

# CPC COOPERATIVE PATENT CLASSIFICATION

## A HUMAN NECESSITIES

### AGRICULTURE

#### A01 AGRICULTURE; FORESTRY; ANIMAL HUSBANDRY; HUNTING; TRAPPING; FISHING

#### A01N PRESERVATION OF BODIES OF HUMANS OR ANIMALS OR PLANTS OR PARTS THEREOF (preservation of food or foodstuff [A23](#)); BIOCIDES, e.g. AS DISINFECTANTS, AS PESTICIDES OR AS HERBICIDES (preparations for medical, dental or toiletry purposes which kill or prevent the growth or proliferation of unwanted organisms [A61K](#)); PEST REPELLANTS OR ATTRACTANTS; PLANT GROWTH REGULATORS

##### NOTES

- 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, whereas sex sterilants for other purposes are covered by [A61K](#).
- 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](#).
- 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.
- Biocidal, pest repellent, pest attractant or plant growth regulatory activity of compounds or preparations is further classified in subclass [A01P](#).
- {In this subclass, combination sets [C-Sets] are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the Definitions.}

##### WARNING

The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

|                             |            |                            |
|-----------------------------|------------|----------------------------|
| <a href="#">A01N 43/824</a> | covered by | <a href="#">A01N 43/82</a> |
| <a href="#">A01N 43/828</a> | covered by | <a href="#">A01N 43/82</a> |
| <a href="#">A01N 43/832</a> | covered by | <a href="#">A01N 43/82</a> |
| <a href="#">A01N 43/836</a> | covered by | <a href="#">A01N 43/82</a> |
| <a href="#">A01N 53/02</a>  | covered by | <a href="#">A01N 53/00</a> |
| <a href="#">A01N 53/04</a>  | covered by | <a href="#">A01N 53/00</a> |
| <a href="#">A01N 53/06</a>  | covered by | <a href="#">A01N 53/00</a> |
| <a href="#">A01N 53/08</a>  | covered by | <a href="#">A01N 53/00</a> |
| <a href="#">A01N 53/10</a>  | covered by | <a href="#">A01N 53/00</a> |
| <a href="#">A01N 53/12</a>  | covered by | <a href="#">A01N 53/00</a> |
| <a href="#">A01N 53/14</a>  | covered by | <a href="#">A01N 53/00</a> |
| <a href="#">A01N 55/10</a>  | covered by | <a href="#">A01N 55/00</a> |

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

##### 1/00 Preservation of bodies of humans or animals, or parts thereof

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}
- 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} (preservation or chemical ripening of fruit or vegetables [A23B 7/00](#)); Grafting wax**

- 3/02 . Keeping cut flowers fresh chemically
- 3/04 . Grafting-wax

**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](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, an active ingredient is classified in the last appropriate place.
- A composition, i.e. a mixture of two or more active ingredients is classified in the last of groups [A01N 27/00](#) - [A01N 65/00](#) that provides for at least one of these active ingredients.
- Any part of a composition which is not identified by the classification according to Note (3), and which itself is determined to be novel and non-obvious, must also be classified in the last

- appropriate place in groups [A01N 27/00](#) - [A01N 65/00](#). The part can be either a single ingredient or a composition in itself.
- Any part of a composition which is not identified by the classification according to Note (3) or (4), and which is considered to represent information of interest for search, may also be classified in the last appropriate place in groups [A01N 27/00](#) - [A01N 65/00](#). This can, for example, be the case when it is considered of interest to enable searching of compositions using a combination of classification symbols. Such non-obligatory classification should be given as "additional information".
  - 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.
  - 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.

**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}; Substances for reducing the noxious effect of the active ingredients to organisms other than pests**

