

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](#))

NOTE

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](#)).

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.

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](#)

Guidance heading: Preservation of bodies of humans or animals, or plants, or parts thereof

A01N 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](#))

A01N 1/02	. Preservation of living parts
	<u>WARNING</u>
	Subgroups A01N 1/02C-A01N 1/0294 are not complete, due to a reorganisation in progress
A01N 1/0205	.. { Chemical aspects }
	<u>WARNING</u>
	This group contains documents to be reclassified into subgroups A01N 1/021-A01N/02P6
A01N 1/021	... { Preservation or perfusion media, liquids, solids or gases used in the preservation of cells, tissue, organs or bodily fluids }
A01N 1/0215	.... { Disinfecting agents, e.g. antimicrobials for preserving living parts }
A01N 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 }
A01N 1/0226	.... { Physiologically active agents, i.e. substances affecting physiological processes of cells and tissue to be preserved, e.g. anti-oxidants or nutrients }
A01N 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 }
A01N 1/0236	.. { Mechanical aspects }
A01N 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 }
A01N 1/0247	.... { for perfusion, i.e. for circulating fluid through organs, blood vessels or other living parts }
A01N 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 }
A01N 1/0257	..... { Stationary or portable vessels generating cryogenic temperatures }
A01N 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) }
A01N 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 }
A01N 1/0273	.... { Transport containers (A01N 1/0268 takes precedence) }
A01N 1/0278	.. { Physical preservation processes }
A01N 1/0284	... { Temperature processes, i.e. using a designated change in temperature over time }
A01N 1/0289	... { Pressure processes, i.e. using a designated change in pressure over time }
A01N 1/0294	... { Electromagnetic, i.e. using electromagnetic radiation or electromagnetic fields }
A01N 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**

[A01N 3/02](#)

- . Keeping cut flowers fresh chemically (apparatus therefor [A01G 5/06](#))

[A01N 3/04](#)

- . Grafting-wax

NOTE

Attention is drawn to the definitions of groups of chemical elements following the title of section C.

In groups [A01N 27/00](#) to [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.

In groups [A01N 25/00](#) to [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.

In groups [A01N 25/00](#) to [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).

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.

Guidance heading: Biocides; Pest repellants or attractants; Plant growth regulators

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

- A01N 27/00** **Biocides, pest repellants or attractants, or plant growth regulators containing hydrocarbons**
- A01N 29/00** **Biocides, pest repellants or attractants, or plant growth regulators containing halogenated hydrocarbons**
- A01N 29/02 . Acyclic compounds or compounds containing halogen attached to an aliphatic side-chain of a cycloaliphatic ring system
- A01N 29/04 . Halogen directly attached to a carbocyclic ring system
- A01N 29/06 . . Hexachlorocyclohexane
- A01N 29/08 . . Halogen directly attached to a polycyclic ring system
- A01N 29/10 . Halogen attached to an aliphatic side chain of an aromatic ring system
- A01N 29/12 . . 1,1-Di- or 1,1,1-trihalo-2-aryl-ethane or -ethene or derivatives thereof, e.g. DDT
- A01N 31/00** **Biocides, pest repellants or attractants, or plant growth regulators containing organic oxygen or sulfur compounds**
- A01N 31/02 . Acyclic compounds
- A01N 31/04 . Oxygen or sulfur attached to an aliphatic side-chain of a carbocyclic ring system
- A01N 31/06 . Oxygen or sulfur directly attached to a cycloaliphatic ring system
- A01N 31/08 . Oxygen or sulfur directly attached to an aromatic ring system
- A01N 31/10 . . Pentachlorophenol
- A01N 31/12 . . Bis-chlorophenols
- A01N 31/14 . . Ethers
- A01N 31/16 . . with two or more oxygen or sulfur atoms directly attached to the same aromatic ring system
- A01N 33/00** **Biocides, pest repellants or attractants, or plant growth regulators containing organic nitrogen compounds**
- A01N 33/02 . Amines; Quaternary ammonium compounds
- A01N 33/04 . . Nitrogen directly attached to aliphatic or cycloaliphatic carbon atoms
- A01N 33/06 . . Nitrogen directly attached to an aromatic ring system
- A01N 33/08 . . containing oxygen or sulfur
- A01N 33/10 . . . having at least one oxygen or sulfur atom directly attached to an aromatic ring system
- A01N 33/12 . . Quaternary ammonium compounds
- A01N 33/14 . containing nitrogen-to-halogen bonds
- A01N 33/16 . containing nitrogen-to-oxygen bonds

