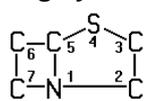


## Compilation of Changes to the CPC Scheme Between 2015.11 and 2015.12

### Presentation Details

- Entries for new symbols and headings: *Black text in italics*
- Entries for existing symbols and headings
- text insertions: *Green text in italics with yellow background*
  - text deletions: ~~Red strikethrough text with grey background~~
- Entries for deleted symbols and headings: ~~Black strikethrough text~~
- Entries arranged by project.
  - In cases when the originating project cannot be found, "N/A" is given for the Project information (e.g. the change could be due to an Editorial Correction).
  - Projects ending in "-F" indicate finalisation after reclassification was completed.

### Project: MP0216 (C07D)

- U C07D 499/00** Heterocyclic compounds containing 4-thia-1-azabicyclo [3.2.0] heptane ring systems, i.e. compounds containing a ring system of the formula:
- 
- , e.g. penicillins, penems; Such ring systems being further condensed, e.g. 2,3-condensed with an oxygen-, nitrogen- or sulfur-containing hetero ring
- M C07D 499/90** - further condensed with carbocyclic rings or ring systems ~~[5]~~

### Project: MP0216 (C09B)

- U C09B 29/00** Monoazo dyes prepared by diazotising and coupling
- M C09B 29/10** - from coupling components containing ~~hydroxyl~~hydroxy as the only directing group

### Project: MP0216 (H02S)

- M H02S 40/00** Components or accessories ~~specially adapted for~~ *in combination with* PV modules, not provided for in groups [H02S 10/00](#) - [H02S 30/00](#)
- WARNING**
- Groups [H02S 40/10](#) - [H02S 40/44](#) are incomplete pending reclassification of documents from groups [H02S 40/00](#), [F24J 2/00](#), [H01L 31/0232](#), [H01L 31/05](#) - [H01L 31/055](#).
- Until reclassification is complete, groups [H02S 40/00](#), [F24J 2/00](#), [H01L 31/0232](#) and [H01L 31/05](#) - [H01L 31/055](#) should be considered in order to perform a complete search.

### Project: N/A (A01N)

- U 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 37/12** - containing the group  $\text{-CO-O-C}\begin{matrix} \vdots \\ \vdots \end{matrix}=\text{C}_n\begin{matrix} \vdots \\ \vdots \end{matrix}=\text{Y}\begin{matrix} \vdots \\ \vdots \end{matrix}$ , wherein  $\text{C}_n\text{C}_n$  means a carbon skeleton not containing a ring; Thio analogues thereof
- U A01N 37/18** - containing the group  $\text{-CO-N}$ , e.g. carboxylic acid amides or imides; Thio analogues thereof

- A01N 37/20
- containing the group  $-\text{CO}-\overset{\cdot\cdot}{\text{N}}=\text{C}\equiv\overset{\cdot\cdot}{\text{C}}_n-\overset{\cdot\cdot}{\text{Y}}\dots$ , wherein  $\text{C}_n$  means a carbon skeleton not containing a ring; Thio analogues thereof
- A01N 37/30
- containing the groups  $-\text{CO}-\text{N}$  and  $-\overset{\text{O}}{\underset{\cdot\cdot}{\text{C}}}=\overset{\cdot\cdot}{\text{X}}\dots$ , both being directly attached by their carbon atoms to the same carbon skeleton, e.g.  $\text{H}_2\text{N}-\text{H}_2\text{N}-\text{NH}-\text{CO}-\text{C}_6\text{H}_4-\text{C}_6\text{H}_4-\text{COOCH}_3$ ; Thio-analogues thereof
- U 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  $\text{X}_m-\text{C}_n-\text{N}(\text{C})$  containing only one heterocyclic ring, wherein  $m \geq 1$  and  $n \geq 0$  and  $-\text{N}(\text{C})$  is unsubstituted or alkylsubstituted pyrrolidine, piperidine, morpholine, thiomorpholine, piperazine or a polymethyleneimine with four or more  $\text{CH}_2$  groups, [A01N 33/00](#) to [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.
- U A01N 43/64**
- having rings with three nitrogen atoms as the only ring hetero atoms
- U A01N 43/66**
- 1,3,5-Triazines, not hydrogenated and not substituted at the ring nitrogen atoms
- U 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 ( $-\text{SCN}$ ), cyanato ( $-\text{OCN}$ ) or azido ( $-\text{N}_3$ ) group directly attached to a ring carbon atom
- U 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](#))**
- U A01N 47/02**
- the carbon atom having no bond to a nitrogen atom
- A01N 47/04**
- containing  $>\text{N}-\text{S}-\text{C}(\text{Hal})_3$  groups
- U 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  $-\text{N}=\text{C}(\text{X})_2$  groups, e.g. isothiourae

**Project: N/A (A23G)**

A23G

**COCOA; COCOA PRODUCTS, e.g. CHOCOLATE; SUBSTITUTES FOR COCOA OR COCOA PRODUCTS; CONFECTIONERY; CHEWING GUM; ICE-CREAM; PREPARATION THEREOF**

NOTES

1. In this subclass, the following term is used with the meaning indicated:

- "ice-cream" includes any edible frozen or congealed semi-liquid or pasty substance, e.g. slush ice

2. In this subclass, subject matter which cannot be completely classified in a single one of the main groups should be classified in each relevant main group

3. The classification symbols of groups:

[A23G 1/305](#), [A23G 1/56](#), [A23G 3/343](#), [A23G 3/346](#), [A23G 4/062](#), [A23G 9/322](#) and [A23G 9/52](#)

can be followed by additional symbols preceded by the sign "+", e.g. [A23G 1/56](#) +~~D8~~**D8**. The symbols give further information concerning structure, composition or form and have the meaning as listed below:

- ~~D~~**D** . Containing organic compounds
- ~~D2~~**D2** .. containing micro-organisms, enzymes
- ~~D4~~**D4** .. containing vitamins, antibiotics
- ~~D6~~**D6** .. containing beet sugar or cane sugar if specifically mentioned; containing other carbohydrates, e.g. starches, gums, alcohol sugar, polysaccharides, dextrans
- ~~D8~~**D8** .. containing cocoa fat if specifically mentioned; containing products of cocoa fat; containing other fats, e.g. fatty acid, fatty alcohol, their esters, lecithin, paraffins
- ~~D10~~**D10** .. containing amino-acids, proteins, e.g. gelatine, polypeptides
- ~~D12~~**D12** .. containing dairy products
- ~~D14~~**D14** .. containing fruits, nuts, e.g. almonds, seeds, plants or their extracts (gums ~~D6~~**D6**)
- ~~F~~**F** . Containing inorganic compounds
- ~~H~~**H** . Products with special structure
- ~~H2~~**H2** .. foamed, gas-expanded or cellular products
- ~~H4~~**H4** .. products with a supported structure
- ~~H4D~~**H4D** ... products with an inedible support, e.g. a stick
- ~~H4F~~**H4F** ... products with an edible support, e.g. a cornet
- ~~H6~~**H6** .. products with a composite structure, e.g. laminated products
- ~~H8~~**H8** .. hollow products, e.g. with inedible or edible filling, fixed or movable within the cavity

**Project: N/A (A43B)**

U A43B 17/00

**{Inserted} insoles, e.g. footbeds or inlays, for attachment to the shoe after the upper has been joined (special medical insertions for shoes [A61F 5/14](#))**

A43B 17/10

- specially adapted for sweaty feet; waterproof; ~~Waterproof socks~~

## Project: N/A (A61K)

## U A61K 31/00

## Medicinal preparations containing organic active ingredients

## NOTES

1. When classifying in groups [A61K 31/00](#) to [A61K 41/00](#) the symbol [A61K 2300/00](#) may be added, using Combination Sets, to indicate a mixture of active ingredients.

