

## Compilation of Changes to the CPC Scheme Between 2014.11 and 2014.12

### 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~~
- 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: N/A (A01B)

- U A01B 59/00**      **Devices specially adapted for connection between animals or tractors and agricultural machines or implements( [A01B 63/00](#) takes precedence; vehicle connections in general [B60D](#); draught assemblies for animal drawn vehicles, in general [B62C 5/00](#) )**
- U A01B 59/06      • for machines mounted on tractors
- A01B 59/066      • • of the type comprising at least two lower arms and one upper arm generally arranged in a triangle (*e.g. three-point hitches*);~~(e.g. three-point hitches)~~

### Project: N/A (A01G)

- U A01G 9/00**      **Cultivation of flowers, vegetables or rice in receptacles, forcing-frames, or greenhouses (cultivation without soil [A01G 31/00](#); {turfing of roofs [E04D 11/002](#)})**
- A01G 9/10      • ~~Pots {(or other receptacles)}~~*Pots {(or other receptacles)}* for seedlings, { saplings, cuttings or other young plants (*foldable pots*)};~~(foldable pots)~~; ~~Soil {(or like)}~~ *Soil {(or like)}* blocks for seedlings; { Plant substrate bodies}; Means for forming soil-blocks

### Project: N/A (A01K)

- U A01K 2207/00**      **Modified animals**
- A01K 2207/15      • Humanized animals
- NOTE  
This group covers animals comprising human nucleic acids, proteins or cells. Classification in this group should be done in combination with ~~K01K217~~ *A01K 2217/00* codes.
- WARNING

### Project: N/A (A01N)

- 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 47/40      • the carbon atom having a double or triple bond to nitrogen e.g. cyanates, cyanamides (inorganic cyanamides [A01N 59/24](#))
- A01N 47/48      • • containing -S-C (*triple bond*) *N groups* ~~(triple bond)N groups~~ ([A01N 43/00](#) to [A01N 47/38](#) take precedence)

**Project: N/A (A46B)**

- U A46B 15/00**      **Other brushes; Brushes with additional arrangements**
- U A46B 15/0002      • { Arrangements for enhancing monitoring or controlling the brushing process}
- U A46B 15/0004      • • { with a controlling means}
- A46B 15/0006      • • • ~~N:~~ {with a controlling brush technique device, e.g. stroke movement measuring device~~1~~}

**Project: RP0058 (A47B)**

- A47B 65/00**      **Book-troughs; Accessories specially adapted for book-storing, e.g. book-ends** ~~{adjustable partitions for shelves A47B 57/58}~~

WARNING

*Groups A47B 65/10 - A47B 65/20 are incomplete pending reclassification of documents from group A47B 65/00.*

*Until reclassification is complete, groups A47B 65/00 and A47B 65/10 - A47B 65/20 should be considered in order to perform a complete search.*

**Project: N/A (A47B)**

- N A47B 65/10      • {adjustable}
- N A47B 65/15      • • {Partitions, e.g. dividers}
- N A47B 65/20      • {Book-ends}

**Project: N/A (A61B)**

- U A61B 17/00**      **Surgical instruments, devices or methods, e.g. tourniquets( [A61B 18/00](#) takes precedence; contraceptive devices, pessaries, or applicators therefor [A61F 6/00](#) ; eye surgery [A61F 9/007](#) ; ear surgery [A61F 11/00](#) )**
- U A61B 17/04      • for suturing wounds; Holders or packages for needles or suture materials( suture materials [A61L 17/00](#) )
- U A61B 17/0401      • • {Suture anchors, buttons or pledgets, i.e. means for attaching sutures to bone, cartilage or soft tissue; Instruments for applying or removing suture anchors( [A61B 17/0642](#) takes precedence; fixation devices for tendons or ligaments [A61F 2/0811](#) )}
- A61B 2017/0403      • • • {Dowels(~~other bone dowels 17:68~~; **other bone dowels 17:68**; dowels for connecting prosthetic parts [A61F 2002/30436](#) )}
- U A61B 17/56      • Surgical instruments or methods for treatment of bones or joints; Devices specially adapted therefor{( orthopaedic methods or devices for non-surgical treatment of bones or joints [A61F 5/00](#) )}
- NOTE
1. Documents concerning exclusively surgical methods are classified only in this group.
2. Surgical instruments or devices are classified only in the relevant subgroups
- U A61B 17/58      • • for osteosynthesis, e.g. bone plates, screws,{setting implements}or the like( [A61B 17/14](#) , [A61B 17/16](#) take precedence; { splints [A61B 5/01](#) ; traction bandages [A61F 13/10](#) } )

- U A61B 17/68
- • • Internal fixation devices,{including fasteners and spinal fixators, even if a part thereof projects from the skin( bone staples [A61B 17/0642](#) ; dental regeneration membranes [A61C 8/0006](#) )}
- WARNING  
Subgroups [A61B 17/686](#) and [A61B 17/688](#) are not complete pending a reorganisation. See also [A61B 17/68](#) , [A61B 17/683](#) and [A61B 17/86](#)
- U A61B 17/70
- • • • Spinal positioners or stabilisers;{Bone stabilisers comprising fluid filler in an implant}
- U A61B 17/7001
- • • • {Screws or hooks combined with longitudinal elements which do not contact vertebrae( [A61B 17/7058](#) takes precedence )}
- A61B 17/7046
- • • • • {the screws or hooks being mobile in use relative to the longitudinal element( [A61B 17/7035](#) takes precedence )}-~~[WARNING: incomplete see A61B 17/7001]~~
- WARNING  
*incomplete see [A61B 17/7001](#)*

**Project: N/A (A61F)****A61F**

**FILTERS IMPLANTABLE INTO BLOOD VESSELS; PROSTHESES;  
ORTHOPAEDIC, NURSING OR CONTRACEPTIVE DEVICES;  
FOMENTATION; TREATMENT OR PROTECTION OF EYES OR EARS;  
BANDAGES, DRESSINGS OR ABSORBENT PADS; FIRST-AID KITS (dental  
prosthetics [A61C](#))**

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:

[A61F 2/48](#) covered by [A61F 2/02](#)  
[A61F 2/56](#) covered by [A61F 2/54](#)  
[A61F 2/62](#) covered by [A61F 2/60](#)  
[A61F 2/70](#) covered by [A61F 2/68](#) , [A61F 2/72](#)  
[A61F 2/74](#) covered by [A61F 2/68](#)  
[A61F 5/045](#) covered by [A61G 13/12](#)  
[A61F 5/052](#) covered by [A61F 5/05](#)  
[A61F 5/447](#) covered by [A61F 5/445](#)  
[A61F 5/452](#) covered by [A61F 5/451](#)  
[A61F 5/457](#) covered by [A61F 5/451](#)  
[A61F 5/458](#) covered by [A61F 5/451](#)  
[A61F 6/10](#) covered by [A61F 6/08](#)  
[A61F 9/01](#) covered by ~~[A61F9/008A](#)~~[A61F 9/00802](#) -~~[A61F9/008D](#)~~[A61F 9/00825](#)  
[A61F 9/011](#) covered by ~~[A61F9/008A](#)~~[A61F 9/00802](#) -~~[A61F9/008D](#)~~[A61F 9/00825](#)  
[A61F 13/22](#) covered by [A61F 13/206](#) [A61F 13/24](#) covered by  
[A61F 13/2037](#) [A61F 13/30](#) covered by [A61F 13/26](#)  
[A61F 13/32](#) covered by [A61F 13/26](#)  
[A61F 13/40](#) covered by [A61M 35/006](#)

- U A61F 2/00** Filters implantable into blood vessels; Prostheses, i.e. artificial substitutes or replacements for parts of the body; Appliances for connecting them with the body (as cosmetic articles, see the relevant subclasses, e.g. wigs, hair pieces, [A41G 3/00](#), [A41G 5/00](#), artificial nails [A45D 31/00](#); dental prostheses [A61C 13/00](#); materials for prostheses [A61L 27/00](#); artificial hearts [A61M 1/10](#); artificial kidneys [A61M 1/14](#))
- WARNING  
Groups [A61F 2/07](#), [A61F 2/844](#) - [A61F 2/97](#) correspond to IPC2013.01
- U A61F 2/02** . Prostheses implantable into the body {(closure means for urethra or rectum or for artificial body openings therefor [A61F 2/0004](#))}
- U A61F 2/30** . . Joints
- U A61F 2002/30001** . . . {Additional features of subject-matter classified in [A61F 2/28](#), [A61F 2/30](#) and subgroups thereof }
- U A61F 2002/30621** . . . . {Features concerning the anatomical functioning or articulation of the prosthetic joint }
- U A61F 2002/30639** . . . . . {having rolling elements between both articulating surfaces }
- A61F 2002/30642** . . . . . ~~{having a single rolling (or sliding) ball articulating between two cups }~~ *{having a single rolling (or sliding) ball articulating between two cups }*
- U A61F 13/00** **Bandages or dressings (suspensory bandages [A61F 5/40](#); { contact-avoiding wound protectors [A61F 15/008](#); bandages or dressings with incorporated medicaments [A61L 15/44](#), [A61M 35/006](#); radioactive dressings [A61N 5/1029](#)}); Absorbent pads (chemical aspects of, or use of materials for, bandages, dressings or absorbent pads [A61L 15/00](#); { absorbent pads for tracheostomy [A61M 16/047](#)})**
- U A61F 13/15** . Absorbent pads, e.g. sanitary towels, swabs or tampons for external or internal application to the body (non-absorbent catamenial receptacles [A61F](#)); Supporting or fastening means therefor; Tampon applicators
- U A61F 13/20** . . Tampons, e.g. catamenial tampons; Accessories therefor
- WARNING  
For group [A61F 13/20](#) and subgroups see warning after [A61F 13/00](#)
- U A61F 13/2022** . . . { characterised by the shape}
- A61F 13/2045** . . . . ~~{Cup-shaped type tampons N: (non-absorbent catamenial cups [A61F 5/4553](#))}~~
- U A61F 13/45** . . characterised by the shape (cup-shaped type tampons **A61F13/24**)
- U A61F 13/47** . . . Sanitary towels, incontinence pads or napkins ([A61F 13/49](#) takes precedence)
- U A61F 13/472** . . . . specially adapted for female use {([A61F 13/474](#), [A61F 13/475](#), [A61F 13/476](#) take precedence)}
- U A61F 13/47218** . . . . . { with a raised crotch region, e.g. hump}
- A61F 13/47227** . . . . . ~~N: {for interlabial use}~~
- U A61F 13/51** . . characterised by the outer layers {(wicking or transfer layers [A61F 13/537](#))}
- U A61F 13/511** . . . Topsheet, i.e. the permeable cover or layer facing the skin
- U A61F 13/512** . . . . characterised by its apertures, e.g. perforations
- U A61F 13/5121** . . . . . { characterised by the vertical shape of the apertures e.g. three dimensional apertures , e.g. macro-apertures}
- A61F 13/5122** . . . . . ~~N: {and comprising secondary apertures e.g. macro-apertures in combination with micro-apertures}~~