- A01N 33/18 . . Nitro compounds
- A01N 33/20 . . . containing oxygen or sulfur attached to the carbon skeleton containing the nitro group
- A01N 33/22 having at least one oxygen or sulfur atom and at least one nitro group directly attached to the same aromatic ring system
- A01N 33/24 . . only one oxygen atom attached to the nitrogen atom
- A01N 33/26 . containing nitrogen-to-nitrogen bonds, e.g. azides, diazo-amino compounds, diazonium compounds, hydrazine derivatives
- A01N 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**
- A01N 35/02 . containing aliphatically bound aldehyde or keto groups, or thio analogues thereof; Derivatives thereof, e.g. acetals
- A01N 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
- A01N 35/06 . containing keto or thioketo groups as part of a ring, e.g. cyclohexanone, quinone; Derivatives thereof, e.g. ketals
- A01N 35/08 . at least one of the bonds to hetero atoms is to nitrogen
- A01N 35/10 . . containing a carbon-to-nitrogen double bond
- A01N 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](#))**
- A01N 37/02 . Saturated carboxylic acids or thio analogues thereof; Derivatives thereof
- A01N 37/04 . . polybasic
- A01N 37/06 . Unsaturated carboxylic acids or thio analogues thereof; Derivatives thereof
- A01N 37/08 . containing carboxylic groups or thio analogues thereof, directly attached by the carbon atom to a cycloaliphatic ring; Derivatives thereof
- A01N 37/10 . Aromatic or araliphatic carboxylic acids, or thio analogues thereof; Derivatives thereof
- A01N 37/12 . containing the group $\text{-CO-O-C-C}_n\text{-Y}$, wherein C_n means a carbon skeleton not containing a ring; Thio analogues thereof
- A01N 37/14 . containing the group -CO-O-C-X ; Thio analogues thereof
- A01N 37/16 . containing the group -CO-O-Y ; Thio analogues thereof

- A01N 37/18 . containing the group -CO-N , e.g. carboxylic acid amides or imides; Thio analogues thereof
- A01N 37/20 . . containing the group $\text{-CO-N-C}\equiv\text{C}_n\text{-Y}$, wherein Cn means a carbon skeleton not containing a ring; Thio analogues thereof
- A01N 37/22 . . the nitrogen atom being directly attached to an aromatic ring system, e.g. anilides
- A01N 37/24 . . . containing at least one oxygen or sulfur atom being directly attached to the same aromatic ring system
- A01N 37/26 . . containing the group -CO-N-C-X ; Thio analogues thereof
- A01N 37/28 . . containing the group -CO-N-X ; Thio analogues thereof
- A01N 37/30 . . containing the groups -CO-N and -C(=O)-X , both being directly attached by their carbon atoms to the same carbon skeleton, e.g. H₂N-NH-CO-C₆H₄-COOCH₃; Thio-analogues thereof
- A01N 37/32 . . Cyclic imides of polybasic carboxylic acids or thio analogues thereof
- A01N 37/34 . Nitriles
- A01N 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
- A01N 37/38 . . having at least one oxygen or sulfur atom attached to an aromatic ring system
- A01N 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
- A01N 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
- A01N 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
- A01N 37/46 . . N-acyl derivatives
- A01N 37/48 . . Nitro-carboxylic acids; Derivatives thereof
- A01N 37/50 . . the nitrogen atom being doubly bound to the carbon skeleton
- A01N 37/52 . containing :X-C=N- groups, e.g. carboxylic acid amidines
- A01N 39/00 Biocides, pest repellants or attractants, or plant growth regulator containing aryloxy- or arylthio-aliphatic or cycloaliphatic compounds, containing the group $\text{Ar-O-C}_n\text{-Y}$ or $\text{Ar-S-C}_n\text{-Y}$, e.g. phenoxyethylamine, phenylthio-acetonitrile, phenoxyacetone. In this group, the symbol Cn means a carbon skeleton, not containing an aromatic ring system wherein n>=2**
- A01N 39/02 . Aryloxy-carboxylic acids; Derivatives thereof

