (II),



5

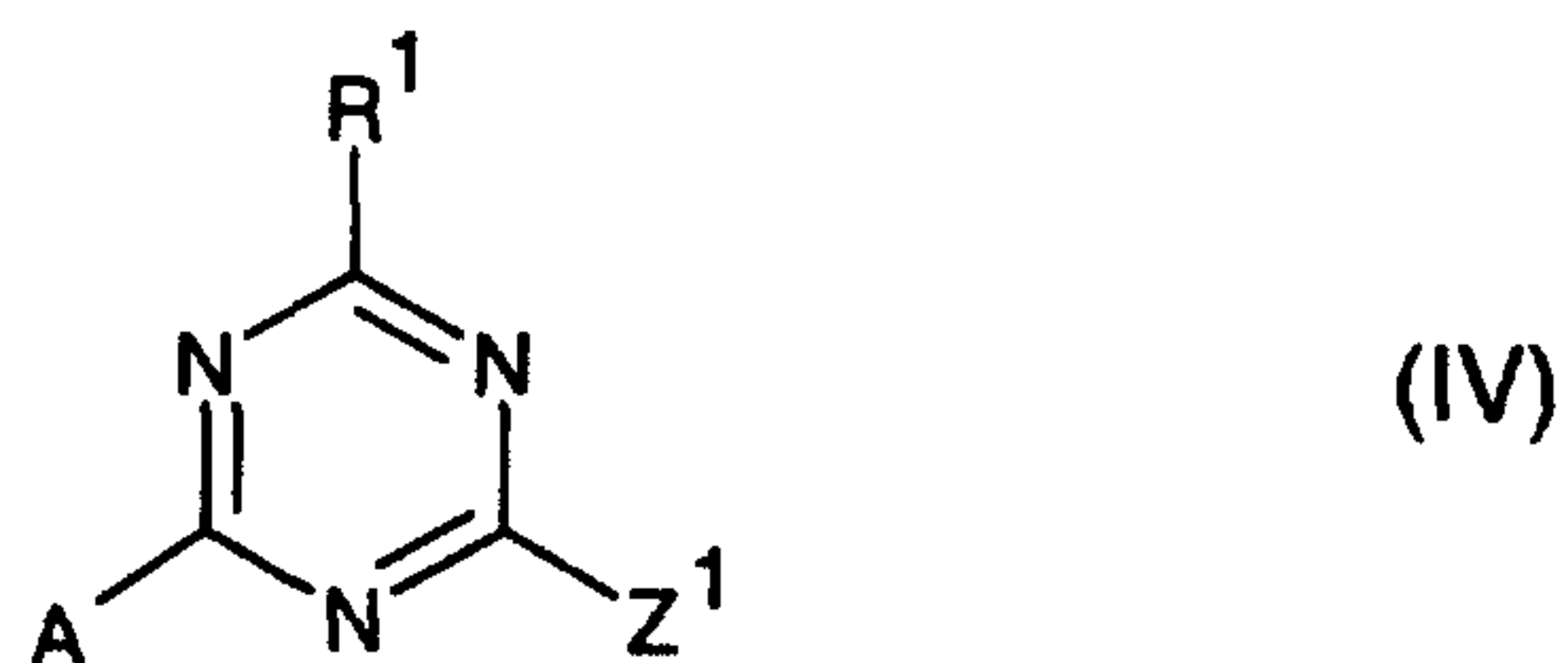
in which Fu is a functional group selected from the group consisting of the carboxylic esters, carboxylic orthoesters, carbonyl chlorides, carboxamides, carboxylic anhydrides and trichloromethyl with a biguanidide of the formula (III) or an acid addition salt thereof

