

CPC COOPERATIVE PATENT CLASSIFICATION

A01N PRESERVATION OF BODIES OF HUMANS OR ANIMALS OR PLANTS OR PARTS THEREOF; BIOCIDES, e.g. AS DISINFECTANTS, AS PESTICIDES, AS HERBICIDES (preparations for medical, dental or toilet purposes [A61K](#); methods or apparatus for disinfection or sterilisation in general, or for deodorising of air [A61L](#)); **PEST REPELLANTS OR ATTRACTANTS** (decoys [A01M 1/06](#); medicinal preparations [A61K](#)); **PLANT GROWTH REGULATORS** (compounds in general [C01](#), [C07](#), [C08](#); fertilisers [C05](#); soil conditioners or stabilisers [C09K 17/00](#))

NOTES

1. This subclass covers:
 - compositions, physical forms, methods of application of specific materials or the use of single compounds or compositions
 - chemosterilants for the sexual sterilisation of invertebrates, e.g. insects (sex sterilants for other purposes [A61K](#)).
2. This subclass does not cover materials which affect the growth of a plant solely by supplying nutrients, i.e. plant food, ordinarily required for growth or materials which are used to prevent or cure mineral deficiencies in plants, e.g. addition of iron chelates to cure iron chlorosis, which materials are covered by class [C05](#).
3. In this subclass, the following expression is used with the meaning indicated:
 - "plant growth regulators" are those materials which alter the plant through a chemical modification of the plant metabolism, such as auxins.

WARNING

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

A01N 43/824	covered by	A01N 43/82
A01N 43/828	covered by	A01N 43/82
A01N 43/832	covered by	A01N 43/82
A01N 43/836	covered by	A01N 43/82
A01N 53/02	covered by	A01N 53/00
A01N 53/04	covered by	A01N 53/00
A01N 53/06	covered by	A01N 53/00
A01N 53/08	covered by	A01N 53/00
A01N 53/10	covered by	A01N 53/00
A01N 53/12	covered by	A01N 53/00
A01N 53/14	covered by	A01N 53/00
A01N 55/10	covered by	A01N 55/00

Preservation of bodies of humans or animals, or plants, or parts thereof

- 1/00 Preservation of bodies of humans or animals, or parts thereof** (preservation of foodstuffs [A23](#); medicinal preparations containing materials from mammals or birds, e.g. blood, sperm, [A61K 35/12](#); cell or tissue culture [C12N 5/00](#))
- 1/02 . Preservation of living parts
- 1/0205 . . {Chemical aspects}
- 1/021 . . . {Preservation or perfusion media, liquids, solids or gases used in the preservation of cells, tissue, organs or bodily fluids}
- 1/0215 {Disinfecting agents, e.g. antimicrobials for preserving living parts}
- 1/0221 {Freeze-process protecting agents, i.e. substances protecting cells from effects of the physical process, e.g. cryoprotectants, osmolarity regulators like oncotic agents}
- 1/0226 {Physiologically active agents, i.e. substances affecting physiological processes of cells and tissue to be preserved, e.g. anti-oxidants or nutrients}

- 1/0231 . . . {Chemically defined matrices, e.g. alginate gels, for immobilising, holding or storing cells, tissue or organs for preservation purposes; Chemically altering or fixing cells, tissue or organs, e.g. by cross-linking, for preservation purposes}
- 1/0236 . . {Mechanical aspects}
- 1/0242 . . . {Apparatuses, i.e. devices used in the process of preservation of living parts, such as pumps, refrigeration devices or any other devices featuring moving parts and/or temperature controlling components}
- 1/0247 {for perfusion, i.e. for circulating fluid through organs, blood vessels or other living parts}
- 1/0252 {Temperature controlling refrigerating apparatus, i.e. devices used to actively control the temperature of a designated internal volume, e.g. refrigerators, freeze-drying apparatus or liquid nitrogen baths}
- 1/0257 {Stationary or portable vessels generating cryogenic temperatures}