2. In the preparation of new organic compounds and their use in medicinal preparations, classification is only made in the relevant subclasses [C07C](#) to [C07J](#) according to the type of compound. However, the inventions dealing with medicinal preparations containing at least two active organic ingredients are always classified in this group in addition to the classification for the type of compounds in [C07C](#) to [C07J](#).

3. Attention is drawn to the notes in class [C07](#), particularly to the definition of steroids given in Note (1) following the title of [C07J](#) and to the definition of carbohydrates and sugars given in the notes following the title of [C07H](#).

4. Salts and complexes of organic active compounds are always classified according to the free active compounds. If a complex is formed between two or more active compounds, then they are classified according to all compounds forming the salts or complexes followed by the symbol [A61K 2300/00](#) (i.e. as a mixture of active organic compounds). According to the last place rule, organic active compounds forming salts with heavy metals should be classified in [A61K 33/24](#) to [A61K 33/38](#) and not in subgroups [A61K 31/28](#) to [A61K 31/32](#), [A61K 31/555](#) or [A61K 31/714](#).

This does not apply to complexes, as apparent from the [A61K 31/00](#) scheme, wherein the complexes hemin and hematin are classified in [A61K 31/555](#) and cyanocobalamin in [A61K 31/714](#).

5. From January 2003 onwards, the EPO copies into CPC the IPC classification of the first document received (family representative). However, blends of active ingredients receive the additional symbol [A61K 2300/00](#) as Combination Set.

- |   |              |  |
|---|--------------|--|
| U | A61K 31/12   | • Ketones  |
|   | A61K 31/122  | • • having the oxygen directly attached to a ring, e.g. quinones, vitamin <b>K1K1</b> , anthralin  |
| U | A61K 31/13   | • Amines {( <a href="#">A61K 31/04</a> takes precedence)}  |
|   | A61K 31/145  | • • having sulfur, e.g. thiurams (>N-C(S)-S-C(S)-N< and >N-C(S)-S-S-C(S)-N<), Sulfanylamines (-N=SO), Sulfonylamines (-N=SO <sub>2</sub> SO <sub>2</sub> ) (isothiourea <a href="#">A61K 31/155</a> )                                  |
|   | A61K 31/155  | • • Amidines (-N=C-N-), e.g. guanidine ( <b>H2NH2N</b> -C(=NH)- <b>NH2NH2</b> ), isourea (N=C(OH)- <b>NH2NH2</b> ), isothiourea (-N=C(SH)- <b>NH2NH2</b> )   |
| U | A61K 31/33   | • Heterocyclic compounds   |
| U | A61K 31/395  | • • having nitrogen as a ring hetero atom, e.g. guanethidine, rifamycins ( <a href="#">rifampin A61K 31/496</a> )  |
| U | A61K 31/435  | • • • having six-membered rings with one nitrogen as the only ring hetero atom   |
| U | A61K 31/44   | • • • • Non condensed pyridines; Hydrogenated derivatives thereof  |
|   | A61K 31/4415 | • • • • • Pyridoxine, i.e. Vitamin <b>B6B6</b> (pyridoxal phosphate <a href="#">A61K 31/675</a> )  |
| U | A61K 31/495  | • • • having six-membered rings with two {or more} nitrogen atoms as the only ring heteroatoms, e.g. piperazine {or tetrazines}{ <a href="#">A61K 31/48</a> takes precedence {; with three nitrogen atoms <a href="#">A61K 31/53</a> } |
| U | A61K 31/505  | • • • • Pyrimidines; Hydrogenated pyrimidines, e.g. trimethoprim   |
| U | A61K 31/506  | • • • • • not condensed and containing further heterocyclic rings  |
|   | A61K 31/51   | • • • • • Thiamines, e.g. vitamin <b>B1B1</b>  |
| U | A61K 31/519  | • • • • • ortho- or peri-condensed with heterocyclic rings   |

- A61K 31/525 . . . . . Isoalloxazines, e.g. riboflavins, vitamin **B2B2**
- U A61K 31/557 . Eicosanoids, e.g. leukotrienes {or prostaglandins}
- A61K 31/5575 . . having a cyclopentane, e.g. Prostaglandin **E2E2**, Prostaglandin **F2-alphaF2**  
**alpha**
- U A61K 31/59 . Compounds containing 9, 10- seco- cyclopenta[a]hydrophenanthrene ring systems
- A61K 31/592 . . 9,10-Secoergostane derivatives, e.g. ergocalciferol, i.e. vitamin **D2D2**
- A61K 31/593 . . 9,10-Secocholestane derivatives, e.g. cholecalciferol, i.e. vitamin **D3D3**
- A61K 31/655 . Azo (-N=N-), diazo (=N2N2), azoxy (>N-O-N< or N(=O)-N<), azido (-N3N3) or diazoamino (-N=N-N<) compounds
- U A61K 31/70 . Carbohydrates; Sugars; Derivatives thereof (sorbitol [A61K 31/047](#))

**NOTE**

In this group, the expressions are used with the meanings indicated in Note (3) following the title of the subclass [C07H](#)

- U A61K 31/7135 . . Compounds containing heavy metals
- A61K 31/714 . . Cobalamins, e.g. cyanocobalamin, i.e. vitamin **B12B12**

**Project: N/A (C01B)**

- U **C01B 25/00** **Phosphorus; Compounds thereof** ([C01B 6/00](#)), [C01B 21/00](#), [C01B 23/00](#) take precedence; **perphosphates** [C01B 15/16](#))
- U C01B 25/16 . Oxyacids of phosphorus; Salts thereof (peroxyacids or salts thereof [C01B 15/00](#))
- U C01B 25/46 . . Preparation involving solvent-solvent extraction (solvent extraction in general [B01D 11/00](#))
- C01B 25/461 . . {the phosphoric acid present in the medium obtained after reaction being first extracted from the liquid phase formed or separated then re-extracted as free acid by using water or as a phosphate by using a basic compound (selective extraction of impurities contained in acid [C01B 25/237](#))}

**NOTES**

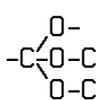
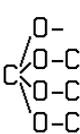
1. The extracting agent may be diluted with a compound or a mixture of compounds which are not solvents for phosphoric acid, e.g. a hydrocarbon
2. Documents which belong to more than one subgroup of [C01B 25/462](#) to [C01B 25/466](#) are classified by a combination, e.g. [C01B 25/462](#) +**B4B4**+**B8B8**