A01N 39/04 . . Aryloxy-acetic acids; Derivatives thereof

A01N 41/00 Biocides, pest repellants or attractants, or plant growth regulators containing organic compounds containing a sulfur atom bound to a hetero atom

A01N 41/02 . containing a sulfur-to-oxygen double bond

A01N 41/04 . . Sulfonic acids; Derivatives thereof

A01N 41/06 . . . Sulfonic acid amides

A01N 41/08 . . . Sulfonic acid halides; alpha-Hydroxy-sulfonic acids; Amino-sulfonic acids; Thiosulfonic acids; Derivatives thereof

A01N 41/10 . . Sulfones; Sulfoxides

A01N 41/12 . not containing sulfur-to-oxygen bonds, e.g. polysulfides

A01N 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 $X_m=C_n-N\begin{smallmatrix} \diagup C \\ \diagdown C \end{smallmatrix}$ containing only one heterocyclic ring, wherein $m \geq 1$ and $n \geq 0$ and $-N\begin{smallmatrix} \diagup C \\ \diagdown C \end{smallmatrix}$ is unsubstituted or alkylsubstituted pyrrolidine, piperidine, morpholine, thiomorpholine, piperazine or a polymethyleneimine with four or more CH₂ groups, [A01N 33/00](#) to [A01N 41/12](#))

NOTE

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.

A01N 43/02 . having rings with one or more oxygen or sulfur atoms as the only ring hetero atoms

A01N 43/04 . . with one hetero atom

A01N 43/06 . . . five-membered rings

A01N 43/08	....	with oxygen as the ring hetero atom
A01N 43/10	....	with sulfur as the ring hetero atom
A01N 43/12	....	condensed with a carbocyclic ring
A01N 43/14	...	six-membered rings
A01N 43/16	....	with oxygen as the ring hetero atom
A01N 43/18	....	with sulfur as the ring hetero atom
A01N 43/20	...	three- or four-membered rings
A01N 43/22	...	rings with more than six members
A01N 43/24	..	with two or more hetero atoms
A01N 43/26	...	five-membered rings
A01N 43/28	....	with two hetero atoms in positions 1,3
A01N 43/30	.....	with two oxygen atoms in positions 1,3, condensed with a carbocyclic ring
A01N 43/32	...	six-membered rings
A01N 43/34	.	having rings with one nitrogen atom as the only ring hetero atom
A01N 43/36	..	five-membered rings
A01N 43/38	...	condensed with carbocyclic rings
A01N 43/40	..	six-membered rings
A01N 43/42	...	condensed with carbocyclic rings
A01N 43/44	..	three- or four-membered rings
A01N 43/46	..	rings with more than six members
A01N 43/48	.	having rings with two nitrogen atoms as the only ring hetero atoms
A01N 43/50	..	1,3-Diazoles; Hydrogenated 1,3-diazoles
A01N 43/52	...	condensed with carbocyclic rings, e.g. benzimidazoles
A01N 43/54	..	1,3-Diazines; Hydrogenated 1,3-diazines
A01N 43/56	..	1,2-Diazoles; Hydrogenated 1,2-diazoles
A01N 43/58	..	1,2-Diazines; Hydrogenated 1,2-diazines
A01N 43/60	..	1,4-Diazines; Hydrogenated 1,4-diazines
A01N 43/62	..	three- or four-membered rings or rings with more than six members
A01N 43/64	.	having rings with three nitrogen atoms as the only ring hetero atoms
A01N 43/647	..	Triazoles; Hydrogenated triazoles
A01N 43/653	...	1,2,4-Triazoles; Hydrogenated 1,2,4-triazoles
A01N 43/66	..	1,3,5-Triazines, not hydrogenated and not substituted at the ring nitrogen atoms
A01N 43/68	...	with two or three nitrogen atoms directly attached to ring carbon atoms
A01N 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 ₃) group directly attached to a ring carbon atom
A01N 43/707	..	1,2,3- or 1,2,4-triazines; Hydrogenated 1,2,3- or 1,2,4-triazines
A01N 43/713	.	having rings with four or more nitrogen atoms as the only ring hetero atom
A01N 43/72	.	having rings with nitrogen atoms and oxygen or sulfur atoms as ring hetero atoms
A01N 43/74	..	five-membered rings with one nitrogen atom and either one oxygen atom or one