- 1/0263 . . . {Non-refrigerated containers specially adapted for transporting or storing living parts whilst preserving, e.g. cool boxes, blood bags or "straws" for cryopreservation (containers for collecting, administering, analyzing and storing without specific measures for preservation, e.g. blood bags as such, [A61J 1/10](#))}
- 1/0268 {Carriers for immersion in cryogenic fluid, both for slow-freezing and vitrification, e.g. open or closed "straws" for embryos, oocytes or semen}
- 1/0273 {Transport containers ([A01N 1/0268](#) takes precedence)}
- 1/0278 . . {Physical preservation processes}
- 1/0284 . . . {Temperature processes, i.e. using a designated change in temperature over time}
- 1/0289 . . . {Pressure processes, i.e. using a designated change in pressure over time}
- 1/0294 . . . {Electromagnetic, i.e. using electromagnetic radiation or electromagnetic fields}
- 3/00** Preservation of plants or parts thereof, e.g. inhibiting evaporation, improvement of the appearance of leaves {or protection against physical influences such as UV radiation using chemical compositions; Grafting wax} (preservation of foodstuffs [A23](#); preservation or chemical ripening of fruit or vegetables [A23B 7/00](#)); {(protective coverings [A01G 13/02](#))} Grafting wax
- 3/02 . Keeping cut flowers fresh chemically (apparatus therefor [A01G 5/06](#))
- 3/04 . Grafting-wax

NOTE

For compositions containing more than one known active ingredients (e.g. synergistic mixtures) the symbol [A01N 2300/00](#) is additionally given to the symbol of the main ingredient.

Biocides; Pest repellants or attractants; Plant growth regulators**NOTES**

- Attention is drawn to the definitions of groups of chemical elements following the title of section [C](#).
- In groups [A01N 27/00](#) - [A01N 65/00](#), in the absence of an indication to the contrary, classification is made in the last appropriate place for an active ingredient.
- Where a compound is described as existing in tautomeric forms, it is classified as if existing in the form which is classified last in the system.
- Compounds covered by different main groups according to alternatively specified parts of their formulae are classified in every one of the relevant main groups.
- Salts formed between two or more organic compounds are classified as the compound providing the essential ion and it is also classified as the compound providing the other ion.
- Salts or metal chelates of an organic compound are classified as that compound.
- In this subclass, a foodstuff is not considered as an active ingredient.
- Different materials applied in sequence, at different times, are considered as a mixture of all materials employed
- Synergistic or potentiated compositions are classified as if the synergist or potentiator were an active ingredient.

10. In groups [A01N 25/00](#) - [A01N 65/00](#), the symbol X means nitrogen, oxygen, sulfur or a halogen; Y means nitrogen, oxygen or sulfur. A dotted line between atoms indicates an optional bond, e.g. **....** indicates one or two single bonds or a double bond.

11. In groups [A01N 25/00](#) - [A01N 65/00](#), it is required to use Combination Sets for classifying mixtures of (active or formulation-relevant) ingredients.

Symbols relating to additional ingredients of mixtures or specific formulation types are added to the Combination Set of the main ingredient.

The additional ingredient may be a further active ingredient (for example in case of synergistic mixtures) or may relate to a particular special formulation-ingredient (such as a surfactant or safener) or to a special formulation embodiment (like a wettable powder or microcapsule).

25/00 Biocides, pest repellants or attractants, or plant growth regulators, characterised by their forms, or by their non-active ingredients or by their methods of application, {e.g. seed treatment or sequential application;} (apparatus for the destruction of noxious animals or noxious plants [A01M](#); fungicidal, bactericidal, insecticidal, disinfecting or antiseptic paper [D21H](#)); Substances for reducing the noxious effect of the active ingredients to organisms other than pests

- 25/002 . {containing a foodstuff as carrier or diluent, i.e. baits}
- 25/004 . . {rodenticidal}
- 25/006 . . {insecticidal}
- 25/008 . . {molluscicidal}
- 25/02 . containing liquids as carriers, diluents or solvents
- 25/04 . . Dispersions, {emulsions, suspoemulsions, suspension concentrates} or gels (foams [A01N 25/16](#))
- 25/06 . . . Aerosols
- 25/08 . containing solids as carriers or diluents
- 25/10 . . Macromolecular compounds
- 25/12 . Powders or granules ([A01N 25/26](#) takes precedence)
- 25/14 . . wettable
- 25/16 . Foams
- 25/18 . Vapour or smoke emitting compositions with delayed or sustained release (fumigators [A01M 13/00](#))
- 25/20 . Combustible or heat-generating compositions
- 25/22 . containing ingredients stabilising the active ingredients
- 25/24 . containing ingredients to enhance the sticking of the active ingredients
- 25/26 . in coated particulate form
- 25/28 . . Microcapsules {or nanocapsules}
- 25/30 . characterised by the surfactants
- 25/32 . Ingredients for reducing the noxious effect of the active substances to organisms other than pests, e.g. toxicity reducing compositions, self-destructing compositions
- 25/34 . Shaped forms, e.g. sheets, not provided for in any other sub-group of this main group