**Project: N/A (C03B)**

- U **C03B 2207/00** **Glass deposition burners**
- U C03B 2207/36 . Fuel or oxidant details, e.g. flow rate, flow rate ratio, fuel additives
- C03B 2207/38 . . Fuel combinations or non-standard fuels, e.g. **H2H2**+**CH4CH4**, ethane

**Project: N/A (C07C)**

- U **C07C 5/00** **Preparation of hydrocarbons from hydrocarbons containing the same number of carbon atoms**

- U C07C 5/42
- by dehydrogenation with a hydrogen acceptor
- NOTES**
1. The catalyst is considered as forming part of the acceptor system in case of simultaneous catalyst reduction.
  2. The acceptor system is classified according to the supplying substances in case of in situ formation of the acceptor system or of in situ regeneration of the reduced acceptor system.
  3. Compounds added for binding the reduced acceptor system are not considered as belonging to the acceptor system.
- U C07C 5/50
- • with an organic compound as an acceptor
- C07C 5/52
- • • with a hydrocarbon as an acceptor, e.g. hydrocarbon disproportionation, i.e.  
 $2C_nH_p \rightarrow C_nH_{p+q} + C_nH_{p-q}$
- U **C07C 43/00**
- Ethers; Compounds having**  **groups,**  **groups or** 
- groups**
- U C07C 43/02
- Ethers
- U C07C 43/03
- • having all ether-oxygen atoms bound to acyclic carbon atoms
- U C07C 43/04
- • • Saturated ethers
- U C07C 43/10
- • • • of polyhydroxy compounds
- C07C 43/11
- • • • • Polyethers containing  $-O-(C-C-O)_n$  units with  $2 \leq n \leq 10$
- U **C07C 45/00**
- Preparation of compounds having  $>C=O$  groups bound only to carbon or hydrogen atoms; Preparation of chelates of such compounds**
- U C07C 45/27
- by oxidation (with ozone [C07C 45/40](#))
- C07C 45/28
- • of  $CH_xCH_x$ -moieties
- U C07C 45/32
- • with molecular oxygen
- C07C 45/33
- • • of  $CH_xCH_x$ -moieties
- U C07C 45/42
- by hydrolysis
- C07C 45/43
- • of  $>CX_2CX_2$  groups, X being halogen
- U **C07C 50/00**
- Quinones (for quinone methides, see unsaturated ketones with a keto group being part of a ring)**
- NOTE**
- In this group, quinhydrone is classified according to their quinoid part.
- U C07C 50/10
- the quinoid structure being part of a condensed ring system containing two rings
- C07C 50/14
- • with unsaturation outside the ring system, e.g. vitamin  $K_1K_7$
- U **C07C 51/00**
- Preparation of carboxylic acids or their salts, halides or anhydrides (of acids by hydrolysis of oils, fats or waxes [C11C](#))**
- C07C 51/093
- by hydrolysis of  $-CX_3CX_3$  groups, X being halogen
- U **C07C 245/00**
- Compounds containing chains of at least two nitrogen atoms with at least one nitrogen-to-nitrogen multiple bond (azoxy compounds [C07C 291/08](#))**
- C07C 245/12
- Diazo compounds, i.e. compounds having the free valencies of  $=N_2N_2$  groups attached to the same carbon atom

**Project: N/A (C07F)**

- U C07F 9/00**      **Compounds containing elements of the 5th Group of the Periodic System**
- U C07F 9/02      · Phosphorus compounds (sugar phosphates [C07H 11/04](#); nucleotides [C07H 19/00](#), [C07H 21/00](#); nucleic acids [C07H 21/00](#))
- U C07F 9/28      · · with one or more P-C bonds
- C07F 9/30      · · · Phosphinic acids  $R_2P R_2P(=O)(OH)$ ; Thiophosphinic acids {i.e.  $R_2P R_2P(=X)(XH)$  (X = S, Se)}
- C07F 9/38      · · · Phosphonic acids  $RP(=O)(OH)_2$ ; Thiophosphonic acids {i.e.  $RP(=X)(XH)_2$  (X = S, Se)}
- C07F 9/46      · · · Phosphinous acids  $R_2R_2-P-OH$ ; Thiophosphinous acids; Aminophosphines  $R_2R_2-P-NH_2NH_2$  {including  $R_2P R_2P(=O)H$ ; derivatives thereof}
- C07F 9/48      · · · Phosphonous acids  $RP(OH)_2$ ; Thiophosphonous acids {including  $RHP(=O)(OH)$ ; Derivatives thereof}

**Project: N/A (C07H)**

- U C07H 15/00**      **Compounds containing hydrocarbon or substituted hydrocarbon radicals directly attached to hetero atoms of saccharide radicals**

NOTE

In this group, acyl radicals directly attached to hetero atoms of the saccharide radicals are not considered as substituted hydrocarbon radicals.

- U C07H 15/20      · Carbocyclic rings
- U C07H 15/22      · · Cyclohexane rings, substituted by nitrogen atoms
- U C07H 15/222      · · · Cyclohexane rings substituted by at least two nitrogen atoms
- U C07H 15/226      · · · · with at least two saccharide radicals directly attached to the cyclohexane rings
- C07H 15/234      · · · · · Attached to non-adjacent ring carbon atoms of the cyclohexane rings, e.g. kanamycins, tobramycin, nebramycin, gentamicin  $A_2A_2$

- C07H 23/00**      **Compounds containing boron, silicon, or a metal, e.g. chelates, vitamin  $B_{12}$  (esters with inorganic acids [C07H 11/00](#); metal salts, see parent compounds)**

**Project: N/A (C08F)**

**C08F 251/00 -  
C08F 292/00**

**Graft polymers; Polymers crosslinked with unsaturated monomers**NOTE

In [C08F 251/00](#) to [C08F 292/00](#) the grafted monomer may be indicated using the subdivision of [C08F 210/00](#) to [C08F 238/04](#) preceded by a "+" sign.

Example:                      [C08F 265/06](#)                      +~~220/06~~[C08F 220/06](#)

**Project: N/A (C08G)**

- U C08G 12/00**      **Condensation polymers of aldehydes or ketones with only compounds containing hydrogen attached to nitrogen (aminophenols [C08G 8/16](#))**
- U C08G 12/02      · of aldehydes
- U C08G 12/04      · · with acyclic or carbocyclic compounds
- C08G 12/10      · · · with acyclic compounds having the moiety  $X=C(-N<)_2$  in which X is O, S or N-

**Project: N/A (C08K)**

- U C08K 5/00 Use of organic ingredients**
- U C08K 5/49 · Phosphorus-containing compounds {(C08K 5/0091 takes precedence)}
  - U C08K 5/51 · · Phosphorus bound to oxygen
  - U C08K 5/53 · · · bound to oxygen and to carbon only
  - C08K 5/5313 · · · · Phosphinic compounds, e.g.  $R_2R_2=P(:O)OR'$
  - C08K 5/5317 · · · · Phosphonic compounds, e.g.  $R-P(:O)(OR')_2$
  - C08K 5/5377 · · · · Phosphinous compounds, e.g.  $R_2R_2=P-OR'$
  - C08K 5/5393 · · · · Phosphonous compounds, e.g.  $R-P(OR')_2$