**Project: N/A (A61G)****A61G**

**TRANSPORT OR ACCOMODATION FOR PATIENTS; OPERATING TABLES OR CHAIRS; CHAIRS FOR DENTISTRY; FUNERAL DEVICES( embalming corpses [A01N 1/00](#) ; { chairs or beds in general [A47C](#); walking aids [A61H 3/00](#) })**

WARNING**[M2011.12]**

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

<a href="#">A61G 3/04</a>	covered by	<a href="#">A61G 3/02</a>
<a href="#">A61G 7/043</a>	covered by	<a href="#">A61G 7/05</a>
<a href="#">A61G 7/12</a>	covered by	<a href="#">A61G 7/10</a>
<a href="#">A61G 7/14</a>	covered by	<a href="#">A61G 7/10</a>
<a href="#">A61G 7/16</a>	covered by	<a href="#">A61G 7/10</a>
<a href="#">A61G 15/04</a>	covered by	<a href="#">A61G 15/02</a>
<a href="#">A61G 15/06</a>	covered by	<a href="#">A61G 15/02</a>
<a href="#">A61G 17/013</a>	covered by	<a href="#">A61G 17/00</a>

**Project: N/A (A61K)****U A61K 8/00**

**Cosmetic or similar toilet preparations( casings or accessories for storing or handling of solid or pasty toilet or cosmetic substances [A45D 40/00](#) )**

NOTES

Use of cosmetics or similar toilet preparations is further classified in subclass [A61Q](#) .

1. Use of cosmetics or similar toilet preparations is mandatorily further classified in subclass [A61Q](#) . 2. In each of groups [A61K 8/02](#) and [A61K 8/18](#) , in the absence of an indication of the contrary, classification is made in the last appropriate place. 3. Attention is drawn to the Notes in class [C07](#) , for example the notes following the title of subclass [C07D](#) , setting forth the rules for classifying organic compounds in that class, which rules are also applicable, if not otherwise indicated, to the classification of organic compounds in group [A61K 8/00](#) . 4. Salts or complexes of organic compounds are classified according to the base compounds. If a complex is formed between two or more compounds, classification is made for each compound.

WARNING

Group [A61K 8/00](#) and subgroups are incomplete. See provisionally also **[A61K7/00](#)** and subgroups.

- U A61K 8/18      • characterised by the composition
- U A61K 8/72      • • containing organic macromolecular compounds
- U A61K 8/81      • • • obtained by reactions involving only carbon-to-carbon unsaturated bonds
- A61K 8/8164    • • • {Compositions of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by a carboxyl radical, and containing at least one other carboxyl radical in the molecule, or of salts, anhydrides, esters, amides, imides or nitriles thereof; Compositions of derivatives of such polymers, e.g. poly (methyl vinyl ether-co-maleic anhydride)}(methyl vinyl ether-co-maleic anhydride)}

A61K 8/817	<ul style="list-style-type: none"> <li>• • • {Compositions of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by a single or double bond to nitrogen or by a heterocyclic ring containing nitrogen; Compositions or derivatives of such polymers, e.g. vinylimidazol, vinylcaprolactame, allylamines (<i>Polyquaternium 6</i>)}(<i>Polyquaternium 6</i>)}</li> </ul>
U A61K 9/00	<p><b>Medicinal preparations characterised by special physical form( nuclear magnetic resonance contrast preparations or magnetic resonance imaging contrast preparataions <a href="#">A61K 49/18</a> ; preparations containing radioactive substances <a href="#">A61K 51/12</a> )</b></p> <p><u>NOTE</u></p> <p>Among the one-dot groups of <a href="#">A61K 9/00</a> , classification is not made in the last appropriate place.</p> <p><a href="#">A61K 9/00</a> is subdivided according to the following concepts:</p> <ul style="list-style-type: none"> <li>- the drug release technique ( <a href="#">A61K 9/0002</a> and subgroups),</li> <li>- the site of application ( <a href="#">A61K 9/0012</a> and subgroups), and</li> <li>- the physical form ( <a href="#">A61K 9/0087</a> to <a href="#">A61K 9/7023</a> ).</li> </ul> <p>Where relevant, documents are classified in more than one of these subdivisions.</p>
U A61K 9/14	<ul style="list-style-type: none"> <li>• Particulate form, e.g. powders,{Processes for size reducing of pure drugs or the resulting products, Pure drug nanoparticles( microspheres <a href="#">A61K 9/16</a> ; microcapsules <a href="#">A61K 9/50</a> ; nanocapsules, nanoparticles of the matrix type <a href="#">A61K 9/51</a> )}</li> </ul>
A61K 9/16	<ul style="list-style-type: none"> <li>• Agglomerates; Granulates; Microbeadlets; {Microspheres; Pellets; Solid products obtained by spray drying, spray freeze drying, spray congealing, (<i>multiple</i>) <i>emulsion solvent evaporation or extraction</i>(<i>multiple</i>)<del>emulsion solvent evaporation or extraction</del>( <a href="#">A61K 9/20</a> takes precedence if the final form is a tablet; microspheres with drug-free outer coating, microcapsules <a href="#">A61K 9/50</a> ; mixture of different granules, microcapsules, (coated) microparticles <a href="#">A61K 9/5084</a>; nanoparticles <a href="#">A61K 9/51</a> )}</li> </ul>
U A61K 9/48	<ul style="list-style-type: none"> <li>• Preparations in capsules, e.g. of gelatin, of chocolate;{( <a href="#">A61K 9/0004</a> takes precedence; bite capsules <a href="#">A61K 9/0056</a> )}</li> </ul>
U A61K 9/50	<ul style="list-style-type: none"> <li>• • Microcapsules(having a gas, liquid or semi-solid filling; Solid microparticles or pellets surrounded by a distinct coating layer, e.g. coated microspheres, coated drug crystals( <a href="#">A61K 9/2081</a> takes precedence; particles with a single coating comprising drug <a href="#">A61K 9/167</a> )}</li> </ul>
A61K 9/5084	<ul style="list-style-type: none"> <li>• • • {<del>Mixtures of one or more drugs in different galenical forms, at least one of which being granules, microcapsules or(coated)</del>{<i>Mixtures of one or more drugs in different galenical forms, at least one of which being granules, microcapsules or (coated)</i> microparticles according to <a href="#">A61K 9/16</a> or <a href="#">A61K 9/50</a> , e.g. for obtaining a specific release pattern or for combining different drugs ( tablets containing such a mixture <a href="#">A61K 9/2077</a> )}</li> </ul>
U A61K 31/00	<p><b>Medicinal preparations containing organic active ingredients</b></p> <p><u>NOTE</u></p>
	<p>When classifying in groups <a href="#">A61K 31/00</a> to <a href="#">A61K 41/00</a> the symbol <a href="#">A61K 2300/00</a> may be added, using Combination Sets, to indicate a mixture of active ingredients.</p> <p>In the preparation of new organic compounds and their use in medicinal preparations, classification is only made in the relevant subclasses <a href="#">C07C</a> to <a href="#">C07J</a> according to the type of compound. However, the inventions dealing with medicinal preparations containing at least two active organic</p>



ingredients are always classified in this group in addition to the classification for the type of compounds in [C07C](#) to [C07J](#).

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](#).

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](#).