**NOTE**

{In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of [A01N](#).}

- 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

|              |   |              |  |
|--------------|---|--------------|--|
| 25/20        | . Combustible or heat-generating compositions   | 31/16        | . . with two or more oxygen or sulfur atoms directly attached to the same aromatic ring system   |
| 25/22        | . containing ingredients stabilising the active ingredients   |              |  |
| 25/24        | . containing ingredients to enhance the sticking of the active ingredients  | <b>33/00</b> | <b>Biocides, pest repellants or attractants, or plant growth regulators containing organic nitrogen compounds</b>  |
| 25/26        | . in coated particulate form  | <b>NOTE</b>  | {In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of <a href="#">A01N</a> .}                              |
| 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                          | 33/02        | . Amines; Quaternary ammonium compounds  |
| 25/34        | . Shaped forms, e.g. sheets, not provided for in any other sub-group of this main group   | 33/04        | . . Nitrogen directly attached to aliphatic or cycloaliphatic carbon atoms   |
| <b>27/00</b> | <b>Biocides, pest repellants or attractants, or plant growth regulators containing hydrocarbons</b>   | 33/06        | . . Nitrogen directly attached to an aromatic ring system  |
| <b>NOTE</b>  | {In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of <a href="#">A01N</a> .} | 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  |
| <b>29/00</b> | <b>Biocides, pest repellants or attractants, or plant growth regulators containing halogenated hydrocarbons</b>   | 33/20        | . . . containing oxygen or sulfur attached to the carbon skeleton containing the nitro group   |
| <b>NOTE</b>  | {In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of <a href="#">A01N</a> .} | 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   |
| 29/02        | . Acyclic compounds or compounds containing halogen attached to an aliphatic side-chain of a cycloaliphatic ring system   | 33/26        | . containing nitrogen-to-nitrogen bonds, e.g. azides, diazo-amino compounds, diazonium compounds, hydrazine derivatives  |
| 29/04        | . Halogen directly attached to a carbocyclic ring system  | <b>35/00</b> | <b>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</b> |
| 29/06        | . . Hexachlorocyclohexane   | <b>NOTE</b>  | {In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of <a href="#">A01N</a> .}                              |
| 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  | 35/02        | . containing aliphatically bound aldehyde or keto groups, or thio analogues thereof; Derivatives thereof, e.g. acetals   |
| <b>31/00</b> | <b>Biocides, pest repellants or attractants, or plant growth regulators containing organic oxygen or sulfur compounds</b>   | 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  |
| <b>NOTE</b>  | {In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of <a href="#">A01N</a> .} | 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   |
| 31/02        | . Acyclic compounds   | 35/10        | . . containing a carbon-to-nitrogen double bond  |
| 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  |              |  |