**Project: N/A (C09B)**

- U C09B 35/00 Disazo and polyazo dyes of the type A<-D->B prepared by diazotising and coupling**
- U C09B 35/02 · Disazo dyes
  - U C09B 35/039 · · characterised by the tetrazo component
  - C09B 35/28 · · · the tetrazo component containing two aryl nuclei linked by at least one of the groups  $-CON<$ ,  $-SO_2NSO_2N<$ ,  $-SO_2SO_2-$ , or  $-SO_2SO_2-O-$
  - U C09B 35/36 · Trisazo dyes of the type 
$$\begin{array}{c} A \rightarrow B \\ \swarrow \quad \searrow \\ D \quad \quad E \end{array}$$
  - C09B 35/374 · · D contains two aryl nuclei linked by at least one of the groups  $-CON<$ ,  $-SO_2NSO_2N<$ ,  $-SO_2SO_2-$ , or  $-SO_2SO_2-O-$
- U C09B 62/00 Reactive dyes, i.e. dyes which form covalent bonds with the substrates or which polymerise with themselves**
- U C09B 62/44 · with the reactive group not directly attached to a heterocyclic ring
  - C09B 62/465 · · the reactive group being an acryloyl group, a quaternised or non-quaternised aminoalkyl carbonyl group or a  $(-N)n-CO-A-O-X$  or  $(-N)n-CO-A-Hal$  group, wherein A is an alkylene or alkylidene group, X is hydrogen or an acyl radical of an organic or inorganic acid, Hal is a halogen atom, and n is 0 or 1
  - C09B 62/62 · · the reactive group being an ethylenimino or N-acylated ethylenimino group or a  $-CO-NH-CH_2CH_2-CH_2CH_2-X$  group, wherein X is a halogen atom, a quaternary ammonium group or O-acyl and acyl is derived from an organic or inorganic acid, or a beta-substituted ethylamine group

**Project: N/A (C09J)**

- C09J 183/00 Adhesives based on macromolecular compounds obtained by reactions forming in the main chain of the macromolecule a linkage containing silicon, with or without sulfur, nitrogen, oxygen, or carbon only; Adhesives based on derivatives of such polymers**

NOTE

In this main group, from 01.09.2010 onwards, new documents are classified according to the following system. The adhesive is identified with the previous existing ECLA(+B) notation, e.g. [C09J 183/04](#) +**B4SB4S** (for an adhesive containing two or more siloxanes), while the information as to which different polymers are present in the adhesive is identified with additional indexing codes, e.g. [C08G 77/12](#) and [C08G 77/20](#)

**Project: N/A (C10L)**

C10L 2300/00

Mixture of two or more additives covered by the same group of [C10L 1/00](#) - [C10L 1/308](#)

NOTE

After the code and separated therefrom by a + sign, the codes [C10L 2300/20](#) to [C10L 2300/40](#) are added according to the number of components in the mixture. Example: ~~C10L 1/16~~ **A** [C10L 1/16A](#) + [C10L 2300/20](#) corresponds to a mixture of two well defined hydrocarbons, e.g. mixture of hexane and benzene

**Project: N/A (C10N)**

U C10N 2060/00

C10N 2060/12

**Chemical after-treatment of the constituents of the lubricating composition**

· by phosphorus or a compound containing phosphorus, e.g.  $P_xS_yP_xS_y$

**Project: N/A (C12N)**

U C12N 1/00

**Micro-organisms, e.g. protozoa; Compositions thereof (medicinal preparations containing material from micro-organisms [A61K 35/66](#); preparing medicinal bacterial antigen or antibody compositions, e.g. bacterial vaccines [A61K 39/00](#)); Processes of propagating, maintaining or preserving micro-organisms or compositions thereof; Processes of preparing or isolating a composition containing a micro-organism; Culture media therefor**

C12N 1/32

· Processes using, or culture media containing, lower alkanols, i.e.  $C_1$  to  $C_6$

**Project: N/A (C12P)**

U C12P 19/00

**Preparation of compounds containing saccharide radicals (keto-aldehydic acids [C12P 7/58](#))**

NOTE

Attention is drawn to the term "saccharide radical" in the first Note following the title of subclass [C07H](#).

U C12P 19/26

· Preparation of nitrogen-containing carbohydrates

U C12P 19/28

· · N-glycosides

C12P 19/42

· · · Cobalamins, i.e. vitamin  $B_{12}$ , LLD factor

**Project: N/A (C12Y)**

C12Y 117/00

**Oxidoreductases acting on CH or  $CH_2CH_2$  groups (1.17)**

**Project: N/A (C30B)**

U C30B 29/00

**Single crystals or homogeneous polycrystalline material with defined structure characterised by the material or by their shape (alloys [C22C](#))**

NOTE

In groups [C30B 29/02](#) to [C30B 29/58](#), in the absence of an indication to the contrary, a material is classified in the last appropriate place.

U C30B 29/10

· Inorganic compounds or compositions

C30B 29/40

· ·  $A_{III}B_V$  compounds {wherein A is B, Al, Ga, In or Tl and B is N, P, As, Sb or Bi}

U C30B 29/46

· · Sulfur-, selenium- or tellurium-containing compounds

C30B 29/48

· · ·  $A_{II}B_{VI}$  compounds {wherein A is Zn, Cd or Hg, and B is S, Se or Te}

**Project: N/A (F04B)**

F04B 49/00

**Control {e.g. of pump delivery, or pump pressure} of, or safety measures for, machines, pumps, or pumping installations, not otherwise provided for, or of interest apart from, groups [F04B 1/00](#) to [F04B 47/00](#)**

NOTE

The classification symbols in group [F04B 49/00](#) and subgroups can be followed by additional symbols preceded by the sign "+". The symbols are applied in subgroups [F04B 49/06](#), [F04B 49/08](#), [F04B 49/16](#) and [F04B 49/225](#). The symbols have the meanings as listed below:

- +**EC** specially adapted for pumps for elastic fluids, e.g. compressors
- +**PP** specially adapted for pumps for liquids

**Project: N/A (F25B)**

U F25B 9/00

**Compression machines, plant, or systems, in which the refrigerant is air or other gas of low boiling point**

F25B 9/12

- using  $^3\text{He}$ - $^4\text{He}$  dilution

**Project: N/A (G03G)**

U G03G 2215/00

**Apparatus for electrophotographic processes (not used)**

G03G 2215/20

- Details of the fixing device or process

NOTE

Indexing codes of group [G03G 2215/20](#) can be followed by additional symbols preceded by a "+" sign and relating to additional characteristics. The indexing codes have the meaning as indicated below.

- +**HH** Using heat to fix
- +**PP** Using pressure to fix
- +**P1P1** where the pressure is changed
- +**P1A P1A** being adapted to the current toner-carrying medium treated (e.g. duplex copy, colour copy, OHP sheet, envelope)
- +**P1B P1B** compensating for temperature or other technical condition variations (e.g. sheet skewing) occurring
- +**P1C P1C** when being in a non-fixing or waiting mode
- +**P1M P1M** for maintenance purpose or abnormal situations (e.g. power cut-off)

U G03G 2221/00

**Processes not provided for by group [G03G 2215/00](#), e.g. cleaning or residual charge elimination**

G03G 2221/0005

- Cleaning of residual toner

NOTE

Indexing codes of group [G03G 2221/0005](#) and subgroups can be followed by additional symbols preceded by a "+" sign and relating to additional characteristics. The additional symbols have the meaning as indicated below.