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 31/13  | • Amines{( <a href="#">A61K 31/04</a> takes precedence )}  |
|   | A61K 31/145 | • • <b>having sulfur, e.g. thiurams(&gt;N-C(S)-S-C(S)-N&lt; and &gt;N-C(S)-S-S-C(S)-N&lt;)</b> <b>having sulfur, e.g. thiurams (&gt;N-C(S)-S-C(S)-N&lt; and &gt;N-C(S)-S-S-C(S)-N&lt;)</b> , Sulfenylamines (-N=SO), Sulfonylamines (-N=SO <sub>2</sub> )( isothiurea <a href="#">A61K 31/155</a> )  |
|   | A61K 31/155 | • • Amidines (-N=C-N-), e.g. guanidine ( <b>H<sub>2</sub>N-C(=NH)-NH<sub>2</sub></b> ), <b>isourea (N=C(OH)-NH<sub>2</sub>)</b> , <b>isothiurea (-N=C(SH)-NH<sub>2</sub>)</b> ( <b>H<sub>2</sub>N-C(=NH)-NH<sub>2</sub></b> ), <b>isourea(N=C(OH)-NH<sub>2</sub>)</b> , <b>isothiurea(-N=C(SH)-NH<sub>2</sub>)</b>   |
| U | A61K 31/16  | • Amides, e.g. hydroxamic acids  |
|   | A61K 31/17  | • • <b>having the group &gt;N-C(O)</b> <b>having the group &gt;N-C(O)-N&lt; or &gt;N-C(S)-N&lt;</b> , e.g. urea, thiourea, carmustine( isoureas, isothiureas <a href="#">A61K 31/155</a> ; sulfonylureas <a href="#">A61K 31/64</a> )  |
| U | A61K 31/185 | • Acids; Anhydrides, halides or salts thereof, e.g. sulfur acids, imidic, hydrazonic, hydroxamic acids( hydroxamic acids <a href="#">A61K 31/16</a> ; peroxy acids <a href="#">A61K 31/327</a> )   |
|   |             | <b>NOTE</b><br>Cyclic anhydrides are considered to be heterocyclic rings   |
| U | A61K 31/19  | • • Carboxylic acids, e.g. valproic acid( Salicylic acid <a href="#">A61K 31/60</a> )  |
| U | A61K 31/195 | • • • having an amino group  |
|   | A61K 31/197 | • • • • the amino and the carboxyl group being attached to the same acyclic carbon chain, e.g. gamma-aminobutyric acid [ <b>GABA</b> ], <b>beta-alanine</b> , <b>epsilon-aminocaproic acid</b> , <b>pantothenic acid</b> ( <b>GABA</b> ), <b>beta-alanine</b> , <b>epsilon-aminocaproic acid</b> , <b>pantothenic acid</b> ( carnitine <a href="#">A61K 31/205</a> ) |
|   | A61K 31/198 | • • • • Alpha-aminoacids, e.g. alanine, edetic acids [ <b>EDTA</b> ],( <b>EDTA</b> );( betaine <a href="#">A61K 31/205</a> ; proline <a href="#">A61K 31/401</a> ; tryptophan <a href="#">A61K 31/405</a> ; histidine <a href="#">A61K 31/4172</a> ; peptides not degraded to individual aminoacids <a href="#">A61K 38/00</a> )                                     |
|   | A61K 31/655 | • <b>Azo(-N=N-){(- sulfasalazine <a href="#">A61K 31/635</a> )}</b> , <b>diazo(=N<sub>2</sub>)</b> , <b>azoxy(&gt;N-O-N&lt; or N(=O)-N&lt;)</b> <b>Azo (-N=N-)</b> , <b>diazo (=N<sub>2</sub>)</b> , <b>azoxy (&gt;N-O-N&lt; or N(=O)-N&lt;)</b> , azido (-N <sub>3</sub> ) or diazoamino (-N=N-N<) compounds  |

**U A61K 35/00****Medicinal preparations containing materials or reaction products thereof with undetermined constitution**NOTE

When classifying in this group, the last place rule (applied throughout [A61K](#)) does not apply. Namely, classification is made for each active component or material.

WARNING

Groups [A61K 35/13](#), [A61K 35/15](#), [A61K 35/17](#), [A61K 35/19](#), [A61K 35/33](#), [A61K 35/35](#), [A61K 35/51](#), [A61K 35/57](#), [A61K 35/61](#) do not correspond to former or future IPC. Concordance CPC : IPC for these groups is as follows: - [A61K 35/13](#) : [A61K 35/12](#) - [A61K 35/15](#) : [A61K 35/14](#) - [A61K 35/17](#) : [A61K 35/14](#) - [A61K 35/19](#) : [A61K 35/14](#) - [A61K 35/33](#) : [A61K 35/12](#) - [A61K 35/35](#) : [A61K 35/12](#) - [A61K 35/51](#) : [A61K 35/48](#) - [A61K 35/57](#) : [A61K 35/56](#) - [A61K 35/61](#) : [A61K 35/56](#)

A61K 35/12

- Materials from mammals; (compositions comprising non-specified tissues or cells; Compositions comprising non-embryonic stem cells( uncharacterized stem cells [A61K 35/545](#) ); Genetically modified cells( gene therapy [C12N 5/10](#) ; vaccines or medicinal preparations containing antigens or antibodies [A61K 39/00](#) )}{~~Note: If the cells are characterized, classify under the corresponding tissue or tissue of origin~~}

NOTE

When the cells are characterized, classification is given under the corresponding tissue or tissue of origin

**U A61K 36/00****Medicinal preparations of undetermined constitution containing material from algae, lichens, fungi or plants, or derivatives thereof, e.g. traditional herbal medicines{( antigens from pollen [A61K 39/36](#) )}**NOTE

In this group, common names of plants, where given, are presented in brackets following their corresponding Latin names.

U A61K 36/02

- Algae

A61K 36/03

- • ~~Phaeophycota or phaeophyta(brown algae)~~*Phaeophycota or phaeophyta (brown algae)*, e.g. Fucus

A61K 36/04

- • ~~Rhodophycota or rhodophyta(red algae)~~*Rhodophycota or rhodophyta (red algae)*, e.g. Porphyra

A61K 36/05

- • ~~Chlorophycota or chlorophyta(green algae)~~*Chlorophycota or chlorophyta (green algae)*, e.g. Chlorella

U A61K 36/13

- Coniferophyta (gymnosperms)

A61K 36/14

- • ~~Cupressaceae(Cypress family)~~*Cupressaceae (Cypress family)*, e.g. juniper or cypress

A61K 36/15

- • ~~Pinaceae(Pine family)~~*Pinaceae (Pine family)*, e.g. pine or cedar

A61K 36/16

- Ginkgophyta, e.g. Ginkgoaceae *(Ginkgo family)*~~(Ginkgo family)~~

A61K 36/17

- Gnetophyta, e.g. Ephedraceae *(Mormon-tea family)*~~(Mormon-tea family)~~

U A61K 36/18

- Magnoliophyta (angiosperms)

U A61K 36/185

- • Magnoliopsida (dicotyledons)

A61K 36/19

- • Acanthaceae *(Acanthus family)*~~(Acanthus family)~~

A61K 36/20

- • Aceraceae *(Maple family)*~~(Maple family)~~



- A61K 36/21      • • • ~~Amaranthaceae(Amaranth family)~~ *Amaranthaceae (Amaranth family)*, e.g. pigweed, rockwort or globe amaranth
- A61K 36/22      • • • ~~Anacardiaceae(Sumac family)~~ *Anacardiaceae (Sumac family)*, e.g. smoketree, sumac or poison oak
- A61K 36/23      • • • ~~Apiaceae or Umbelliferae(Carrot family)~~ *Apiaceae or Umbelliferae (Carrot family)*, e.g. dill, chervil, coriander or cumin
- A61K 36/24      • • • ~~Apocynaceae(Dogbane family)~~ *Apocynaceae (Dogbane family)*, e.g. plumeria or periwinkle
- A61K 36/25      • • • ~~Araliaceae(Ginseng family)~~ *Araliaceae (Ginseng family)*, e.g. ivy, aralia, schefflera or tetrapanax
- A61K 36/26      • • • ~~Aristolochiaceae(Birthwort family)~~ *Aristolochiaceae (Birthwort family)*, e.g. heartleaf
- A61K 36/264     • • • • Aristolochia *(Dutchman's pipe)* ~~(Dutchman's pipe)~~
- A61K 36/268     • • • • Asarum *(wild ginger)* ~~(wild-ginger)~~
- A61K 36/27      • • • ~~Asclepiadaceae(Milkweed family)~~ *Asclepiadaceae (Milkweed family)*, e.g. hoya
- A61K 36/28      • • • ~~Asteraceae or Compositae(Aster or Sunflower family)~~ *Asteraceae or Compositae (Aster or Sunflower family)*, e.g. chamomile, feverfew, yarrow or echinacea
- A61K 36/286     • • • • Carthamus *(distaff thistle)* ~~(distaff thistle)~~
- A61K 36/29      • • • ~~Berberidaceae(Barberry family)~~ *Berberidaceae (Barberry family)*, e.g. barberry, cohosh or mayapple
- A61K 36/30      • • • ~~Boraginaceae(Borage family)~~ *Boraginaceae (Borage family)*, e.g. comfrey, lungwort or forget-me-not
- A61K 36/31      • • • ~~Brassicaceae or Cruciferae(Mustard family)~~ *Brassicaceae or Cruciferae (Mustard family)*, e.g. broccoli, cabbage or kohlrabi
- A61K 36/32      • • • Burseraceae *(Frankincense family)* ~~(Frankincense family)~~
- A61K 36/33      • • • ~~Cactaceae(Cactus family)~~ *Cactaceae (Cactus family)*, e.g. pricklypear or Cereus
- A61K 36/34      • • • Campanulaceae *(Bellflower family)* ~~(Bellflower family)~~
- A61K 36/35      • • • Caprifoliaceae *(Honeysuckle family)* ~~(Honeysuckle family)~~
- A61K 36/36      • • • ~~Caryophyllaceae(Pink family)~~ *Caryophyllaceae (Pink family)*, e.g. babysbreath or soapwort
- A61K 36/37      • • • ~~Celastraceae(Staff-tree or Bittersweet family)~~ *Celastraceae (Staff-tree or Bittersweet family)*, e.g. tripterygium or spindle tree
- A61K 36/38      • • • ~~Clusiaceae, Hypericaceae or Guttiferae(Hypericum or Mangosteen family)~~ *Clusiaceae, Hypericaceae or Guttiferae (Hypericum or Mangosteen family)*, e.g. common St. Johnswort
- A61K 36/39      • • • ~~Convolvulaceae(Morning-glory family)~~ *Convolvulaceae (Morning-glory family)*, e.g. bindweed
- A61K 36/40      • • • Cornaceae *(Dogwood family)* ~~(Dogwood family)~~
- A61K 36/41      • • • Crassulaceae *(Stonecrop family)* ~~(Stonecrop family)~~
- A61K 36/42      • • • Cucurbitaceae *(Cucumber family)* ~~(Cucumber family)~~
- A61K 36/43      • • • ~~Cuscutaceae(Dodder family)~~ *Cuscutaceae (Dodder family)*, e.g. Cuscuta epithymum or greater dodder
- A61K 36/44      • • • ~~Ebenaceae(Ebony family)~~ *Ebenaceae (Ebony family)*, e.g. persimmon
- A61K 36/45      • • • ~~Ericaceae or Vacciniaceae(Heath or Blueberry family)~~ *Ericaceae or Vacciniaceae (Heath or Blueberry family)*, e.g. blueberry, cranberry or bilberry