27/00 Biocides, pest repellants or attractants, or plant growth regulators containing hydrocarbons

29/00 Biocides, pest repellants or attractants, or plant growth regulators containing halogenated hydrocarbons

- 29/02 . Acyclic compounds or compounds containing halogen attached to an aliphatic side-chain of a cycloaliphatic ring system
- 29/04 . Halogen directly attached to a carbocyclic ring system
- 29/06 . . Hexachlorocyclohexane
- 29/08 . . Halogen directly attached to a polycyclic ring system
- 29/10 . Halogen attached to an aliphatic side chain of an aromatic ring system
- 29/12 . . 1,1-Di- or 1,1,1-trihalo-2-aryl-ethane or -ethene or derivatives thereof, e.g. DDT

31/00 Biocides, pest repellants or attractants, or plant growth regulators containing organic oxygen or sulfur compounds

- 31/02 . Acyclic compounds
- 31/04 . Oxygen or sulfur attached to an aliphatic side-chain of a carbocyclic ring system
- 31/06 . Oxygen or sulfur directly attached to a cycloaliphatic ring system
- 31/08 . Oxygen or sulfur directly attached to an aromatic ring system
- 31/10 . . Pentachlorophenol
- 31/12 . . Bis-chlorophenols
- 31/14 . . Ethers
- 31/16 . . with two or more oxygen or sulfur atoms directly attached to the same aromatic ring system

33/00 Biocides, pest repellants or attractants, or plant growth regulators containing organic nitrogen compounds

- 33/02 . Amines; Quaternary ammonium compounds
- 33/04 . . Nitrogen directly attached to aliphatic or cycloaliphatic carbon atoms
- 33/06 . . Nitrogen directly attached to an aromatic ring system
- 33/08 . . containing oxygen or sulfur
- 33/10 . . . having at least one oxygen or sulfur atom directly attached to an aromatic ring system
- 33/12 . . Quaternary ammonium compounds
- 33/14 . containing nitrogen-to-halogen bonds
- 33/16 . containing nitrogen-to-oxygen bonds
- 33/18 . . Nitro compounds
- 33/20 . . . containing oxygen or sulfur attached to the carbon skeleton containing the nitro group
- 33/22 having at least one oxygen or sulfur atom and at least one nitro group directly attached to the same aromatic ring system
- 33/24 . . only one oxygen atom attached to the nitrogen atom
- 33/26 . containing nitrogen-to-nitrogen bonds, e.g. azides, diazo-amino compounds, diazonium compounds, hydrazine derivatives

35/00 Biocides, pest repellants or attractants, or plant growth regulators containing organic compounds containing a carbon atom having two bonds to hetero atoms with at the most one bond to halogen, e.g. aldehyde radical

- 35/02 . containing aliphatically bound aldehyde or keto groups, or thio analogues thereof; Derivatives thereof, e.g. acetals
- 35/04 . containing aldehyde or keto groups, or thio analogues thereof, directly attached to an aromatic ring system, e.g. acetophenone; Derivatives thereof, e.g. acetals
- 35/06 . containing keto or thioketo groups as part of a ring, e.g. cyclohexanone, quinone; Derivatives thereof, e.g. ketals
- 35/08 . at least one of the bonds to hetero atoms is to nitrogen
- 35/10 . . containing a carbon-to-nitrogen double bond

37/00 Biocides, pest repellants or attractants, or plant growth regulators containing organic compounds containing a carbon atom having three bonds to hetero atoms with at the most two bonds to halogen, e.g. carboxylic acids (containing cyclopropane carboxylic acids A01N 53/00)