- +**AA** performed by the developing device (so called cleanerless)

+~~B~~**B** performed by a separate dedicated cleaning device  
+~~B1~~**B1** using magnetic brush  
+~~B2~~**B2** using mechanical means (also powders)  
+~~B2C~~**B2C** with magnetic support  
+~~B2D~~**B2D** with electrostatic support (also AC-voltage)  
+~~B3~~**B3** using magnetic means (not m. brush as in +B1;  
+~~B2C~~**B2C** takes precedence)  
+~~B3C~~**B3C** with electrostatic support (also AC-voltage)  
+~~B4~~**B4** using electrostatic means only  
+~~B4C~~**B4C** with AC  
+~~B4D~~**B4D** only DC  
+~~B5~~**B5** including suction or air pressure  
+~~C~~**C** Precleaning treatment to enhance cleaning action  
to come  
+~~C1~~**C1** discharging the toner with electrodes (corona or the like)  
+~~C1D~~**C1D** with AC  
+~~C1E~~**C1E** with DC only  
+~~C2~~**C2** discharging with lamps (normally to neutralise the photoconductor so the residual toner can more easily be removed)  
+~~C3~~**C3** Mechanical means for redistributing the residual toner (also magnetic brush)  
+~~C3C~~**C3C** simultaneously acting as the main charger of the photosensitive member  
+~~C3D~~**C3D** with magnetic support  
+~~C3E~~**C3E** with electrostatic support  
+~~C3E1~~**C3E1** including AC  
+~~C3P~~**C3P** plural sequential mechanical means  
+~~C4~~**C4** magnetic means  
+~~C4D~~**C4D** with electrostatic support (also AC-voltage)  
+~~C5~~**C5** electrostatic means (not charging as in +~~C1~~**C1**)  
+~~C5D~~**C5D** with AC  
+~~C5E~~**C5E** with DC only

**Project: N/A (H01L)**

U H01L 21/00

Processes or apparatus adapted for the manufacture or treatment of semiconductor or solid state devices or of parts thereof ({testing or measuring during manufacture or treatment, or reliability measurements [H01L 22/00](#); multistep manufacturing processes for passive two-terminal components without a potential-jump or surface barrier for integrated circuits [H01L 28/00](#); } processes or apparatus peculiar to the manufacture or treatment of devices provided for in groups [H01L 31/00](#) to [H01L 51/00](#) or of parts thereof, see these groups; single-step processes covered by other subclasses, see the relevant subclasses, e.g. [C23C](#), [C30B](#); photomechanical production of textured or patterned surfaces, materials or originals therefor, apparatus specially adapted therefor, in general [G03F](#))

U H01L 21/02

• Manufacture or treatment of semiconductor devices or of parts thereof

- U H01L 21/04
- • the devices having at least one potential-jump barrier or surface barrier, e.g. PN junction, depletion layer, carrier concentration layer {(multistep processes specially adapted for the manufacture of said devices [H01L 29/66007](#), [H01L 29/401](#); details of semiconductor bodies [H01L 29/02](#))}
- H01L 21/18
- • • the devices having semiconductor bodies comprising elements of the fourth group of the Periodic System or  $A_{III}B_{V}$  compounds with or without impurities, e.g. doping materials {([H01L 21/041](#) to [H01L 21/0425](#), [H01L 21/045](#) to [H01L 21/048](#) take precedence)}
- NOTE
- This group covers also processes and apparatus which, by using the appropriate technology, are clearly suitable for manufacture or treatment of devices whose bodies comprise elements of the fourth group of the Periodic System or  $A_{III}B_{V}$  compounds, even if the material used is not explicitly specified.
- U H01L 21/20
- • • • Deposition of semiconductor materials on a substrate, e.g. epitaxial growth {solid phase epitaxy}
- WARNING
- Group [H01L 21/20](#) is impacted by reclassification into groups [H01L 21/02365](#) – [H01L 21/02694](#).  
Groups [H01L 21/20](#) and [H01L 21/02365](#) – [H01L 21/02694](#) should be considered in order to perform a complete search.
- U H01L 21/205
- • • • using reduction or decomposition of a gaseous compound yielding a solid condensate, i.e. chemical deposition
- H01L 21/2056
- • • • • {Epitaxial deposition of  $A_{III}B_{V}$  compounds}
- U H01L 21/208
- • • • • using liquid deposition
- H01L 21/2085
- • • • • {Epitaxial deposition of  $A_{III}B_{V}$  compounds}
- U H01L 21/22
- • • • Diffusion of impurity materials, e.g. doping materials, electrode materials, into or out of a semiconductor body, or between semiconductor regions; {Interactions between two or more impurities; Redistribution of impurities}
- U H01L 21/221
- • • • • {of killers}
- H01L 21/2215
- • • • • {in  $A_{III}B_{V}$  compounds}
- U H01L 21/223
- • • • • using diffusion into or out of a solid from or into a gaseous phase {([H01L 21/221](#) to [H01L 21/222](#) take precedence; diffusion through an applied layer [H01L 21/225](#))}
- H01L 21/2233
- • • • • {Diffusion into or out of  $A_{III}B_{V}$  compounds}
- U H01L 21/225
- • • • • using diffusion into or out of a solid from or into a solid phase, e.g. a doped oxide layer {([H01L 21/221](#) to [H01L 21/222](#) take precedence)}
- H01L 21/2258
- • • • • {Diffusion into or out of  $A_{III}B_{V}$  compounds}
- U H01L 21/24
- • • • Alloying of impurity materials, e.g. doping materials, electrode materials, with a semiconductor body {([H01L 21/182](#) takes precedence)}
- H01L 21/242
- • • • • {Alloying of doping materials with  $A_{III}B_{V}$  compounds}
- U H01L 21/244
- • • • • {Alloying of electrode materials}
- H01L 21/246
- • • • • {with  $A_{III}B_{V}$  compounds}
- U H01L 21/26
- • • • Bombardment with radiation {([H01L 21/3105](#) takes precedence)}
- U H01L 21/263
- • • • • with high-energy radiation ([H01L 21/261](#) takes precedence)