- A61K 36/46 . . . ~~Eucommiaceae(Eucommia family)~~ *Eucommiaceae (Eucommia family)*, e.g. hardy rubber tree
- A61K 36/47 . . . ~~Euphorbiaceae(Spurge family)~~ *Euphorbiaceae (Spurge family)*, e.g. Ricinus (castorbean)
- A61K 36/48 . . . Fabaceae or Leguminosae (*Pea or Legume family*) (~~Pea or Legume family~~); Caesalpiniaceae; Mimosaceae; Papilionaceae
- A61K 36/49 . . . ~~Fagaceae(Beech family)~~ *Fagaceae (Beech family)*, e.g. oak or chestnut
- A61K 36/50 . . . ~~Fumariaceae(Fumitory family)~~ *Fumariaceae (Fumitory family)*, e.g. bleeding heart
- A61K 36/51 . . . Gentianaceae (*Gentian family*) (~~Gentian family~~)
- A61K 36/52 . . . Juglandaceae (*Walnut family*) (~~Walnut family~~)
- A61K 36/53 . . . ~~Lamiaceae or Labiatae(Mint family)~~ *Lamiaceae or Labiatae (Mint family)*, e.g. thyme, rosemary or lavender
- A61K 36/535 . . . Perilla (*beefsteak plant*) (~~beefsteak plant~~)
- A61K 36/54 . . . ~~Lauraceae(Laurel family)~~ *Lauraceae (Laurel family)*, e.g. cinnamon or sassafras
- A61K 36/55 . . . ~~Linaceae(Flax family)~~ *Linaceae (Flax family)*, e.g. Linum
- A61K 36/56 . . . ~~Loganiaceae(Logania family)~~ *Loganiaceae (Logania family)*, e.g. trumpetflower or pinkroot
- A61K 36/57 . . . Magnoliaceae (*Magnolia family*) (~~Magnolia family~~)
- A61K 36/58 . . . ~~Meliaceae(Chinaberry or Mahogany family)~~ *Meliaceae (Chinaberry or Mahogany family)*, e.g. Azadirachta (neem)
- A61K 36/59 . . . ~~Menispermaceae(Moonseed family)~~ *Menispermaceae (Moonseed family)*, e.g. hyperbaena or coralbead
- A61K 36/60 . . . ~~Moraceae(Mulberry family)~~ *Moraceae (Mulberry family)*, e.g. breadfruit or fig
- A61K 36/61 . . . ~~Myrtaceae(Myrtle family)~~ *Myrtaceae (Myrtle family)*, e.g. teatree or eucalyptus
- A61K 36/62 . . . Nymphaeaceae (*Water-lily family*) (~~Water-lily family~~)
- A61K 36/63 . . . ~~Oleaceae(Olive family)~~ *Oleaceae (Olive family)*, e.g. jasmine, lilac or ash tree
- A61K 36/64 . . . Orobanchaceae (*Broom-rape family*) (~~Broom-rape family~~)
- A61K 36/65 . . . ~~Paeoniaceae(Peony family)~~ *Paeoniaceae (Peony family)*, e.g. Chinese peony
- A61K 36/66 . . . ~~Papaveraceae(Poppy family)~~ *Papaveraceae (Poppy family)*, e.g. bloodroot
- A61K 36/67 . . . ~~Piperaceae(Pepper family)~~ *Piperaceae (Pepper family)*, e.g. Jamaican pepper or kava
- A61K 36/68 . . . Plantaginaceae (*Plantain Family*) (~~Plantain Family~~)
- A61K 36/69 . . . Polygalaceae (*Milkwort family*) (~~Milkwort family~~)
- A61K 36/70 . . . ~~Polygonaceae(Buckwheat family)~~ *Polygonaceae (Buckwheat family)*, e.g. spineflower or dock
- A61K 36/71 . . . ~~Ranunculaceae(Buttercup family)~~ *Ranunculaceae (Buttercup family)*, e.g. larkspur, hepatica, hydrastis, columbine or goldenseal
- A61K 36/716 . . . Clematis (*leather flower*) (~~leather flower~~)
- A61K 36/72 . . . ~~Rhamnaceae(Buckthorn family)~~ *Rhamnaceae (Buckthorn family)*, e.g. buckthorn, chewstick or umbrella-tree
- A61K 36/73 . . . ~~Rosaceae(Rose family)~~ *Rosaceae (Rose family)*, e.g. strawberry, chokeberry, blackberry, pear or firethorn
- A61K 36/74 . . . Rubiaceae (*Madder family*) (~~Madder family~~)

A61K 36/75	• • • Rutaceae ( <i>Rue family</i> )( <i>Rue family</i> )
A61K 36/76	• • • Salicaceae( <i>Willow family</i> ) <i>Salicaceae (Willow family)</i> , e.g. poplar
A61K 36/77	• • • Sapindaceae( <i>Soapberry family</i> ) <i>Sapindaceae (Soapberry family)</i> , e.g. lychee or soapberry
A61K 36/78	• • • Saururaceae ( <i>Lizard's-tail family</i> )( <i>Lizard's-tail family</i> )
A61K 36/79	• • • Schisandraceae ( <i>Schisandra family</i> )( <i>Schisandra family</i> )
A61K 36/80	• • • Scrophulariaceae ( <i>Figwort family</i> )( <i>Figwort family</i> )
A61K 36/81	• • • Solanaceae( <i>Potato family</i> ) <i>Solanaceae (Potato family)</i> , e.g. tobacco, nightshade, tomato, belladonna, capsicum or jimsonweed
A61K 36/82	• • • Theaceae( <i>Tea family</i> ) <i>Theaceae (Tea family)</i> , e.g. camellia
A61K 36/83	• • • Thymelaeaceae( <i>Mezereum family</i> ) <i>Thymelaeaceae (Mezereum family)</i> , e.g. leatherwood or false ohelo
A61K 36/84	• • • Valerianaceae( <i>Valerian family</i> ) <i>Valerianaceae (Valerian family)</i> , e.g. valerian
A61K 36/85	• • • Verbenaceae ( <i>Verbena family</i> )( <i>Verbena family</i> )
A61K 36/86	• • • Violaceae ( <i>Violet family</i> )( <i>Violet family</i> )
A61K 36/87	• • • Vitaceae or Ampelidaceae( <i>Vine or Grape family</i> ) <i>Vitaceae or Ampelidaceae (Vine or Grape family)</i> , e.g. wine grapes, muscadine or peppervine
U A61K 36/88	• • Liliopsida (monocotyledons)
A61K 36/882	• • • Acoraceae( <i>Calamus family</i> ) <i>Acoraceae (Calamus family)</i> , e.g. sweetflag or Acorus calamus
A61K 36/884	• • • Alismataceae ( <i>Water-plantain family</i> )( <i>Water-plantain family</i> )
A61K 36/886	• • • Aloeaceae( <i>Aloe family</i> ) <i>Aloeaceae (Aloe family)</i> , e.g. aloe vera
A61K 36/888	• • • Araceae( <i>Arum family</i> ) <i>Araceae (Arum family)</i> , e.g. caladium, calla lily or skunk cabbage
A61K 36/889	• • • Arecaceae, Palmae or Palmaceae( <i>Palm family</i> ) <i>Arecaceae, Palmae or Palmaceae (Palm family)</i> , e.g. date or coconut palm or palmetto
A61K 36/89	• • • Cyperaceae ( <i>Sedge family</i> )( <i>Sedge family</i> )
A61K 36/894	• • • Dioscoreaceae ( <i>Yam family</i> )( <i>Yam family</i> )
A61K 36/896	• • • Liliaceae( <i>Lily family</i> ) <i>Liliaceae (Lily family)</i> , e.g. daylily, plantain lily, Hyacinth or narcissus
A61K 36/8969	• • • • Polygonatum ( <i>Solomon's seal</i> )( <i>Solomon's seal</i> )
A61K 36/898	• • • Orchidaceae ( <i>Orchid family</i> )( <i>Orchid family</i> )
A61K 36/899	• • • Poaceae or Gramineae( <i>Grass family</i> ) <i>Poaceae or Gramineae (Grass family)</i> , e.g. bamboo, corn or sugar cane
A61K 36/8994	• • • • Coix ( <i>Job's tears</i> )( <i>Job's tears</i> )
A61K 36/90	• • • Smilacaceae( <i>Catbrier family</i> ) <i>Smilacaceae (Catbrier family)</i> , e.g. greenbrier or sarsaparilla
A61K 36/902	• • • Sparganiaceae ( <i>Bur-reed family</i> )( <i>Bur-reed family</i> )
A61K 36/904	• • • Stemonaceae( <i>Stemona family</i> ) <i>Stemonaceae (Stemona family)</i> , e.g. croomia
A61K 36/906	• • • Zingiberaceae ( <i>Ginger family</i> )( <i>Ginger family</i> )

## U A61K 38/00

Medicinal preparations containing peptides( peptides containing beta-lactam rings [A61K 31/00](#) ; cyclic dipeptides not having in their molecule any other peptide link than those which form their ring, e.g. piperazine-2,5-diones, [A61K 31/00](#) ; ergot alkaloids of the cyclic peptide type [A61K 31/48](#) ; containing macromolecular compounds having statistically distributed amino acid units [A61K 31/74](#) ; medicinal preparations containing antigens or antibodies [A61K 39/00](#) ; medicinal preparations characterised by the non-active ingredients, e.g. peptides as drug carriers, [A61K 47/00](#) )

## NOTES

The terms or expressions used in this group follow exactly the definitions given in Note (1) following the title of subclass [C07K](#) .