- 37/02 . Saturated carboxylic acids or thio analogues thereof; Derivatives thereof
- 37/04 . . polybasic
- 37/06 . Unsaturated carboxylic acids or thio analogues thereof; Derivatives thereof
- 37/08 . containing carboxylic groups or thio analogues thereof, directly attached by the carbon atom to a cycloaliphatic ring; Derivatives thereof
- 37/10 . Aromatic or araliphatic carboxylic acids, or thio analogues thereof; Derivatives thereof
- 37/12 . containing the group $\text{-CO-O-}\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{C}}}\equiv\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{C}}}_{\text{n}}\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{Y}}}\text{:}$, wherein C_{n} means a carbon skeleton not containing a ring; Thio analogues thereof
- 37/14 . containing the group $\text{-CO-O-}\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{C}}}\equiv\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{X}}}\text{:}$; Thio analogues thereof
- 37/16 . containing the group $\text{-CO-O-}\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{Y}}}\text{:}$; Thio analogues thereof
- 37/18 . containing the group -CO-N< , e.g. carboxylic acid amides or imides; Thio analogues thereof
- 37/20 . . containing the group $\text{-CO-}\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{N}}}=\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{C}}}\equiv\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{C}}}_{\text{n}}\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{Y}}}\text{:}$, wherein C_{n} means a carbon skeleton not containing a ring; Thio analogues thereof
- 37/22 . . the nitrogen atom being directly attached to an aromatic ring system, e.g. anilides
- 37/24 . . . containing at least one oxygen or sulfur atom being directly attached to the same aromatic ring system
- 37/26 . . containing the group $\text{-CO-}\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{N}}}-\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{C}}}\equiv\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{X}}}\text{:}$; Thio analogues thereof
- 37/28 . . containing the group $\text{-CO-}\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{N}}}-\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{C}}}\equiv\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{X}}}\text{:}$; Thio analogues thereof
- 37/30 . . containing the groups -CO-N< and $\text{-C(=O)-}\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{X}}}\text{:}$, both being directly attached by their carbon atoms to the same carbon skeleton, e.g. $\text{H}_2\text{N-NH-CO-C}_6\text{H}_4\text{-COOCH}_3$; Thio-analogues thereof

- 37/32 . . Cyclic imides of polybasic carboxylic acids or thio analogues thereof
- 37/34 . Nitriles
- 37/36 . containing at least one carboxylic group or a thio analogue, or a derivative thereof, and a singly bound oxygen or sulfur atom attached to the same carbon skeleton, this oxygen or sulfur atom not being a member of a carboxylic group or of a thio analogue, or of a derivative thereof, e.g. hydroxy-carboxylic acids
- 37/38 . . having at least one oxygen or sulfur atom attached to an aromatic ring system
- 37/40 . . . having at least one carboxylic group or a thio analogue, or a derivative thereof, and one oxygen or sulfur atom attached to the same aromatic ring system
- 37/42 . containing within the same carbon skeleton a carboxylic group or a thio analogue, or a derivative thereof, and a carbon atom having only two bonds to hetero atoms with at the most one bond to halogen, e.g. keto-carboxylic acids
- 37/44 . containing at least one carboxylic group or a thio analogue, or a derivative thereof, and a nitrogen atom attached to the same carbon skeleton by a single or double bond, this nitrogen atom not being a member of a derivative or of a thio analogue of a carboxylic group, e.g. amino-carboxylic acids
- 37/46 . . N-acyl derivatives
- 37/48 . . Nitro-carboxylic acids; Derivatives thereof
- 37/50 . . the nitrogen atom being doubly bound to the carbon skeleton
- 37/52 . containing $\text{X}-\text{C}(\text{I})=\text{N}-$ groups, e.g. carboxylic acid amidines

39/00 Biocides, pest repellants or attractants, or plant growth regulator containing aryloxy- or arylthio-aliphatic or cycloaliphatic compounds, containing the group $\text{Ar}-\text{O}-\text{C}_n\text{Y}$ or $\text{Ar}-\text{S}-\text{C}_n\text{Y}$, e.g.

phenoxyethylamine, phenylthio-acetonitrile, phenoxyacetone

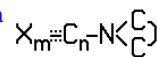
NOTE

In this group, the symbol C_n means a carbon skeleton, not containing an aromatic ring system wherein $n \geq 2$

- 39/02 . Aryloxy-carboxylic acids; Derivatives thereof
- 39/04 . . Aryloxy-acetic acids; Derivatives thereof
- 41/00 Biocides, pest repellants or attractants, or plant growth regulators containing organic compounds containing a sulfur atom bound to a hetero atom**
- 41/02 . containing a sulfur-to-oxygen double bond
- 41/04 . . Sulfonic acids; Derivatives thereof
- 41/06 . . . Sulfonic acid amides
- 41/08 . . . Sulfonic acid halides; alpha-Hydroxy-sulfonic acids; Amino-sulfonic acids; Thiosulfonic acids; Derivatives thereof
- 41/10 . . Sulfones; Sulfoxides
- 41/12 . not containing sulfur-to-oxygen bonds, e.g. polysulfides