- U H01L 21/265 . . . . . producing ion implantation (ion beam tubes for localised treatment [H01J 37/30](#))
- WARNING  
Groups [H01L 21/26566](#), [H01L 21/2658](#) and [H01L 21/26593](#) are incomplete pending reclassification of documents from groups [H01L 21/26506](#) and [H01L 21/2654](#).  
Groups [H01L 21/26566](#), [H01L 21/2658](#), [H01L 21/26593](#), [H01L 21/26506](#) and [H01L 21/2654](#) should be considered in order to perform a complete search.
- H01L 21/2654 . . . . . {in [AHHBV<sub>A<sub>III</sub>B<sub>V</sub></sub>](#) compounds}
- U H01L 21/28 . . . . . Manufacture of electrodes on semiconductor bodies using processes or apparatus not provided for in [H01L 21/20](#) to [H01L 21/268](#); {(etching for patterning the electrodes [H01L 21/311](#) and [H01L 21/3213](#))}
- U H01L 21/283 . . . . . Deposition of conductive or insulating materials for electrodes {conducting electric current}
- U H01L 21/285 . . . . . from a gas or vapour, e.g. condensation
- U H01L 21/28506 . . . . . {of conductive layers}
- H01L 21/28575 . . . . . {on semiconductor bodies comprising [AHHBV<sub>A<sub>III</sub>B<sub>V</sub></sub>](#) compounds}
- U H01L 21/30 . . . . . Treatment of semiconductor bodies using processes or apparatus not provided for in groups [H01L 21/20](#) to [H01L 21/26](#) (manufacture of electrodes thereon [H01L 21/28](#))
- U H01L 21/3003 . . . . . {Hydrogenation or deuteration, e.g. using atomic hydrogen from a plasma}
- H01L 21/3006 . . . . . {of [AHHBV<sub>A<sub>III</sub>B<sub>V</sub></sub>](#) compounds}
- U H01L 21/302 . . . . . to change their surface-physical characteristics or shape, e.g. etching, polishing, cutting
- U H01L 21/306 . . . . . Chemical or electrical treatment, e.g. electrolytic etching (to form insulating layers [H01L 21/31](#))
- U H01L 21/30604 . . . . . {Chemical etching}
- H01L 21/30612 . . . . . {Etching of [AHHBV<sub>A<sub>III</sub>B<sub>V</sub></sub>](#) compounds}
- U H01L 21/322 . . . . . to modify their internal properties, e.g. to produce internal imperfections
- H01L 21/3228 . . . . . {of [AHHBV<sub>A<sub>III</sub>B<sub>V</sub></sub>](#) compounds, e.g. to make them semi-insulating}
- U H01L 27/00** **Devices consisting of a plurality of semiconductor or other solid state components formed in or on a common substrate (processes or apparatus specially adapted for the manufacture or treatment thereof or of parts thereof [H01L 21/70](#), [H01L 31/00](#) to [H01L 51/00](#); details thereof [H01L 23/00](#), [H01L 29/00](#) to [H01L 51/00](#); assemblies consisting of a plurality of individual solid state devices [H01L 25/00](#); assemblies of electrical components in general [H05K](#))**
- NOTE  
In this group, in the absence of an indication to the contrary, classification is made in the last appropriate place.
- U H01L 27/02 . . . . . including semiconductor components specially adapted for rectifying, oscillating, amplifying or switching and having at least one potential-jump barrier or surface barrier; including integrated passive circuit elements with at least one potential-jump barrier or surface barrier
- U H01L 27/04 . . . . . the substrate being a semiconductor body
- U H01L 27/06 . . . . . including a plurality of individual components in a non-repetitive configuration

- H01L 27/0605 . . . . {integrated circuits made of compound material, e.g.  $A_{III}B_{VI}$ }
- U H01L 27/14 . including semiconductor components sensitive to infra-red radiation, light, electromagnetic radiation of shorter wavelength, or corpuscular radiation and specially adapted either for the conversion of the energy of such radiation into electrical energy or for the control of electrical energy by such radiation (radiation-sensitive components structurally associated with one or more electric light sources only [H01L 31/14](#); couplings of light guides with optoelectronic elements [G02B 6/42](#))
- U H01L 27/144 . . Devices controlled by radiation
- U H01L 27/146 . . . Imager structures
- U H01L 27/14683 . . . . {Processes or apparatus peculiar to the manufacture or treatment of these devices or parts thereof (not peculiar thereto [H01L 21/00](#))}
- H01L 27/14694 . . . . {The active layers comprising only  $A_{III}B_{VI}$  compounds, e.g. GaAs, InP}
- H01L 27/14696 . . . . {The active layers comprising only  $A_{II}B_{VI}$  compounds, e.g. CdS, ZnS, CdTe}
- U H01L 29/00** **Semiconductor devices adapted for rectifying, amplifying, oscillating or switching, or capacitors or resistors with at least one potential-jump barrier or surface barrier, e.g. PN junction depletion layer or carrier concentration layer; Details of semiconductor bodies or of electrodes thereof; {Multistep manufacturing processes therefor}([H01L 31/00](#) - [H01L 47/00](#), [H01L 51/05](#) take precedence; processes or apparatus adapted for the manufacture or treatment thereof or of parts thereof [H01L 21/00](#); details other than of semiconductor bodies or of electrodes thereof [H01L 23/00](#); devices consisting of a plurality of solid state components formed in or on a common substrate [H01L 27/00](#); {passive two-terminal components without a potential-jump or surface barrier for integrated circuits, details thereof and multistep manufacturing processes therefor [H01L 28/00](#); } resistors in general [H01C](#); capacitors in general [H01G](#), {e.g. ceramic barrier-layer capacitors [H01G 4/1272](#)})**
- NOTE  
In this main group, classification is made both in groups [H01L 29/02](#) to [H01L 29/51](#) and in groups [H01L 29/66](#) to [H01L 29/94](#) if both of these sets of groups are relevant.
- U H01L 29/02 . Semiconductor bodies; {Multistep manufacturing processes therefor}
- U H01L 29/12 . . characterised by the materials of which they are formed
- H01L 29/20 . . . including, apart from doping materials or other impurities, only  $A_{III}B_{VI}$  compounds
- H01L 29/22 . . . including, apart from doping materials or other impurities, only  $A_{II}B_{VI}$  compounds
- U H01L 29/24 . . . including, apart from doping materials or other impurities, only semiconductor materials not provided for in groups [H01L 29/16](#), [H01L 29/18](#), [H01L 29/20](#), [H01L 29/22](#) (including organic materials [H01L 51/00](#))
- H01L 29/242 . . . . { $A_{II}B_{VI}A_{I}B_{VII}$  or  $A_{II}B_{VII}A_{I}B_{VII}$  compounds, e.g.  $Cu_2O$ , Cu I ([H01L 29/247](#) takes precedence)}