- 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 or derivatives thereof, e.g. cyclopropane carboxylic acid nitriles, A01N 53/00)**
- NOTE**  
{In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of A01N.}
- 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  $\text{-CO-O-C}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix} \text{C}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix} \text{Y}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix}$ , wherein  $\text{C}_n$  means a carbon skeleton not containing a ring; Thio analogues thereof
- 37/14 . containing the group  $\text{-CO-O-C}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix} \text{X}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix}$ ; Thio analogues thereof
- 37/16 . containing the group  $\text{-CO-O-Y}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix}$ ; Thio analogues thereof
- 37/18 . containing the group  $\text{-CO-N}<$ , e.g. carboxylic acid amides or imides; Thio analogues thereof
- 37/20 . . containing the group  $\text{-CO-N}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix} \text{C}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix} \text{Y}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix}$ , wherein  $\text{C}_n$  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  $\text{-CO-N}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix} \text{C}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix} \text{X}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix}$ ; Thio analogues thereof
- 37/28 . . containing the group  $\text{-CO-N}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix} \text{X}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix}$ ; Thio analogues thereof
- 37/30 . . containing the groups  $\text{-CO-N}<$  and  $\begin{smallmatrix} \text{O} \\ \vdots \\ \text{C}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix} \text{X}\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix} \end{smallmatrix}$ , 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  $\text{:X-C=N-}$  groups, e.g. carboxylic acid amidines
- 39/00 Biocides, pest repellants or attractants, or plant growth regulators containing aryloxy- or arylthioaliphatic or cycloaliphatic compounds, containing the group  $\text{Ar-O-C}_n\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix} \text{Y}$  or  $\text{Ar-S-C}_n\begin{smallmatrix} \vdots \\ \vdots \end{smallmatrix} \text{Y}$ , e.g. phenoxyethylamine, phenylthio-acetonitrile, phenoxyacetone**
- NOTES**
- In this group, the symbol  $\text{C}_n$  means a carbon skeleton, not containing an aromatic ring system wherein  $n \geq 2$
  - {In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of A01N.}
- 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**
- NOTE**  
{In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of A01N.}
- 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  | 43/30  | . . . . . with two oxygen atoms in positions 1,3, condensed with a carbocyclic ring   |
| 41/12        | . not containing sulfur-to-oxygen bonds, e.g. polysulfides  | 43/32  | . . . six-membered rings  |
| <b>43/00</b> | <b>Biocides, pest repellants or attractants, or plant growth regulators containing heterocyclic compounds</b> (containing cyclic anhydrides, cyclic imides <a href="#">A01N 37/00</a> ; containing compounds of the formula $X_m \equiv C_n - N \left\langle \begin{array}{c} \text{C} \\ \text{C} \end{array} \right\rangle$ containing only one heterocyclic ring, wherein $m \geq 1$ and $n \geq 0$ and $-N \left\langle \begin{array}{c} \text{C} \\ \text{C} \end{array} \right\rangle$ is unsubstituted or alkylsubstituted pyrrolidine, piperidine, morpholine, thiomorpholine, piperazine or a polymethyleneimine with four or more $CH_2$ groups, <a href="#">A01N 33/00</a> - <a href="#">A01N 41/12</a> ; containing cyclopropane carboxylic acids or derivatives thereof, e.g. esters having heterocyclic rings, <a href="#">A01N 53/00</a> ) | 43/34  | . having rings with one nitrogen atom as the only ring hetero atom  |
|              | <b>NOTES</b>  | 43/36  | . . five-membered rings   |
|              | 1. In group <a href="#">A01N 43/00</a> , the following terms or expressions are used with the meanings indicated:   | 43/38  | . . . condensed with carbocyclic rings  |
|              | • "Hetero ring" is a ring having at least one halogen nitrogen, oxygen or sulfur atom as a ring member.   | 43/40  | . . six-membered rings  |
|              | • "Bridged" means the presence of at least one fusion other than ortho, peri and spiro.   | 43/42  | . . . condensed with carbocyclic rings  |
|              | • Two rings are "condensed" if they share at least one ring member, i.e. "spiro" and "bridged" are considered as condensed.   | 43/44  | . . three- or four-membered rings   |
|              | • "Condensed ring system" is a ring system in which all rings are condensed among themselves.   | 43/46  | . . rings with more than six members  |
|              | 2. In group <a href="#">A01N 43/00</a> , 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:   | 43/48  | . having rings with two nitrogen atoms as the only ring hetero atoms  |
|              | i. lowest number of ring members,   | 43/50  | . . 1,3-Diazoles; Hydrogenated 1,3-diazoles   |
|              | ii. highest number of hetero atoms as ring members.   | 43/52  | . . . condensed with carbocyclic rings, e.g. benzimidazoles   |
|              | Ring members shared by two or more rings are regarded as being a member of each of these rings.   | 43/54  | . . 1,3-Diazines; Hydrogenated 1,3-diazines   |
|              | 3. {In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of <a href="#">A01N</a> .}  | 43/56  | . . 1,2-Diazoles; Hydrogenated 1,2-diazoles   |
| 43/02        | . having rings with one or more oxygen or sulfur atoms as the only ring hetero atoms  | 43/58  | . . 1,2-Diazines; Hydrogenated 1,2-diazines   |
| 43/04        | . . with one hetero atom  | 43/60  | . . 1,4-Diazines; Hydrogenated 1,4-diazines   |
| 43/06        | . . . five-membered rings   | 43/62  | . . three- or four-membered rings or rings with more than six members   |
| 43/08        | . . . . with oxygen as the ring hetero atom   | 43/64  | . having rings with three nitrogen atoms as the only ring hetero atoms  |
| 43/10        | . . . . with sulfur as the ring hetero atom   | 43/67  | . . Triazoles; Hydrogenated triazoles   |
| 43/12        | . . . . condensed with a carbocyclic ring   | 43/65  | . . . 1,2,4-Triazoles; Hydrogenated 1,2,4-triazoles   |
| 43/14        | . . . six-membered rings  | 43/66  | . . 1,3,5-Triazines, not hydrogenated and not substituted at the ring nitrogen atoms  |
| 43/16        | . . . . with oxygen as the ring hetero atom   | 43/68  | . . . with two or three nitrogen atoms directly attached to ring carbon atoms   |
| 43/18        | . . . . with sulfur as the ring hetero atom   | 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 (—N <sub>3</sub> ) group directly attached to a ring carbon atom |
| 43/20        | . . . three- or four-membered rings   | 43/707 | . . 1,2,3- or 1,2,4-triazines; Hydrogenated 1,2,3- or 1,2,4-triazines   |
| 43/22        | . . . rings with more than six members  | 43/713 | . having rings with four or more nitrogen atoms as the only ring hetero atoms   |
| 43/24        | . . with two or more hetero atoms   | 43/72  | . having rings with nitrogen atoms and oxygen or sulfur atoms as ring hetero atoms  |
| 43/26        | . . . five-membered rings   | 43/74  | . . five-membered rings with one nitrogen atom and either one oxygen atom or one sulfur atom in positions 1,3   |
| 43/28        | . . . . with two hetero atoms in positions 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](#))**
- NOTE**
- {In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of [A01N](#).}
- 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](#))**
- NOTE**
- {In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of [A01N](#).}
- 47/02 . . . the carbon atom having no bond to a nitrogen atom
- 47/04 . . . containing  $>N-S-C\equiv(Hal)_3$  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  $\begin{matrix} \text{X} \\ \vdots \\ \text{X}-O-CO-N< \end{matrix}$  ,  
 $\begin{matrix} \text{O} \\ \vdots \\ -O-CO-N-\text{X} \end{matrix}$  or  $\begin{matrix} \text{X} \\ \vdots \\ \text{X}-S-CO-N< \end{matrix}$  ; 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, isothioureas* [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  $>N-CO-N-CO-$  , e.g.  
 $>N-CO-N-\overset{\text{C}}{\underset{\text{O}}{\text{C}}}-O-$  ,  $>N-CO-N=\overset{\text{S}}{\text{S}}\dots$  ,  
 $>N-CO-N=\overset{\text{N}}{\text{N}}-$  or  $>N-CO-N-\overset{\text{C}}{\underset{\text{N}}{\text{C}}}-N<$   
 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
- 47/42 . . . containing  $-N=CX_2$  groups, e.g. isothiourea
- 47/44 . . . Guanidine; Derivatives thereof
- 47/46 . . . containing  $-N=C=S$  groups
- 47/48 . . . containing  $-S-C\equiv N$  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**
- $$\begin{matrix} \text{C} \\ \vdots \\ \text{C}^* \\ \vdots \\ \text{X} \end{matrix} - \begin{matrix} \text{C}^* \\ \vdots \\ \text{X} \end{matrix} - \text{C}^* = \text{C}^* = \text{C}^* \text{---} \begin{matrix} \text{C}_m \\ \vdots \\ \text{C}_m \end{matrix}$$
- 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
- $$\begin{matrix} \text{A} & & \text{C} \\ \vdots & & \vdots \\ \text{C} & \text{---} & \text{C} & \text{---} & \text{C} \\ \vdots & & \vdots & & \vdots \\ \text{C} & \text{---} & \text{C} & \text{---} & \text{C} \end{matrix}$$
- 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 \[A01N 27/00\]\(#\)](#))
- NOTES**
- Group [A01N 49/00](#) is intended to cover insect hormones.
  - {In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of [A01N](#).}
- 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**
- NOTE**
- {In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of [A01N](#).}