43/00

Biocides, pest repellants or attractants, or plant growth regulators containing heterocyclic compounds (containing cyclic anhydrides, cyclic imides A01N 37/00; containing compounds of the formula



containing only one heterocyclic ring, wherein $m \geq 1$ and $n \geq 0$ and $\text{N} \begin{array}{c} \diagup \\ \diagdown \end{array} \begin{array}{c} \diagdown \\ \diagup \end{array}$ is unsubstituted or alkylsubstituted

pyrrolidine, piperidine, morpholine, thiomorpholine, piperazine or a polymethyleneimine with four or more CH_2 groups, A01N 33/00 - A01N 41/12)

NOTES

- In group A01N 43/00, the following terms or expressions are used with the meanings indicated:
 - "Hetero ring" is a ring having at least one halogen nitrogen, oxygen or sulfur atom as a ring member.
 - "Bridged" means the presence of at least one fusion other than ortho, peri and spiro.
 - Two rings are "condensed" if they share at least one ring member, i.e. "spiro" and "bridged" are considered as condensed.
 - "Condensed ring system" is a ring system in which all rings are condensed among themselves.
- In group A01N 43/00, the number of rings in a condensed system equals the number of scissions necessary to convert the ring system into one acyclic chain. The relevant rings in a condensed system are chosen according to the following criteria consecutively:
 - lowest number of ring members,
 - highest number of hetero atoms as ring members.

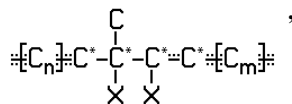
Ring members shared by two or more rings are regarded as being a member of each of these rings.

- 43/02 . having rings with one or more oxygen or sulfur atoms as the only ring hetero atoms
- 43/04 . . with one hetero atom
- 43/06 . . . five-membered rings
- 43/08 with oxygen as the ring hetero atom
- 43/10 with sulfur as the ring hetero atom
- 43/12 condensed with a carbocyclic ring
- 43/14 . . . six-membered rings
- 43/16 with oxygen as the ring hetero atom
- 43/18 with sulfur as the ring hetero atom
- 43/20 . . . three- or four-membered rings
- 43/22 . . . rings with more than six members
- 43/24 . . with two or more hetero atoms
- 43/26 . . . five-membered rings
- 43/28 with two hetero atoms in positions 1,3
- 43/30 with two oxygen atoms in positions 1,3, condensed with a carbocyclic ring
- 43/32 . . . six-membered rings
- 43/34 . having rings with one nitrogen atom as the only ring hetero atom
- 43/36 . . five-membered rings
- 43/38 . . . condensed with carbocyclic rings
- 43/40 . . six-membered rings
- 43/42 . . . condensed with carbocyclic rings

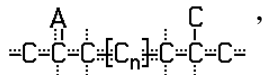
- 43/44 . . three- or four-membered rings
- 43/46 . . rings with more than six members
- 43/48 . having rings with two nitrogen atoms as the only ring hetero atoms
- 43/50 . . 1,3-Diazoles; Hydrogenated 1,3-diazoles
- 43/52 . . . condensed with carbocyclic rings, e.g. benzimidazoles
- 43/54 . . 1,3-Diazines; Hydrogenated 1,3-diazines
- 43/56 . . 1,2-Diazoles; Hydrogenated 1,2-diazoles
- 43/58 . . 1,2-Diazines; Hydrogenated 1,2-diazines
- 43/60 . . 1,4-Diazines; Hydrogenated 1,4-diazines
- 43/62 . . three- or four-membered rings or rings with more than six members
- 43/64 . having rings with three nitrogen atoms as the only ring hetero atoms
- 43/647 . . Triazoles; Hydrogenated triazoles
- 43/653 . . . 1,2,4-Triazoles; Hydrogenated 1,2,4-triazoles
- 43/66 . . 1,3,5-Triazines, not hydrogenated and not substituted at the ring nitrogen atoms
- 43/68 . . . with two or three nitrogen atoms directly attached to ring carbon atoms
- 43/70 Diamino-1,3,5-triazines with only one oxygen, sulfur or halogen atom or only one cyano, thiocyno (-SCN), cyanato (-OCN) or azido (-N₃) group directly attached to a ring carbon atom
- 43/707 . . 1,2,3- or 1,2,4-triazines; Hydrogenated 1,2,3- or 1,2,4-triazines
- 43/713 . having rings with four or more nitrogen atoms as the only ring hetero atom
- 43/72 . having rings with nitrogen atoms and oxygen or sulfur atoms as ring hetero atoms
- 43/74 . . five-membered rings with one nitrogen atom and either one oxygen atom or one sulfur atom in position 1,3
- 43/76 . . . 1,3-Oxazoles; Hydrogenated 1,3-oxazoles
- 43/78 . . . 1,3-Thiazoles; Hydrogenated 1,3-thiazoles
- 43/80 . . five-membered rings with one nitrogen atom and either one oxygen atom or one sulfur atom in positions 1,2
- 43/82 . . five-membered rings with three ring hetero atoms
- 43/84 . . six-membered rings with one nitrogen atom and either one oxygen atom or one sulfur atom in positions 1,4
- 43/86 . . six-membered rings with one nitrogen atom and either one oxygen atom or one sulfur atom in positions 1,3
- 43/88 . . six-membered rings with three ring hetero atoms
- 43/90 . having two or more relevant hetero rings, condensed among themselves or with a common carbocyclic ring system
- 43/92 . having rings with one or more halogen atoms as ring hetero atoms
- 45/00 Biocides, pest repellants or attractants, or plant growth regulators, containing compounds having three or more carbocyclic rings condensed among themselves, at least one ring not being a six-membered ring (halogenated hydrocarbons A01N 29/08; condensed with heterocyclic rings A01N 43/00)**
- 45/02 . having three carbocyclic rings