Preparations containing fragments of peptides or peptides modified by removal or addition of amino acids, by substitution of amino acids by others, or by combination of these modifications are classified as the preparations containing parent peptides. However, preparations containing fragments of peptides having only four or less amino acids are also classified in groups [A61K 38/05](#) to [A61K 38/07](#) .

Preparations containing peptides prepared by recombinant DNA technology are not classified according to the host, but according to the original peptide expressed, e.g. preparations containing HIV peptide expressed in E. coli are classified with the preparations containing HIV peptides.

This group covers also medicinal preparation containing DNA or RNA encoding for peptides as active ingredient.

Documents relating to new peptides, e.g. enzymes, or new DNA or RNA encoding for peptides and their use in medicinal preparations are classified in subclass [C07K](#) or in group [C12N 9/00](#) according to the peptides, with the appropriate indexing codes relating to their medical uses.

- U A61K 38/16 . Peptides having more than 20 amino acids; Gastrins; Somatostatins; Melanotropins; Derivatives thereof{( enzyme inhibitors [A61K 38/005](#) )}
- U A61K 38/17 . . from animals; from humans{( enzyme inhibitors [A61K 38/005](#) )}
- U A61K 38/1703 . . . {from vertebrates( [A61K 38/1767](#) takes precedence )}
- U A61K 38/1709 . . . . {from mammals}
- U A61K 38/1712 . . . . . {Not used, see subgroup}
- A61K 38/1761 . . . . . {Apoptosis related proteins, e.g. Apoptotic protease-activating factor-1 (APAF-1), Bax, Bax-inhibitory protein(s) ([B](#)l([B](#)l; [bax-1](#)); [Myeloid cell leukemia associated protein \(MCL-1\)](#); [Inhibitor of apoptosis \(IAP\)](#); [Bcl-2](#); [bax-1](#)), [Myeloid cell leukemia associated protein \(MCL-1\)](#), [Inhibitor of apoptosis \(IAP\)](#), [Bcl-2](#)}
- U A61K 38/177 . . . {Receptors; Cell surface antigens; Cell surface determinants}
- A61K 38/1774 . . . . {Immunoglobulin superfamily (e.g. [CD2](#), [CD4](#), [CD8](#), [ICAM molecules](#), [B7 molecules](#), [Fc-receptors](#), [MHC-molecules](#))}(e.g. [CD2](#), [CD4](#), [CD8](#), [ICAM molecules](#), [B7 molecules](#), [Fc-receptors](#), [MHC-molecules](#))}
- U A61K 38/22 . . . Hormones( derived from pro-opiomelanocortin, pro-enkephalin or pro-dynorphin [A61K 38/33](#) , e.g. corticotropin [A61K 38/35](#) )
- A61K 38/2278 . . . . {Vasoactive intestinal peptide (VIP); Related peptides (e.g. [Exendin](#))}(e.g. [Exendin](#))}
- U A61K 38/43 . . Enzymes; Proenzymes; Derivatives thereof

## NOTE

In this group, 1. proenzymes are classified with the corresponding enzymes; 2. enzymes are generally categorised according to the "Nomenclature and Classification of Enzymes" of the International Commission of Enzymes. Where appropriate, this designation appears in the subgroups below in

parenthesis. 3. the specific enzyme(s) used are additionally classified in [C12Y](#).

- U A61K 38/46                    · · · Hydrolases (3)
- U A61K 38/48                    · · · · acting on peptide bonds (3.4)
- A61K 38/4813                   · · · · · {Exopeptidases ([3.4.11. to 3.4.19](#)) }(~~3.4.11. to 3.4.19~~)}
- U A61K 38/482                   · · · · · {Serine endopeptidases (3.4.21)}
- A61K 38/4853                   · · · · · · {Kallikrein ([3.4.21.34 or 3.4.21.35](#)) }(~~3.4.21.34 or 3.4.21.35~~)}
- A61K 38/486                   · · · · · · {Elastase ([3.4.21.36 or 3.4.21.37](#)) }(~~3.4.21.36 or 3.4.21.37~~)}

**U A61K 39/00                    Medicinal preparations containing antigens or antibodies( materials for immunoassay [G01N 33/53](#) )**

**NOTES**

Groups [A61K 39/002](#) to [A61K 39/295](#) cover preparations containing protozoa, bacteria, viruses, or subunits thereof, e.g. membrane parts.

Preparation of antigen or antibody compositions is also classified in subclass [C12N](#) , if the step of cultivating the micro-organism is of interest.

Documents relating to new peptides, e.g. enzymes, or new DNA or RNA encoding for peptides and their use in medicinal preparations are classified in subclass [C07K](#) or in group [C12N 9/00](#) according to the peptides, with the appropriate indexing codes relating to their medical uses.

Documents relating to antibodies or DNA or RNA encoding for antibodies and their use in medicinal preparations are classified in group [C07K 16/00](#) or in group [C12N 9/0002](#) according to the antibodies, with the appropriate indexing codes relating to their medical uses.

Documents relating to new therapeutical uses of antibodies or DNA or RNA encoding for antibodies are classified in group [C07K 16/00](#) or in group [C12N 9/0002](#) according to the antibodies, with the appropriate indexing codes relating to their medical uses.

Documents relating to medicinal preparations containing different antibodies as active ingredients are classified in group [C07K 16/00](#) according to the different active antibodies, with the appropriate indexing codes relating to their medical uses. However, documents relating to medicinal preparations containing antibodies and other compounds as active ingredients are classified in groups [A61K 39/395](#) to [A61K 39/42](#) , in association with symbol [A61K 2300/00](#) in Combination Sets.

- U A61K 2039/60                    · {characteristics by the carrier linked to the antigen}
- A61K 2039/6012                   · · {Haptens, e.g. di- or trinitrophenyl ([DNP, TNP](#)) }(~~DNP, TNP~~)}

**U A61K 47/00                    Medicinal preparations characterised by the non-active ingredients used, e.g. carriers, inert additives**

- U A61K 47/06                    · Organic compounds,{e.g. mineral oil, petrolatum, synthetic polyolefins}
- U A61K 47/08                    · · containing oxygen,{e.g. ethers, acetals, ketones, quinones, aldehydes, peroxides}
- A61K 47/10                    · · · Alcohols; Phenols; Salts thereof,{e.g. glycerol; Polyethylene glycol [\[PEG\]](#)(~~PEG~~); Poloxamers; PEG/POE alkyl ethers( sugar alcohols [A61K 47/26](#) ; copolymers containing polyalkylene glycol or poloxamer [A61K 47/34](#) )}
- A61K 47/44                    · Oils, fats or waxes according to more than one of groups [A61K 47/02](#) to [A61K 47/42](#) ; {~~Natural or modified natural oils, fats or waxes, e.g. (polyethoxylated)~~ }([Natural or modified natural oils, fats or waxes, e.g. \(polyethoxylated\)](#) castor oil, montan wax, ozokerite, lignite, shellac, rosin, beeswax, lanolin( synthetic glycerides, e.g. medium-chain triglycerides [A61K 47/14](#) )}



- U A61K 47/48      • the non-active ingredient being chemically bound to the active ingredient, e.g. polymer drug conjugates
- U A61K 47/48007      • • {the pharmacologically- or therapeutically-active agent being covalently bound or complexed to a modifying agent}

NOTE

The modifying agent being a macromolecular compound [A61K 47/48169](#), a peptide, protein or polyamino acid [A61K 47/48238](#), an antibody or immunoglobulin [A61K 47/48369](#)

- U A61K 47/48023      • • • {the modifying agent being an organic compound( [A61K 47/48161](#) takes precedence )}

- A61K 47/48092      • • • • {the modifying agent linked to the pharmacologically or therapeutically active agent being a sugar, nucleoside, nucleotide, nucleic acid}{~~Note nucleic acids can be coding, non-coding, nucleic acid which being therapeutically-active or not, e.g.: oligonucleotides, DNA, RNA, siRNA, nucleic acid aptamers~~}

NOTE

*nucleic acids can be coding, non-coding, nucleic acid which being therapeutically-active or not, e.g.: oligonucleotides, DNA, RNA, siRNA, nucleic acid aptamers*