- U H01L 31/00** **Semiconductor devices sensitive to infra-red radiation, light, electromagnetic radiation of shorter wavelength or corpuscular radiation and adapted either for the conversion of the energy of such radiation into electrical energy or for the control of electrical energy by such radiation; Processes or apparatus peculiar to the manufacture or treatment thereof or of parts thereof; Details thereof (H01L 51/42 takes precedence; devices consisting of a plurality of solid state components formed in, or on, a common substrate, other than combinations of radiation-sensitive components with one or more electric light sources, H01L 27/00; production of heat using solar heat F24J 2/00; measurement of X-radiation, gamma radiation, corpuscular radiation or cosmic radiation with semiconductor detectors G01T 1/24, with resistance detectors G01T 1/26; measurement of neutron radiation with semiconductor detectors G01T 3/08; couplings of light guides with optoelectronic elements G02B 6/42; obtaining energy from radioactive sources G21H)**
- U H01L 31/0248 . characterised by their semiconductor bodies
- U H01L 31/0256 . . characterised by the material
- U H01L 31/0264 . . . Inorganic materials
- H01L 31/0296 . . . . including, apart from doping material or other impurities, only **AH<sub>IV</sub>B<sub>VI</sub>A<sub>II</sub>B<sub>VI</sub>** compounds, e.g. CdS, ZnS, HgCdTe
- H01L 31/0304 . . . . including, apart from doping materials or other impurities, only **AH<sub>III</sub>B<sub>V</sub>A<sub>III</sub>B<sub>V</sub>** compounds
- H01L 31/0312 . . . . including, apart from doping materials or other impurities, only **A<sub>IV</sub>B<sub>IV</sub>A<sub>IV</sub>B<sub>IV</sub>** compounds, e.g. SiC
- U H01L 31/032 . . . . including, apart from doping materials or other impurities, only compounds not provided for in groups [H01L 31/0272](#) to [H01L 31/0312](#)
- H01L 31/0322 . . . . . {comprising only **A<sub>IB</sub>HC<sub>VI</sub>A<sub>I</sub>B<sub>III</sub>C<sub>VI</sub>** chalcopyrite compounds, e.g. Cu In Se<sub>2</sub>, Cu Ga Se<sub>2</sub>, Cu In Ga Se<sub>2</sub>}
- H01L 31/0324 . . . . . {comprising only **A<sub>IV</sub>B<sub>VI</sub>A<sub>IV</sub>B<sub>VI</sub>** or **A<sub>IB</sub>VC<sub>VI</sub>A<sub>II</sub>B<sub>IV</sub>C<sub>VI</sub>** chalcogenide compounds, e.g. Pb Sn Te}
- H01L 31/0326 . . . . . {comprising **A<sub>IB</sub>HC<sub>IV</sub>D<sub>VI</sub>A<sub>I</sub>B<sub>II</sub>C<sub>IV</sub>D<sub>VI</sub>** kesterite compounds, e.g. Cu<sub>2</sub>ZnSnSe<sub>4</sub>, Cu<sub>2</sub>ZnSnS<sub>4</sub>}
- U H01L 31/0328 . . . . including, apart from doping materials or other impurities, semiconductor materials provided for in two or more of groups [H01L 31/0272](#) to [H01L 31/032](#)
- H01L 31/0336 . . . . . in different semiconductor regions, e.g. **Cu<sub>2</sub>XCu<sub>2</sub>X** / CdX hetero-junctions, X being an element of the sixth group of the Periodic System
- U H01L 31/036 . . characterised by their crystalline structure or particular orientation of the crystalline planes
- U H01L 31/0368 . . . including polycrystalline semiconductors ([H01L 31/0392](#) takes precedence)
- U H01L 31/03682 . . . . {including only elements of the fourth group of the Periodic System}
- H01L 31/03687 . . . . . {including microcrystalline **A<sub>IV</sub>B<sub>IV</sub>A<sub>IV</sub>B<sub>IV</sub>** alloys, e.g. uc-SiGe, uc-SiC}
- U H01L 31/0376 . . . including amorphous semiconductors ([H01L 31/0392](#) takes precedence)
- U H01L 31/03762 . . . . {including only elements of the fourth group of the Periodic System}
- H01L 31/03765 . . . . . {including **A<sub>IV</sub>B<sub>IV</sub>A<sub>IV</sub>B<sub>IV</sub>** compounds or alloys, e.g. SiGe, SiC}
- U H01L 31/0392 . . . including thin films deposited on metallic or insulating substrates; {characterised by specific substrate materials or substrate features or by the presence of intermediate layers, e.g. barrier layers, on the substrate (textured substrates [H01L 31/02366](#))}
- H01L 31/03923 . . . . {including **A<sub>IB</sub>HC<sub>VI</sub>A<sub>I</sub>B<sub>III</sub>C<sub>VI</sub>** compound materials, e.g. CIS, CIGS}

- H01L 31/03925 . . . . {including  $A_{II}B_{VI}$  compound materials, e.g. CdTe, CdS}
- U H01L 31/03926 . . . . {comprising a flexible substrate}
- H01L 31/03928 . . . . {including  $A_{III}B_{III}C_{VI}$  compound, e.g. CIS, CIGS deposited on metal or polymer foils}
- U H01L 31/04 . . . . adapted as photovoltaic [PV] conversion devices, e.g. PV modules or single PV cells (testing thereof during manufacture {[H01L 22/00](#)}; testing thereof after manufacture [H02S 50/10](#))
- U H01L 31/06 . . . . characterised by at least one potential-jump barrier or surface barrier
- U H01L 31/068 . . . . the potential barriers being only of the PN homojunction type, e.g. bulk silicon PN homojunction solar cells or thin film polycrystalline silicon PN homojunction solar cells
- H01L 31/0693 . . . . the devices including, apart from doping material or other impurities, only  $A_{III}B_{III}B_{VI}$  compounds, e.g. GaAs or InP solar cells
- U H01L 31/072 . . . . the potential barriers being only of the PN heterojunction type
- H01L 31/073 . . . . comprising only  $A_{II}B_{VI}$  compound semiconductors, e.g. CdS/CdTe solar cells
- H01L 31/0735 . . . . comprising only  $A_{III}B_{III}B_{VI}$  compound semiconductors, e.g. GaAs/AlGaAs or InP/GaInAs solar cells
- H01L 31/0745 . . . . comprising a  $A_{IV}B_{IV}$  heterojunction, e.g. Si/Ge, SiGe/Si or Si/SiC solar cells
- H01L 31/0749 . . . . including a  $A_{III}B_{III}C_{VI}$  compound, e.g. CdS/CuInSe<sub>2</sub> [CIS] heterojunction solar cells
- U H01L 31/08 . . . . in which radiation controls flow of current through the device, e.g. photoresistors
- U H01L 31/10 . . . . characterised by at least one potential-jump barrier or surface barrier, e.g. phototransistors
- U H01L 31/101 . . . . Devices sensitive to infra-red, visible or ultra-violet radiation
- U H01L 31/102 . . . . characterised by only one potential barrier or surface barrier
- U H01L 31/103 . . . . . the potential barrier being of the PN homojunction type
- H01L 31/1032 . . . . . {the devices comprising active layers formed only by  $A_{II}B_{VI}$  compounds, e.g. HgCdTe IR photodiodes}
- H01L 31/1035 . . . . . {the devices comprising active layers formed only by  $A_{III}B_{III}B_{VI}$  compounds}
- H01L 31/1037 . . . . . {the devices comprising active layers formed only by  $A_{IV}B_{IV}$  compounds}
- U H01L 31/18 . . . . Processes or apparatus peculiar to the manufacture or treatment of these devices or of parts thereof (not peculiar thereto [H01L 21/00](#))
- U H01L 31/1804 . . . . {comprising only elements of the fourth group of the Periodic System}
- H01L 31/1812 . . . . {including only  $A_{IV}B_{IV}$  alloys, e.g. SiGe}
- H01L 31/1828 . . . . {the active layers comprising only  $A_{II}B_{VI}$  compounds, e.g. CdS, ZnS, CdTe}
- H01L 31/1836 . . . . {comprising a growth substrate not being an  $A_{II}B_{VI}$  compound}
- H01L 31/184 . . . . {the active layers comprising only  $A_{III}B_{III}B_{VI}$  compounds, e.g. GaAs, InP}
- H01L 31/1852 . . . . {comprising a growth substrate not being an  $A_{III}B_{III}B_{VI}$  compound}
- U H01L 31/20 . . . . such devices or parts thereof comprising amorphous semiconductor materials
- U H01L 31/202 . . . . {including only elements of the fourth group of the Periodic System}
- H01L 31/204 . . . . {including  $A_{IV}B_{IV}$  alloys, e.g. SiGe, SiC}