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

{In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of [A01N](#).}

**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](#))****NOTE**

{In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of [A01N](#).}

- 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****NOTE**

{In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of [A01N](#).}

- 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****NOTE**

{In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of [A01N](#).}

- 59/02 . Sulfur; Selenium; Tellurium; Compounds thereof
- 59/04 . Carbon disulfide; Carbon monoxide; Carbon dioxide
- 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****NOTE**

{In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of [A01N](#).}

- 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 microorganisms, viruses, microbial fungi, animals or substances produced by, or obtained from, microorganisms, viruses, microbial fungi or animals, e.g. enzymes or fermentates (containing compounds of determined constitution [A01N 27/00 - A01N 59/00](#); unicellular algae [A01N 65/03](#))****NOTES**

1. In this main group and its indented subgroups, the last place priority rule is not applied, i.e. the common rule is applied.
2. {In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of [A01N](#).}

- 63/10 . Animals; Substances produced thereby or obtained therefrom
- 63/12 . . Nematodes
- 63/14 . . Insects

- 63/16 . . Arachnids
- 63/20 . Bacteria; Substances produced thereby or obtained therefrom
- 63/22 . . Bacillus
- 63/23 . . . B. thuringiensis
- 63/25 . . Paenibacillus
- 63/27 . . Pseudomonas
- 63/28 . . Streptomyces
- 63/30 . Microbial fungi; Substances produced thereby or obtained therefrom
- 63/32 . . Yeast
- 63/34 . . Aspergillus
- 63/36 . . Penicillium
- 63/38 . . Trichoderma
- 63/40 . Viruses, e.g. bacteriophages
- 63/50 . Isolated enzymes; Isolated proteins (peptides [A01N 37/46](#))

**NOTE**

{In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of [A01N](#).}

- 63/60 . Isolated nucleic acids

**NOTE**

{In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of [A01N](#).}

- 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](#))**

**NOTE**

{In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules is found in the Definitions of [A01N](#).}

- 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](#)**

**NOTE**

[A01N 2300/00](#) is only used as a subsequent symbol in C-Sets and should not be allocated as a single symbol. Detailed information about C-Sets construction and the associated syntax rules is present in the Definitions of [A01N 27/00](#).