- A61K 47/481      • • • • {the modifying agent being also a pharmacologically or therapeutically active agent, i.e. the entire conjugate being a codrug, i.e. a dimer, oligomer or polymer of pharmacologically or therapeutically active compounds, e.g. a polymer of aspirin}{~~Note a sugar, nucleoside, nucleotide, nucleic acid is classified in A61K 47/48092 ; a polymer of an active agent is not classified in A6K47/48K6~~}

NOTE

*a sugar, nucleoside, nucleotide, nucleic acid is classified in A61K 47/48092 ; a polymer of an active agent is not classified in A6K47/48K6*

- A61K 47/48107      • • • • • {one of the codrug's components being a vitamin, e.g. niacinamide (*vitamin B3*), cobalamin (*vitamin B12*), folate, vitamin A, retinoic acid}{~~vitamin B3, cobalamin(vitamin B12), folate, vitamin A, retinoic acid~~}

- U A61K 47/48238      • • {the modifying agent being a protein, peptide, polyamino acid}

NOTE

antibodies or immunoglobulins are classified in [A61K 47/48369](#) subgroups  
Special physical or galenic forms modified by covalent attachment or complexation of a protein, peptide or polyamino acid, are given the [A61K 47/48238](#) class in addition to their corresponding [A61K 47/48769](#) subgroup, e.g. a liposome modified on its surface by a peptide being classified in [A61K 47/48815](#) and [A61K 47/48238](#) , a PLGA nanoparticle modified on its surface by a peptide being classified in [A61K 47/48915](#) and in [A61K 47/48238](#) Peptidic linkers used to connect a drug and a modifying agent are classified in [A61K 47/48338](#) , the modifying agent being also classified if it being defined



- U A61K 47/48246
- • • {drug-peptide, protein or polyamino acid conjugates, i.e. the modifying agent being a protein, peptide, polyamino acid which being linked/complexed to a molecule that being the pharmacologically or therapeutically active agent}{peptidic linker are classified in [A61K 47/48338](#) }
- NOTE  
The connection of the drug to the peptide, protein or polyamino acid can be by a direct covalent linkage or through a linker Fusion/chimeric proteins genetically produced, e.g. by recombinant DNA technology, are classified in [C07K 2319/00](#) and subgroups, not in [A61K 47/48246](#) and subgroups. [A61K 47/48246](#) and its subgroups only cover the conjugates wherein a peptide or protein being the pharmacologically or therapeutically active agent has been linked to another peptide or protein being the modifying agent via chemical methods. In that latter example of a chemically-produced peptide or protein-peptide or protein conjugate, what being classified in [A61K 47/48246](#) or in one of its subgroups being the peptide or protein used as modifying agent
- A61K 47/48276
- • • {the peptide or protein in the drug conjugate being a receptor as such, e.g. CD4; a cell surface antigen (*therefore not a peptide ligand targeting the antigen*)(~~therefore not a peptide ligand targeting the antigen~~); a cell surface determinant, i.e. a part of the surface of a cell}
- NOTE  
a peptide targeting a receptor being not classified here
- U A61K 47/48369
- • {the modifying part being an antibody, an immunoglobulin, or a fragment thereof, e.g. a Fc-fragment}
- U A61K 47/48376
- • • {drug-antibody or immunoglobulin conjugates defined by the pharmacologically or therapeutically active agent}
- NOTE  
The modifying part being an antibody or immunoglobulin bearing antigen-binding sites
- U A61K 47/48384
- • • {drug conjugated to an antibody or immunoglobulin, e.g. cisplatin-antibody conjugates}
- NOTE  
The modifying part being an antibody or immunoglobulin bearing at least one antigen-binding site. In [A61K 47/48384](#) and its subgroups, classification being made according to the nature of the drug, i.e. the pharmacologically or therapeutically active agent in the antibody conjugate. If the nature of the antibody in a specific conjugate being known, it being indicated with the corresponding [A61K 47/48507](#) subgroup, in addition to the subgroup [A61K 47/48384](#) characterizing the drug. If the conjugate comprises also a polymer or a polyamino acid, then the class [A61K 47/48692](#) or [A61K 47/487](#) being also given
- U A61K 47/48415
- • • • {the drug being a protein or peptide, e.g. transferrin or bleomycin}
- U A61K 47/48438
- • • • • {the drug being a toxin}
- U A61K 47/48446
- • • • • • {the drug being a plant toxin}
- U A61K 47/48453
- • • • • • • {the drug being a plant heterodimeric toxin; chains A or B containing toxins, e.g. abrin, modeccin}
- A61K 47/48461
- • • • • • • • {the drug being ricin (*double chain*)}(~~double chain~~)
- A61K 47/48469
- • • • • • • • {the drug being a ribosomal inhibitory protein, (*RIP-i or RIP-II*), e.g. *Pap, gelonin, dianthin*}(~~RIP-i or RIP-II~~), e.g. *Pap, gelonin, dianthin*}

- U A61K 47/48769      • • {the conjugate being characterized by a special physical or galenical form}

NOTE

The conjugates in the [A61K 47/48769](#) subgroups correspond (i) either to a pharmacologically or therapeutically active agent complexed/covalently linked to the special physical or galenical form, e.g. on the surface of a polymeric nanoparticle or liposome, or to polymeric chains in the matrix of a polymeric gel, (ii) or to a special physical or galenical form encapsulating the pharmacologically or therapeutically active agent and modified on its surface or matrix by a modifying agent. In case (i), classification being made according to the nature of the special physical or galenical form in the appropriate [A61K 47/48769](#) subgroup and may be completed by the appropriate [A61K 47/48](#) subgroup defining the compound to which the pharmacologically or therapeutically active agent being linked, e.g. [A61K 47/48053](#) in case of a drug linked to a phospholipid and inserted in the bilayer surface of a liposome. In case (ii), classification being made according to the nature of the modifying agent. Physical or galenical forms not modified by a modifying agent and/or wherein the pharmacologically or therapeutically active agent being not complexed/covalently linked to said forms, are not classified in [A61K 47/48](#) , but in [A61K 9/00](#) and its subgroups

- U A61K 47/48792      • • • {the form being a colloid, emulsion, i.e. having at least a dispersed/continuous oil phase and a dispersed/continuous aqueous phase, dispersion or suspension}

- U A61K 47/48815      • • • {the form being a liposome, i.e. a bilayered vesicle, having its surface modified by covalent attachment or complexation of the pharmacologically or therapeutically active agent and/or modifying agent. ( Simple encapsulation of a drug which being not functionalised on its surface by a modifying agent: see [A61K 9/127](#) )}

NOTE

Liposomes modified by a polymer because they incorporate a polymer-lipid conjugate are only additionally classified in [A61K 47/48815](#) if the polymer modifying the lipid being unusual. Liposomes which are pegylated because they incorporate a pegylated lipid are not classified in [A61K 47/48815](#) but in [A61K 9/1271](#). When the surface of the liposome being functionalised by a modifying agent, classification being also made according to the nature of this modifying agent, e.g. a liposome modified on its surface by a peptide being classified in [A61K 47/48815](#) and [A61K 47/48238](#). In case of antibodies, see [A61K 47/48823](#) . Liposomes wherein the pharmacologically or therapeutically active agent being linked to a phospholipid of the liposomal surface are classified in [A61K 47/48815](#) and [A61K 47/48053](#) ]

- A61K 47/4883      • • • • {the form being a polymersome, i.e. a liposome with polymerisable or polymerized bilayer-forming substances}{~~Note Liposomes comprising polymers grafted on their surface are not classified in A61K 47/4883, but in A61K 47/48815 if the polymer being unusual, or in A61K 9/1271~~}

NOTE

*Liposomes comprising polymers grafted on their surface are not classified in [A61K 47/4883](#) , but in [A61K 47/48815](#) if the polymer being unusual, or in [A61K 9/1271](#)*

- U A61K 47/48853      • • • {the form being a particulate, powder, adsorbate, bead, sphere}