- sulfur atom in position 1,3
- A01N 43/76 . . . 1,3-Oxazoles; Hydrogenated 1,3-oxazoles
 - A01N 43/78 . . . 1,3-Thiazoles; Hydrogenated 1,3-thiazoles
 - A01N 43/80 . . five-membered rings with one nitrogen atom and either one oxygen atom or one sulfur atom in positions 1,2
 - A01N 43/82 . . five-membered rings with three ring hetero atoms
 - A01N 43/84 . . six-membered rings with one nitrogen atom and either one oxygen atom or one sulfur atom in positions 1,4
 - A01N 43/86 . . six-membered rings with one nitrogen atom and either one oxygen atom or one sulfur atom in positions 1,3
 - A01N 43/88 . . six-membered rings with three ring hetero atoms
 - A01N 43/90 . having two or more relevant hetero rings, condensed among themselves or with a common carbocyclic ring system
 - A01N 43/92 . having rings with one or more halogen atoms as ring hetero atoms
 - A01N 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](#))
 - A01N 45/02 . having three carbocyclic rings
 - A01N 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](#))
 - A01N 47/02 . the carbon atom having no bond to a nitrogen atom
 - A01N 47/04 . . containing >N-S-C(Hal)₃ groups
 - A01N 47/06 . . containing -O-CO-O- groups; Thio analogues thereof
 - A01N 47/08 . the carbon atom having one or more single bonds to nitrogen atoms
 - A01N 47/10 . . Carbamic acid derivatives, i.e. containing the group -O-CO-N ; Thio analogues thereof
 - A01N 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
 - A01N 47/14 Di-thio analogues thereof
 - A01N 47/16 . . the nitrogen atom being part of a heterocyclic ring
 - A01N 47/18 . . containing a -O-CO-N group, or a thio analogue thereof, directly attached to a heterocyclic or cycloaliphatic ring
 - A01N 47/20 . . N-Aryl derivatives thereof
 - A01N 47/22 . . O-Aryl or S-Aryl esters thereof
 - A01N 47/24 . . containing the groups $\begin{array}{c} \text{X} \\ | \\ \text{X}-\text{O}-\text{CO}-\text{N} \\ | \\ \text{X} \end{array}$, $\begin{array}{c} \text{X} \\ | \\ \text{O}-\text{CO}-\text{N}-\text{X} \\ | \\ \text{X} \end{array}$ or $\begin{array}{c} \text{X} \\ | \\ \text{X}-\text{S}-\text{CO}-\text{N} \\ | \\ \text{X} \end{array}$; Thio analogues thereof
 - A01N 47/26 . . . Oxidation products of dithiocarbamic acid derivatives, e.g. thiuram sulfides