- U H01L 33/00** Semiconductor devices with at least one potential-jump barrier or surface barrier specially adapted for light emission; Processes or apparatus specially adapted for the manufacture or treatment thereof or of parts thereof; Details thereof ([H01L 51/50](#) takes precedence; devices consisting of a plurality of semiconductor components formed in or on a common substrate and including semiconductor components with at least one potential-jump barrier or surface barrier, specially adapted for light emission [H01L 27/15](#); semiconductor lasers [H01S 5/00](#))

**NOTES**

1. This group covers light emitting diodes [LEDs] or superluminescent diodes [SLDs], including LEDs or SLDs emitting infra-red [IR] light or ultra-violet [UV] light.
2. In this group, at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place.

- U H01L 33/0004 · {Devices characterised by their operation}
- U H01L 33/002 · · {having heterojunctions or graded gap}
- H01L 33/0025 · · · {comprising only  $A_{III}B_{IV}A_{III}B_{IV}$  compounds}
- H01L 33/0029 · · · {comprising only  $A_{II}B_{III}A_{II}B_{III}$  compounds}
- U H01L 35/00** Thermo-electric devices comprising a junction of dissimilar materials, i.e. exhibiting Seebeck or Peltier effect with or without other thermo-electric effects or thermomagnetic effects; Processes or apparatus peculiar to the manufacture or treatment thereof or of parts thereof; Details thereof (devices consisting of a plurality of solid state components formed in or on a common substrate [H01L 27/00](#); refrigerating machines using electric or magnetic effects [F25B 21/00](#); thermometers using thermoelectric or thermomagnetic elements [G01K 7/00](#); obtaining energy from radioactive sources [G21H](#))
- U H01L 35/12 · Selection of the material for the legs of the junction
- U H01L 35/14 · · using inorganic compositions
- H01L 35/18 · · · comprising arsenic or antimony or bismuth ([H01L 35/16](#) takes precedence), {e.g.  $A_{III}B_{IV}A_{III}B_{IV}$  compounds}

**Project: N/A (H01M)**

- U H01M 4/00** Electrodes (electrodes for electrolytic processes [C25](#), {electrodes for hybrid or electric double capacitor [H01G 11/22](#)})
- U H01M 4/02 · Electrodes composed of or comprising active material
- U H01M 4/36 · · Selection of substances as active materials, active masses, active liquids {(electrode materials of hybrid or double layer capacitors [H01G 11/30-H01G 11/50](#))}
- U H01M 4/48 · · · of inorganic oxides or hydroxides
- H01M 4/485 · · · · of mixed oxides or hydroxides for inserting or intercalating light metals, e.g.  $LiTi_2O_4LiTi_2O_4$  or  $LiTi_2O_xFyLiTi_2O_xFy$  ([H01M 4/505](#), [H01M 4/525](#) take precedence)
- U H01M 4/50 · · · · of manganese
- H01M 4/505 · · · · · of mixed oxides or hydroxides containing manganese for inserting or intercalating light metals, e.g.  $LiMn_2O_4LiMn_2O_4$  or  $LiMn_2O_xFyLiMn_2O_xFy$
- H01M 4/58 · · · of inorganic compounds other than oxides or hydroxides, e.g. sulfides, selenides, tellurides, halogenides or  $LiCoFyLiCoFy$

**U H01M 10/00****Secondary cells; Manufacture thereof**NOTE

Secondary cells are accumulators receiving and supplying electrical energy by means of reversible electrochemical reactions.

- U H01M 10/05 · Accumulators with non-aqueous electrolyte ([H01M 10/39](#) takes precedence)
- U H01M 10/056 · · characterised by the materials used as electrolytes, e.g. mixed inorganic/organic electrolytes {(electrolytes for hybrid or electric double layer capacitors [H01G 11/54](#))}
- U H01M 10/0561 · · · the electrolyte being constituted of inorganic materials only
- H01M 10/0563 · · · · Liquid materials, e.g. for Li- $\text{SOCl}_2\text{SOCl}_2$  cells

**Project: N/A (H01P)****U H01P 1/00****Auxiliary devices (coupling devices of the waveguide type [H01P 5/00](#))**

- U H01P 1/16 · for mode selection, e.g. mode suppression or mode promotion; for mode conversion (linking dissimilar lines or devices [H01P 5/08](#))
- H01P 1/163 · · specifically adapted for selection or promotion of the  $\text{TE}_{01}$  circular-electric mode

**U H01P 3/00****Waveguides; Transmission lines of the waveguide type**

- U H01P 3/12 · Hollow waveguides ([H01P 3/20](#) takes precedence)
- H01P 3/13 · · specially adapted for transmission of the  $\text{TE}_{01}$  circular-electric mode {(selection, promotion [H01P 1/163](#))}

**Project: N/A (H01S)****U H01S 5/00****Semiconductor lasers {(superluminescent diodes [H01L 33/0045](#))}**

- U H01S 5/30 · Structure or shape of the active region; Materials used for the active region
- H01S 5/3013 · · { $\text{A}_{III}\text{B}_{IV}$  compounds}
- H01S 5/3018 · · { $\text{A}_{II}\text{B}_{VI}$  compounds}
- H01S 5/3022 · · { $\text{A}_{IV}\text{B}_{VI}$  compounds}
- U H01S 5/32 · · comprising PN junctions, e.g. hetero- or double- heterostructures ([H01S 5/34](#), [H01S 5/36](#) take precedence)
- H01S 5/3222 · · · {in  $\text{A}_{IV}\text{B}_{VI}$  compounds, e.g. PbSSe-laser}
- H01S 5/323 · · · in  $\text{A}_{III}\text{B}_{IV}$  compounds, e.g. AlGaAs-laser, {InP-based laser}
- H01S 5/327 · · · in  $\text{A}_{II}\text{B}_{VI}$  compounds, e.g. ZnCdSe-laser
- U H01S 5/34 · · comprising quantum well, or superlattice structures, e.g. single quantum well lasers (SQW lasers), multiple quantum well lasers (MQW lasers), graded index separate confinement heterostructure lasers (GRIN lasers) ([H01S 5/36](#) takes precedence)
- H01S 5/3426 · · · {in  $\text{A}_{IV}\text{B}_{VI}$  compounds, e.g. PbSSe-laser}
- H01S 5/343 · · · in  $\text{A}_{III}\text{B}_{IV}$  compounds, e.g. AlGaAs-laser, {InP-based laser}
- U H01S 5/34346 · · · · {characterised by the materials of the barrier layers}
- H01S 5/34393 · · · · · {not only based on  $\text{A}_{III}\text{B}_{IV}$  compounds}
- H01S 5/347 · · · in  $\text{A}_{II}\text{B}_{VI}$  compounds, e.g. ZnCdSe-laser