A61K 47/48876	<ul style="list-style-type: none"> <li>• • • {the form being a solid microparticle having no hollow or gas-filled core}<del>{Note Its size or diameter being higher or equal to 1 micrometer}</del></li> </ul> <p><u>NOTE</u> { Note Its size or diameter being higher or equal to 1 micrometer }</p>
A61K 47/48884	<ul style="list-style-type: none"> <li>• • • {the form being a nanoparticle, e.g. an immuno-nanoparticle}<del>{ Note Its size or diameter being smaller than 1 micrometer. Classification being also made according to the nature of the antibody with the appropriate A61K 47/48515 subgroup }</del></li> </ul> <p><u>NOTE</u> { Note Its size or diameter being smaller than 1 micrometer. Classification being also made according to the nature of the antibody with the appropriate <a href="#">A61K 47/48515</a> subgroup }</p>
A61K 47/48892	<ul style="list-style-type: none"> <li>• • • • {the material constituting the nanoparticle being a polymer}<del>{ Note The subgroups A61K 47/48169 are not additionally used }</del></li> </ul> <p><u>NOTE</u> The subgroups <a href="#">A61K 47/48169</a> are not additionally used</p>
<b>U A61K 49/00</b>	<b>Preparations for testing in vivo</b>
U A61K 49/06	<ul style="list-style-type: none"> <li>• Nuclear magnetic resonance (NMR) contrast preparations; Magnetic resonance imaging (MRI) contrast preparations</li> </ul> <p><u>NOTE</u> characterised only by the (inorganic) MRI-active nucleus, e.g. <sup>129</sup>Xe</p>
U A61K 49/18	<ul style="list-style-type: none"> <li>• • characterised by a special physical form, e.g. emulsions, microcapsules, liposomes</li> </ul> <p><u>NOTE</u> Classification being also made according to the molecule complexing or bearing the MRI-active nucleus</p>
U A61K 49/1818	<ul style="list-style-type: none"> <li>• • {particles, e.g. uncoated or non-functionalised microparticles or nanoparticles}</li> </ul> <p><u>NOTE</u> For nanoparticles, i.e. having a size or diameter smaller than 1 micrometer, the subgroups <a href="#">B82Y 5/00</a> and <a href="#">B82Y 15/00</a> are also given</p>
U A61K 49/1821	<ul style="list-style-type: none"> <li>• • • {coated or functionalised microparticles or nanoparticles}</li> </ul>
U A61K 49/1824	<ul style="list-style-type: none"> <li>• • • • {coated or functionalised nanoparticles( liposomes <a href="#">A61K 49/1812</a> ; nano-emulsions <a href="#">A61K 49/1806</a> ; micelles <a href="#">A61K 49/1809</a> )}</li> </ul>
U A61K 49/1827	<ul style="list-style-type: none"> <li>• • • • • {having a (super)(para)magnetic core, being a solid MRI-active material, e.g. magnetite, or composed of a plurality of MRI-active, organic agents e.g. Gd-chelates, or nuclei, e.g. Eu<sup>3+</sup>, encapsulated or entrapped in the core of the coated or functionalised nanoparticle}</li> </ul>
A61K 49/1833	<ul style="list-style-type: none"> <li>• • • • • <del>{having a (super)}</del><a href="#">{having a (super)}</a>(para)magnetic core coated or functionalised with a small organic molecule( oligomeric, polymeric, dendrimeric <a href="#">A61K 49/1851</a> )}</li> </ul>
A61K 49/1845	<ul style="list-style-type: none"> <li>• • • • • • {the small organic molecule being a carbohydrate <a href="#">(monosaccharides, discacharides)</a><del>{monosaccharides; discacharides}</del>}</li> </ul>

- A61K 49/1851 . . . . . ~~{having a(super)}~~**{having a (super)}**(para)magnetic core coated or functionalised with an organic macromolecular compound, i.e. oligomeric, polymeric, dendrimeric organic molecule( peptide or protein [A61K 49/1866](#) ; polyamino acid [A61K 49/1872](#) ; antibody [A61K 49/1875](#) )}

NOTE

In case of block copolymers, the different (large) blocks are classified in the appropriate [A61K 47/48169](#) or [A61K 47/48238](#) subgroups

**U A61K 51/00 Preparations containing radioactive substances for use in therapy or testing in vivo**

- U A61K 51/02 . characterised by the carrier,{i.e. characterised by the agent or material covalently linked or complexing the radioactive nucleus}
- U A61K 51/04 . . organic compounds

NOTE

Organic compounds used as carriers

- A61K 51/0474 . . . ~~{complexes or complex-forming compounds, i.e. wherein a radioactive metal(e.g. 111In3+)}~~**{complexes or complex-forming compounds, i.e. wherein a radioactive metal (e.g. 111In3+)** is complexed or chelated by e.g. a N<sub>2</sub>S<sub>2</sub>, N<sub>3</sub>S, NS<sub>3</sub>, N<sub>4</sub> chelating group}

NOTE

Classification is made according to the nature of this complex-forming agent, if it is either an uncommon or new complexing agent (not the usual DTPA, DOTA, DOTP, MAG3 etc...groups) that forms the real contribution to the claimed invention (radioimaging or radiotherapeutic agent), or if it is not conjugated to any further molecule, e.g. which is not conjugated to a polymer, peptide, protein or antibody. In that latter case, the radioactive agent is e.g. a radioactive metal chelate

- U A61K 51/0478 . . . {complexes from non-cyclic ligands, e.g. EDTA, MAG3}
- A61K 51/048 . . . . {DTPA **(diethylenetriamine tetraacetic acid)**}~~(diethylenetriamine tetraacetic acid)}~~
- U A61K 51/12 . characterised by a special physical form, e.g. emulsion, microcapsules, liposomes,{characterized by a special physical form, e.g. emulsions, dispersions, microcapsules( liposomes [A61K 51/1234](#) )}
- U A61K 51/1217 . . {Dispersions, suspensions, colloids, emulsions, e.g. perfluorinated emulsion, sols}
- A61K 51/1234 . . . {Liposomes}~~{Note Liposomes modified on their external surface by a targeting agent, e.g. an antibody, are not additionally classified with the symbol of the targeting agent}~~

NOTE

**Note**-Liposomes modified on their external surface by a targeting agent, e.g. an antibody, are not additionally classified with the symbol of the targeting agent

**A61K 2800/00**

**Properties of cosmetic compositions or active ingredients thereof or formulation aids used therein and process related aspects**  
~~**[Note: This subclass is a secondary classification, e.g. obligatory supplementary classification when already classified in group A61K 8/00 or subclass A61Q ]**~~

NOTE

*This subclass is a secondary classification, e.g. obligatory supplementary classification when already classified in group [A61K 8/00](#) or subclass [A61Q](#)*

U **A61K 2800/40**

• Chemical, physico-chemical or functional or structural properties of particular ingredients

**A61K 2800/57**

• ~~Compounds covalently linked to a(n-inert)~~ *Compounds covalently linked to a(n inert)* carrier molecule, e.g. conjugates, pro-fragrances

**Project: N/A (A61L)****A61L 15/00**

**Chemical aspects of, or use of materials for, bandages, dressings or absorbent pads( for liquid bandages [A61L 26/00](#) ; radioactive dressings { [A61N 5/1029](#) })**

NOTES

In each set of groups [A61L 15/08](#) to [A61L 15/12](#) and [A61L 15/18](#) to [A61L 15/40](#) , in the absence of an indication to the contrary, classification is made in the last appropriate place.

When classifying in groups [A61L 15/08](#) to [A61L 15/12](#) , classification is also made in group ~~15/14~~ [A61L 15/14](#) if the use of materials characterised by their function or physical properties is of interest.

When classifying in groups [A61L 15/18](#) to [A61L 15/40](#) , classification is also made in groups [A61L 15/42](#) to [A61L 15/64](#) if the use of materials characterised by their function or physical properties is of interest.

**A61L 29/00**

**Materials for catheters,{medical tubing, cannulae, or endoscopes}or for coating catheters( shape or structure of catheters [A61M 25/00](#) )**

NOTES

In groups [A61L 29/02](#) to { ~~A61L29/12D~~ [A61L 29/126](#) } , in the absence of an indication to the contrary, classification is made in the last appropriate place

When classifying in groups [A61L 29/02](#) to { ~~A61L29/12D~~ [A61L 29/126](#) } , classification is also made in groups [A61L 29/14](#) to [A61L 29/18](#) if the use of materials characterised by their function or physical properties is of interest

When classifying in group [A61L 29/00](#) , classification is also made in [A61L 33/00](#) if the materials used are antithrombogenic

In group [A61L 29/00](#) , the use of specific polymers is indicated using the relevant classification symbols of subclass [C08L](#) in the combination set, e.g. a catheter based on polyvinylchloride [A61L 29/041](#), [C08L 27/06](#)

**Project: N/A (A61Q)****A61Q****SPECIFIC USE OF COSMETICS OR SIMILAR TOILET PREPARATIONS**NOTE

~~[C12:03]~~

1. This subclass covers the use of cosmetics or similar toilet preparations already classified as such in main group [A61K 8/00](#) or in addition thereto in

subclasses [C11D](#) and [C12N](#) or in classes [C01](#), [C07](#) and [C08](#). 2. Since subclass **A61P** is not activated in ECLA, relevant IPC Note (2) is not applicable.

#### WARNING

The groups of subclass [A61Q](#) are incomplete. See provisionally also **A61K7/00** and subgroups

### Project: RP0025 (A62B)

#### A62B

**DEVICES, APPARATUS OR METHODS FOR LIFE-SAVING** (valves specially adapted for medical use [A61M 39/00](#); life-saving devices, apparatus or methods specially adapted for use in water [B63C 9/00](#); divers' equipment [B63C 11/00](#); specially adopted for use with aircraft, e.g. parachutes, ejector seats, ~~B64D~~ [B64D 17/00](#), [B64D 25/10](#)); rescue devices peculiar to mining [E21F 11/00](#))

### Project: N/A (A62D)

#### A62D 2101/00

**Harmfull chemical substances made harmless, or less harmful, by effecting chemical change** **Notes (1) The indexing codes of group A62D 2101/00 are to be used for identifying the origin or chemical nature of the harmful chemical substances which are made harmless or less harmful by processes already classified as such in groups A62D 3/02 to A62D 3/40 (2) When indexing a substance in groups A62D 2101/02 to A62D 2101/08, indexing according to its chemical structure is also made in one or more of groups A62D 2101/20 to A62D 2101/40, if of interest**

#### NOTES

*(1) The indexing codes of group A62D 2101/00 are to be used for identifying the origin or chemical nature of the harmful chemical substances which are made harmless or less harmful by processes already classified as such in groups A62D 3/02 to A62D 3/40*

*(2) When indexing a substance in groups A62D 2101/02 to A62D 2101/08, indexing according to its chemical structure is also made in one or more of groups A62D 2101/20 to A62D 2101/40, if of interest*

### Project: N/A (A63B)

#### A63B

**APPARATUS FOR PHYSICAL TRAINING, GYMNASTICS, SWIMMING, CLIMBING, OR FENCING; BALL GAMES; TRAINING EQUIPMENT**(apparatus for passive exercising, massage [A61H](#))