- 47/00 Biocides, pest repellants or attractants, or plant growth regulators containing organic compounds containing a carbon atom not being member of a ring and having no bond to a carbon or hydrogen atom, e.g. derivatives of carbonic acid (carbon tetrahalides A01N 29/02)**
- 47/02 . the carbon atom having no bond to a nitrogen atom
- 47/04 . . containing >N-S-C≡(Hal)₃ groups
- 47/06 . . containing -O-CO-O- groups; Thio analogues thereof
- 47/08 . the carbon atom having one or more single bonds to nitrogen atoms
- 47/10 . . Carbamic acid derivatives, i.e. containing the group -O-CO-N<; Thio analogues thereof
- 47/12 . . . containing a -O-CO-N< group, or a thio analogue thereof, neither directly attached to a ring nor the nitrogen atom being a member of a heterocyclic ring
- 47/14 Di-thio analogues thereof
- 47/16 . . . the nitrogen atom being part of a heterocyclic ring
- 47/18 . . . containing a -O-CO-N< group, or a thio analogue thereof, directly attached to a heterocyclic or cycloaliphatic ring
- 47/20 . . . N-Aryl derivatives thereof
- 47/22 . . . O-Aryl or S-Aryl esters thereof
- 47/24 . . . containing the groups $\begin{array}{c} \text{X} \\ \vdots \\ \text{X}-\text{O}-\text{CO}-\text{N} < \end{array}$, $\begin{array}{c} \text{O} \\ \vdots \\ \text{O}-\text{CO}-\text{N}-\text{X} \end{array}$ or $\begin{array}{c} \text{X} \\ \vdots \\ \text{X}-\text{S}-\text{CO}-\text{N} < \end{array}$; Thio analogues thereof
- 47/26 . . . Oxidation products of dithiocarbamic acid derivatives, e.g. thiuram sulfides
- 47/28 . . Ureas or thioureas containing the groups >N-CO-N< or >N-CS-N< (isoureas, isothioureases A01N 47/42)
- 47/30 . . . Derivatives containing the group >N-CO-N aryl or >N-CS-N-aryl
- 47/32 . . . containing >N-CO-N< or >N-CS-N< groups directly attached to a cycloaliphatic ring
- 47/34 . . . containing the groups $\begin{array}{c} \text{N} \\ \vdots \\ \text{N}-\text{CO}-\text{N}-\text{CO}- \end{array}$, e.g. $\begin{array}{c} \text{N} \\ \vdots \\ \text{N}-\text{CO}-\text{N}-\text{C}-\text{O}- \end{array}$, $\begin{array}{c} \text{N} \\ \vdots \\ \text{N}-\text{CO}-\text{N}=\text{S} \end{array}$, $\begin{array}{c} \text{N} \\ \vdots \\ \text{N}-\text{CO}-\text{N}=\text{N}- \end{array}$ or $\begin{array}{c} \text{N} \\ \vdots \\ \text{N}-\text{CO}-\text{N}-\text{C}-\text{N} < \end{array}$ biuret; Thio analogues thereof; Urea-aldehyde condensation products
- 47/36 . . . containing the group >N-CO-N< directly attached to at least one heterocyclic ring; Thio analogues thereof
- 47/38 . . . containing the group >N-CO-N< where at least one nitrogen atom is part of a heterocyclic ring; Thio analogues thereof
- 47/40 . the carbon atom having a double or triple bond to nitrogen, e.g. cyanates, cyanamides (inorganic cyanamides A01N 59/24)
- 47/42 . . containing -N=CX₂ groups, e.g. isothiurea
- 47/44 . . . Guanidine; Derivatives thereof
- 47/46 . . containing -N=C=S groups
- 47/48 . . containing -S-C≡N groups (A01N 43/00 - A01N 47/38 take precedence)