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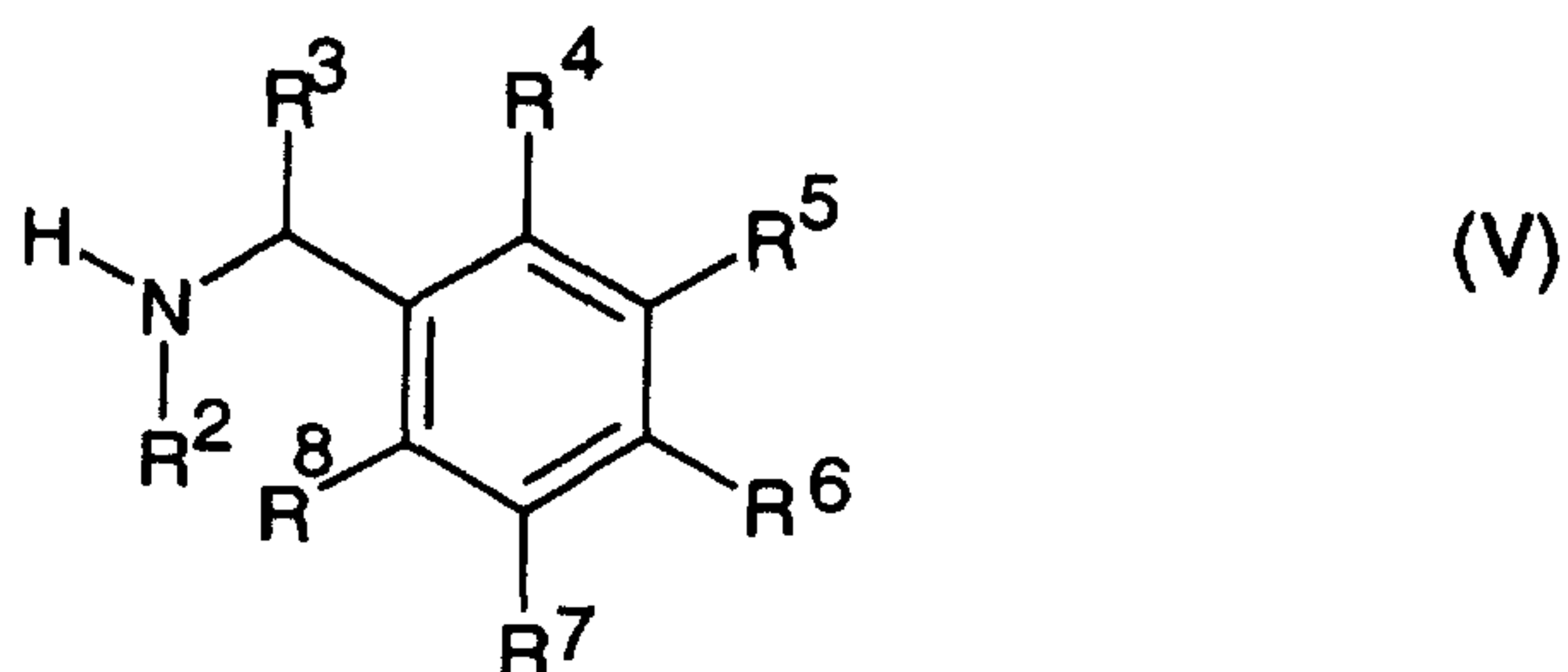
or

- b) reacting a compound of the formula (IV),



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in which Z^1 is an exchangeable radical or a leaving group with a suitable amine of the formula (V) or an acid addition salt thereof



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where in the formulae (II), (III), (IV) and (V) the radicals R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^7 , R^8 and A are as defined in formula (I).

9. A herbicidal or plant-growth-regulating agent which comprises one or more
5 compounds of the formula (I) or salts thereof as claimed in any of claims 1 to 7 and formulation auxiliaries which are customary in crop protection.