- A01N 47/28 . . . Ureas or thioureas containing the groups N-CO-N or N-CS-N ([isoureas](#), [isothioureas](#) 47/42)
- A01N 47/30 . . . Derivatives containing the group N-CO-N aryl or N-CS-N-aryl
- A01N 47/32 . . . containing N-CO-N or N-CS-N groups directly attached to a cycloaliphatic ring
- A01N 47/34 . . . containing the groups $\begin{array}{c} >N-CO-N-CO- \\ >N-CO-N-C(=O)- \\ >N-CO-N-N= \\ >N-CO-N-C(=N)- \end{array}$, e.g. biuret; Thio analogues thereof; Urea-aldehyde condensation products
- A01N 47/36 . . . containing the group N-CO-N directly attached to at least one heterocyclic ring; Thio analogues thereof
- A01N 47/38 . . . containing the group N-CO-N where at least one nitrogen atom is part of a heterocyclic ring; Thio analogues thereof
- A01N 47/40 . . the carbon atom having a double or triple bond to nitrogen e.g. cyanates, cyanamides ([inorganic cyanamides](#) A01N 59/24)
- A01N 47/42 . . containing -N=CX₂ groups, e.g. isothiurea
- A01N 47/44 . . . Guanidine; Derivatives thereof
- A01N 47/46 . . containing -N=C=S groups
- A01N 47/48 . . containing -S-C (triple bond) N groups ([A01N 43/00](#) to [A01N 47/38](#) take precedence)

A01N 49/00 **Biocides, pest repellants or attractants, or plant growth regulators, containing compounds containing the group** $\begin{array}{c} C \\ | \\ [C_n]C^*-C^*-C^*=[C_m] \\ | \quad | \\ X \quad X \end{array}$, wherein m+n≥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 $\begin{array}{c} A \quad C \\ || \quad | \\ =C=C-C-[C_n]-C-C=C \\ | \quad | \\ \quad \quad X \end{array}$,

wherein A means a carbon atom or Y, n≥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

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**

A01N 53/00 **Biocides, pest repellants or attractants, or plant growth regulators containing cyclopropane carboxylic acids or derivatives thereof**

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](#))

A01N 55/02 . containing metal atoms

A01N 55/04 . . Tin

A01N 55/06 . . Mercury

A01N 55/08 . containing boron

A01N 57/00 **Biocides, pest repellants or attractants, or plant growth regulators containing organic phosphorus compounds**

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](#)

A01N 57/04 . . containing acyclic or cycloaliphatic radicals

A01N 57/06 . . containing aromatic radicals

A01N 57/08 . . containing heterocyclic radicals

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

A01N 57/12 . . containing acyclic or cycloaliphatic radicals

A01N 57/14 . . containing aromatic radicals

A01N 57/16 . . containing heterocyclic radicals

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

A01N 57/20 . . containing acyclic or cycloaliphatic radicals

A01N 57/22 . . containing aromatic radicals

A01N 57/24 . . containing heterocyclic radicals

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

A01N 57/28 . . containing acyclic or cycloaliphatic radicals

A01N 57/30 . . containing aromatic radicals

A01N 57/32 . . containing heterocyclic radicals

A01N 57/34 . having phosphorus-to-halogen bonds; Phosphonium salts

A01N 57/36 . having phosphorus as a ring member

A01N 59/00 **Biocides, pest repellants or attractants, or plant growth regulators containing elements or inorganic compounds**

A01N 59/02 . Sulfur; Selenium; Tellurium; Compounds thereof

A01N 59/04 . Carbon disulfide; Carbon monoxide; Carbon dioxide ([treatment of plants with carbon dioxide A01G 7/02](#))