49/00 Biocides, pest repellants or attractants, or plant growth regulators, containing compounds containing the group



wherein $m+n \geq 1$, both X together may also mean -Y- or a direct carbon-to-carbon bond, and the carbon atoms marked with an asterisk are not part of any ring system other than that which may be formed by the atoms X, the carbon atoms in square brackets being part of any acyclic or cyclic structure, or the group



wherein A means a carbon atom or Y, $n \geq 0$, and not more than one of these carbon atoms being a member of the same ring system, e.g. juvenile insect hormones or mimics thereof (containing hydrocarbons [A01N 27/00](#))

NOTE

Group [A01N 49/00](#) is intended to cover insect hormones

51/00 Biocides, pest repellants or attractants, or plant growth regulators containing organic compounds having the sequences of atoms O-N-S, X-O-S, N-N-S, O-N-N or O-halogen, regardless of the number of bonds each atom has and with no atom of these sequences forming part of a heterocyclic ring

53/00 Biocides, pest repellants or attractants, or plant growth regulators containing cyclopropane carboxylic acids or derivatives thereof

55/00 Biocides, pest repellants or attractants, or plant growth regulators, containing organic compounds containing elements other than carbon, hydrogen, halogen, oxygen, nitrogen and sulfur (containing organo-phosphorus compounds [A01N 57/00](#))

55/02 . containing metal atoms

55/04 . . Tin

55/06 . . Mercury

55/08 . containing boron

57/00 Biocides, pest repellants or attractants, or plant growth regulators containing organic phosphorus compounds

57/02 . having alternatively specified atoms bound to the phosphorus atom and not covered by a single one of groups [A01N 57/10](#), [A01N 57/18](#), [A01N 57/26](#), [A01N 57/34](#)

57/04 . . containing acyclic or cycloaliphatic radicals

57/06 . . containing aromatic radicals

57/08 . . containing heterocyclic radicals

57/10 . having phosphorus-to-oxygen bonds or phosphorus-to-sulfur bonds ([A01N 57/02](#) takes precedence)

57/12 . . containing acyclic or cycloaliphatic radicals

57/14 . . containing aromatic radicals

57/16 . . containing heterocyclic radicals

57/18 . having phosphorus-to-carbon bonds ([A01N 57/02](#) takes precedence)

57/20 . . containing acyclic or cycloaliphatic radicals

57/22 . . containing aromatic radicals

57/24 . . containing heterocyclic radicals

57/26 . having phosphorus-to-nitrogen bonds ([A01N 57/02](#) takes precedence)

57/28 . . containing acyclic or cycloaliphatic radicals

57/30 . . containing aromatic radicals

57/32 . . containing heterocyclic radicals

57/34 . having phosphorus-to-halogen bonds; Phosphonium salts

57/36 . having phosphorus as a ring member

59/00 Biocides, pest repellants or attractants, or plant growth regulators containing elements or inorganic compounds

59/02 . Sulfur; Selenium; Tellurium; Compounds thereof

59/04 . Carbon disulfide; Carbon monoxide; Carbon dioxide (treatment of plants with carbon dioxide [A01G 7/02](#))

59/06 . Aluminium; Calcium; Magnesium; Compounds thereof

59/08 . Alkali metal chlorides; Alkaline earth metal chlorides

59/10 . Fluorides

59/12 . Iodine, e.g. iodophors; Compounds thereof

59/14 . Boron; Compounds thereof

59/16 . Heavy metals; Compounds thereof

59/18 . . Mercury

59/20 . . Copper

59/22 . . Arsenic

59/24 . Cyanogen or compounds thereof, e.g. hydrogen cyanide, cyanic acid, cyanamide, thiocyanic acid