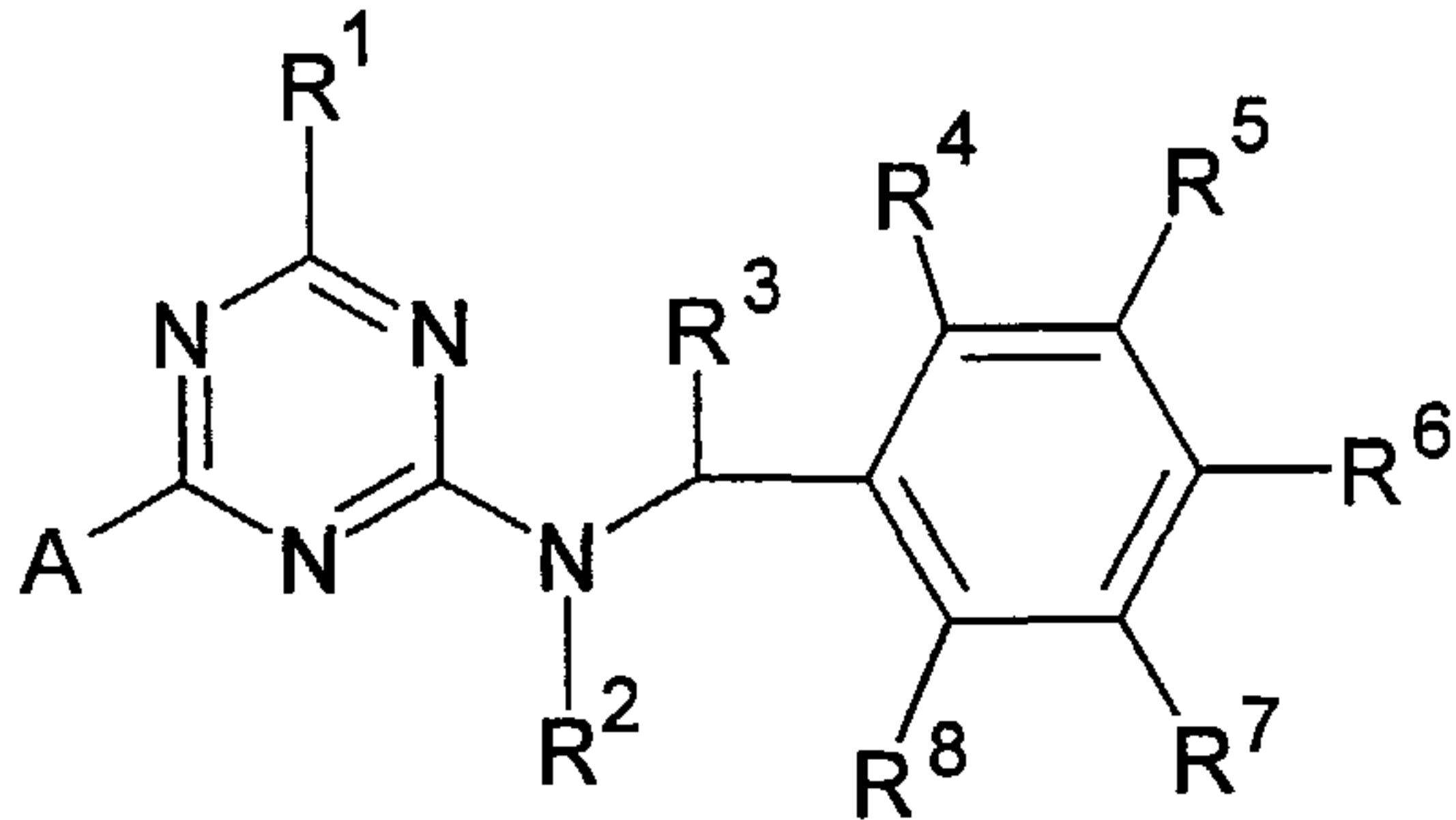
10. A method for controlling harmful plants or for regulating the growth of plants,
10 which comprises applying an effective amount of one or more compounds of the formula (I) or salts thereof as claimed in any of claims 1 to 7 to the plants, to plant seeds or to the area under cultivation.

11. The use of compounds of the formula (I) or salts thereof as claimed in any of
15 claims 1 to 7 as herbicides or plant growth regulators.

12. The use as claimed in claim 11, wherein the compounds of the formula (I) or
salts thereof are employed for controlling harmful plants or for regulating growth in
crops of useful or ornamental plants.

20 13. The use as claimed in claim 12, wherein the crop plants are transgenic crop plants.

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