- A01N 59/06 . Aluminium; Calcium; Magnesium; Compounds thereof
- A01N 59/08 . Alkali metal chlorides; Alkaline earth metal chlorides
- A01N 59/10 . Fluorides
- A01N 59/12 . Iodine, e.g. iodophors; Compounds thereof
- A01N 59/14 . Boron; Compounds thereof
- A01N 59/16 . Heavy metals; Compounds thereof
- A01N 59/18 . . Mercury
- A01N 59/20 . . Copper
- A01N 59/22 . . Arsenic
- A01N 59/24 . Cyanogen or compounds thereof, e.g. hydrogen cyanide, cyanic acid, cyanamide, thiocyanic acid
- A01N 59/26 . Phosphorus; Compounds thereof
- A01N 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**
- 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](#) to [A01N 59/00](#))
- A01N 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](#) to [A01N 59/00](#))**
- A01N 63/02 . Fermentates or substances produced by, or extracted from, micro-organisms or animal material
- A01N 63/04 . Microbial fungi or extracts thereof
- 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](#) to [A01N 59/00](#))**
- WARNING**
- Groups [A01N 65/03](#) to [65/48](#), with the exception of [A01N 65/38T](#), are incomplete.
See also group [A01N 65/00](#).
- A01N 65/03 . Algae
- A01N 65/04 . Pteridophyta [fern allies]; Filicophyta [ferns]

- A01N 65/06 . Coniferophyta [gymnosperms], e.g. cypress
- A01N 65/08 . Magnoliopsida [dicotyledons]
- A01N 65/10 . . Apiaceae or Umbelliferae [Carrot family], e.g. parsley, caraway, dill, lovage, fennel or snakebed
- A01N 65/12 . . Asteraceae or Compositae [Aster or Sunflower family], e.g. daisy, pyrethrum, artichoke, lettuce, sunflower, wormwood or tarragon
- A01N 65/14 . . Celastraceae [Staff-tree or Bittersweet family], e.g. spindle tree, bittersweet or thunder god vine
- A01N 65/16 . . Ericaceae [Heath or Blueberry family], e.g. rhododendron, arbutus, pieris, cranberry or bilberry
- A01N 65/18 . . Euphorbiaceae [Spurge family], e.g. ricinus [castorbean]
- A01N 65/20 . . Fabaceae or Leguminosae [Pea or Legume family], e.g. pea, lentil, soybean, clover, acacia, honey locust, derris or millettia
- A01N 65/22 . . Lamiaceae or Labiatae [Mint family], e.g. thyme, rosemary, skullcap, selfheal, lavender, perilla, pennyroyal, peppermint or spearmint
- A01N 65/24 . . Lauraceae [Laurel family], e.g. laurel, avocado, sassafras, cinnamon or camphor
- A01N 65/26 . . Meliaceae [Chinaberry or Mahogany family], e.g. mahogany, langsat or neem
- A01N 65/28 . . Myrtaceae [Myrtle family], e.g. teatree or clove
- A01N 65/30 . . Polygonaceae [Buckwheat family], e.g. red-knees or rhubarb
- A01N 65/32 . . Ranunculaceae [Buttercup family], e.g. hepatica, hydrastis or goldenseal
- A01N 65/34 . . Rosaceae [Rose family], e.g. strawberry, hawthorn, plum, cherry, peach, apricot or almond
- A01N 65/36 . . Rutaceae [Rue family], e.g. lime, orange, lemon, corktree or pricklyash
- A01N 65/38 . . Solanaceae [Potato family], e.g. nightshade, tomato, tobacco or chilli pepper
- A01N 65/385 . . . { Tobacco }
- A01N 65/40 . Liliopsida [monocotyledons]
- A01N 65/42 . . Aloeaceae [Aloe family] or Liliaceae [Lily family], e.g. aloe, veratrum, onion, garlic or chives
- A01N 65/44 . . Poaceae or Gramineae [Grass family], e.g. bamboo, lemon grass or citronella grass
- A01N 65/46 . . Stemonaceae [Stemona family], e.g. croomia
- A01N 65/48 . . Zingiberaceae [Ginger family], e.g. ginger or galangal

Guidance heading:

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