59/26 . Phosphorus; Compounds thereof

61/00 Biocides, pest repellants or attractants, or plant growth regulators containing substances of unknown or undetermined composition, e.g. substances characterised only by the mode of action

61/02 . Mineral oils; Tar oils; Tar; Distillates, extracts or conversion products thereof (containing single chemical compounds isolated from these materials [A01N 27/00](#) - [A01N 59/00](#))

63/00 Biocides, pest repellants or attractants, or plant growth regulators containing micro-organisms, viruses, microbial fungi, enzymes, fermentates or substances produced by, or extracted from, micro-organisms or animal material (containing compounds of determined constitution [A01N 27/00](#) - [A01N 59/00](#))

63/02 . Fermentates or substances produced by, or extracted from, micro-organisms or animal material

63/04 . Microbial fungi or extracts thereof

65/00 Biocides, pest repellants or attractants, or plant growth regulators containing material from algae, lichens, bryophyta, multi-cellular fungi or plants, or extracts thereof (containing compounds of determined constitution [A01N 27/00](#) - [A01N 59/00](#))

WARNING

Groups [A01N 65/03](#) - [A01N 65/48](#), with the exception of [A01N 65/385](#), are incomplete. See also group [A01N 65/00](#).

65/03 . Algae

65/04 . Pteridophyta [fern allies]; Filicophyta [ferns]

65/06 . Coniferophyta [gymnosperms], e.g. cypress

- 65/08 . Magnoliopsida [dicotyledons]
- 65/10 . . Apiaceae or Umbelliferae [Carrot family], e.g. parsley, caraway, dill, lovage, fennel or snakebed
- 65/12 . . Asteraceae or Compositae [Aster or Sunflower family], e.g. daisy, pyrethrum, artichoke, lettuce, sunflower, wormwood or tarragon
- 65/14 . . Celastraceae [Staff-tree or Bittersweet family], e.g. spindle tree, bittersweet or thunder god vine
- 65/16 . . Ericaceae [Heath or Blueberry family], e.g. rhododendron, arbutus, pieris, cranberry or bilberry
- 65/18 . . Euphorbiaceae [Spurge family], e.g. ricinus [castorbean]
- 65/20 . . Fabaceae or Leguminosae [Pea or Legume family], e.g. pea, lentil, soybean, clover, acacia, honey locust, derris or millettia
- 65/22 . . Lamiaceae or Labiatae [Mint family], e.g. thyme, rosemary, skullcap, selfheal, lavender, perilla, pennyroyal, peppermint or spearmint
- 65/24 . . Lauraceae [Laurel family], e.g. laurel, avocado, sassafras, cinnamon or camphor
- 65/26 . . Meliaceae [Chinaberry or Mahogany family], e.g. mahogany, langsat or neem
- 65/28 . . Myrtaceae [Myrtle family], e.g. teatree or clove
- 65/30 . . Polygonaceae [Buckwheat family], e.g. red-knees or rhubarb
- 65/32 . . Ranunculaceae [Buttercup family], e.g. hepatica, hydrastis or goldenseal
- 65/34 . . Rosaceae [Rose family], e.g. strawberry, hawthorn, plum, cherry, peach, apricot or almond
- 65/36 . . Rutaceae [Rue family], e.g. lime, orange, lemon, corktree or pricklyash
- 65/38 . . Solanaceae [Potato family], e.g. nightshade, tomato, tobacco or chilli pepper
- 65/385 . . . {Tobacco}
- 65/40 . Liliopsida [monocotyledons]
- 65/42 . . Aloeaceae [Aloe family] or Liliaceae [Lily family], e.g. aloe, veratrum, onion, garlic or chives
- 65/44 . . Poaceae or Gramineae [Grass family], e.g. bamboo, lemon grass or citronella grass
- 65/46 . . Stemonaceae [Stemona family], e.g. croomia
- 65/48 . . Zingiberaceae [Ginger family], e.g. ginger or galangal

2300/00 Combinations or mixtures of active ingredients covered by classes [A01N 27/00](#) - [A01N 65/48](#) with other active or formulation relevant ingredients, e.g. specific carrier materials or surfactants, covered by classes [A01N 25/00](#) - [A01N 65/48](#)