#### WARNING

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

<a href="#">A63B 7/06</a>	covered by	<a href="#">A63G 1/00</a>	
<a href="#">A63B 21/075</a>	covered by	<a href="#">A63B 21/072</a>	
<a href="#">A63B 21/08</a>	covered by	<a href="#">A63B 21/06</a>	
<a href="#">A63B 22/08</a>	covered by	<a href="#">A63B 22/0605</a>	in
absence of	<del>A63B22/00A</del> <a href="#">A63B 22/0002</a>		
<a href="#">A63B 22/10</a>	covered by	<a href="#">A63B 22/0605</a>	in
combination with	<del>A63B22/00A</del> <a href="#">A63B 22/0002</a>		
<a href="#">A63B 22/12</a>	covered by	<a href="#">A63B 22/0605</a>	in
combination with	<a href="#">A63B 22/001</a>		
<a href="#">A63B 29/04</a>	covered by	<a href="#">A63B 29/00</a>	
<a href="#">A63B 31/16</a>	covered by	<a href="#">A63B 31/14</a>	
<a href="#">A63B 49/06</a>	covered by	<a href="#">A63B 49/02</a>	
<a href="#">A63B 51/16</a>	covered by	<a href="#">A63B 51/14</a>	
<a href="#">A63B 55/06</a>	covered by	<a href="#">A63B 55/04</a>	



<a href="#">A63B 63/02</a>	covered by	<a href="#">A63B 63/00</a>
<a href="#">A63B 63/04</a>	covered by	<a href="#">A63B 63/00</a>
<a href="#">A63B 69/22</a>	covered by	<a href="#">A63B 69/20</a>
<a href="#">A63B 69/28</a>	covered by	<a href="#">A63B 69/20</a>
<a href="#">A63B 69/30</a>	covered by	<a href="#">A63B 69/20</a>
<a href="#">A63B 71/16</a>	covered by	<del>A63B 71/08A</del> <a href="#">A63B 71/081</a>

**U A63B 21/00** Exercising apparatus for developing or strengthening the muscles or joints of the body by working against a counterforce, with or without measuring devices( electric or electronic controls therefor [A63B 24/00](#) ; measuring muscular strength [A61B 5/22](#) )

- U A63B 21/00003 · {Special force transmissions therefor}
- U A63B 21/00007 · · {using flexible elements for reciprocating movements, e.g. ropes, chain(flexible ropes or chains for transmission between rotating axes or pulleys n.c.)}
- U A63B 21/00018 · · · {using special pulley-assemblies}
- A63B 21/00025 · · · · {the position of one (or more) pulleys being variable (e.g. for different exercises)}(or more)pulleys being variable(e.g. for different exercises)}
- U A63B 21/00079 · {details of the interface with the user related to strength training}

WARNING

not complete, pending the completion of a reclassification

- U A63B 21/00083 · · { kind of exercise interface; chairs and stools with exercising means [A47C 9/002](#) }

WARNING

not complete, pending the completion of a reclassification

- A63B 21/00109 · · · ~~N~~· {contoured to fit to specific body parts; e.g. back, knee or neck support; attachment on user's body [A63B 21/00138](#) t.p. ; handles, pedals, bar or platform [A63B 21/00094](#) t.p.}

WARNING

not complete, pending the completion of a reclassification

**U A63B 23/00** Exercising apparatus specially adapted for particular parts of the body( [A63B 22/00](#) takes precedence; force-resisting aspects [A63B 21/00](#) ; electric or electronic controls therefor [A63B 24/00](#) ; devices for exercising or strengthening of fingers, or arms in teaching operation of keyboards [G09B 15/06](#) )

- U A63B 23/035 · for limbs, i.e. upper or lower limbs, e.g. simultaneously
- U A63B 23/04 · · for lower limbs{( Training appliances for special sports [A63B 69/00](#) ; For the purpose of producing mechanical power [F03G 5/00](#) )}
- A63B 23/0476 · · · {by rotating cycling movement( arrangements on or for real bicycles [A63B 69/16](#) )}

WARNING

Group ~~23/04C~~ [A63B 23/0476](#) is no longer used for classification.

Documents are in the process of being reorganised to group [A63B 22/06](#)

**Project: N/A (A63C)**

**U A63C 17/00** Roller skates; Skate-boards

- U A63C 17/22 · Wheels for roller skates
- A63C 17/226 · · ~~N~~· {Wheel mounting, i.e. arrangement connecting wheel and axle mount}

**Project: N/A (A63H)****U** A63H 11/00**Self-movable toy figures**

U A63H 11/18

- Figure toys which perform a realistic walking motion

A63H 11/20

- with pairs of legs, e.g. horses-~~[WARNING: New group A63H 11/20 introduced in November 2005 is not complete. Documents from A63H 11/18 are in the process of being reorganised to the new group]~~

**WARNING**

*New group A63H 11/20 introduced in November 2005 is not complete. Documents from A63H 11/18 are in the process of being reorganised to the new group*

**Project: RP0025 (A63H)****U** A63H 33/00**Other toys**

A63H 33/20

- Toys with parachutes; Toy parachutes ~~{{(A63H 27/004, A63H 27/005, and A63H 27/087 take precedence};~~ parachutes for aeronautics ~~B64D B64D 17/00)}~~

**Project: N/A (B01D)****B01D**

**SEPARATION( separating solids from solids by wet methods [B03B](#), [B03D](#); by pneumatic jigs or tables [B03B](#); by other dry methods [B07](#); magnetic or electrostatic separation of solid materials from solid materials or fluids, separation by high-voltage electric fields [B03C](#); centrifuges, vortex apparatus [B04](#); presses per se for squeezing-out liquid from liquid-containing material [B30B 9/02](#) ; treatment of water [C02F](#), e.g. softening by ion-exchange [C02F 1/42](#) ; { arrangements of air intake cleaners in gas turbine plants [F02C 7/05](#) } ; arrangements or mounting of filters in air-conditioning, air-humidification or ventilation [F24F 13/28](#) )**

**NOTE**

This subclass covers:

- evaporation, distillation, crystallisation, filtration, dust precipitation, gas cleaning, absorption, adsorption;

- similar processes which are not concerned with, or limited to, separation (except in the case of absorption or adsorption).

In this subclass the terms or expressions are used with the meaning indicated:

- "filtration" and analogous terms include straining solids from fluids;

- "filter medium" is a porous material or porous arrangement of material used to filter solids from fluids;

- "filtering element" is a section of filter medium in addition to parts to which the medium is demountably or permanently fixed, including other sections of medium, end caps, peripheral frames or edge strips, but excluding housings;

- "filter housing" is the fluid-constraining impervious vessel, whether open or closed, which contains, or is adapted to contain, one or more filtering elements or filter media;

- "filter chamber" is the space within a housing, where filtering elements or filter media are located.

Partitions may divide a single housing into a plurality of chambers;

- "filtering apparatus" consists of filtering elements combined with housings, cleaning arrangements, motor or the like parts, which are characteristic of the

particular type of apparatus. Ancillary devices such as pumps or valves are considered part of a filtering apparatus when inside the apparatus. Ancillary devices performing similar or different unit operation such as comminutors, mixers or non-filtering separators, whether or not inside the apparatus, are not considered part of a filtering apparatus. The term does not extend to apparatus, e.g. washing machines, of which the filter forms only a part. For apparatus used in drying or evaporation, [F26](#) takes precedence over [B01D](#).

Group [B01D 59/00](#) takes precedence over the other groups of this subclass and over other subclasses in class [B01](#)

#### WARNING

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

<a href="#">B01D 19/0454</a>	covered by	
<a href="#">B01D 9/00</a>		
<a href="#">B01D 15/04</a>	covered by	<a href="#">B01J 39/00</a>
to		
<a href="#">B01D 17/022</a>	covered by	<a href="#">B01J 49/02</a>
<a href="#">B01D 17/0202</a>		
<a href="#">B01D 17/025</a>	covered by	<b>B01D17/02F</b>
<a href="#">B01D 17/0208</a>		
<a href="#">B01D 17/028</a>	covered by	
<a href="#">B01D 17/0211</a>		
<a href="#">B01D 17/032</a>	covered by	
<a href="#">B01D 17/0214</a>		
<a href="#">B01D 17/035</a>	covered by	<b>B01D17/02D</b>
<a href="#">B01D 17/0205</a>		
<a href="#">B01D 17/038</a>	covered by	
<a href="#">B01D 17/0217</a>		
<a href="#">B01D 17/05</a>	covered by	<b>B01D17/04J</b>
<a href="#">B01D 17/047</a>		
<a href="#">B01D 17/09</a>	covered by	
<a href="#">B01D 17/005</a>		
<a href="#">B01D 17/12</a>	covered by	
<a href="#">B01D 17/00</a>		
<a href="#">B01D 25/133</a>	covered by	
<a href="#">B01D 25/285</a>		
<a href="#">B01D 25/168</a>	covered by	
<a href="#">B01D 25/285</a>		
<a href="#">B01D 25/21</a>	covered by	
<a href="#">B01D 25/164</a>		
<a href="#">B01D 29/075</a>	covered by	<a href="#">B01D 29/62</a>
,		
<a href="#">B01D 29/76</a>		
<a href="#">B01D 29/37</a>	covered by	<a href="#">B01D 29/336</a>
,		
<a href="#">B01D 29/356</a>		
<a href="#">B01D 33/052</a>	covered by	
<a href="#">B01D 33/64</a>		
<a href="#">B01D 35/01</a>	covered by	<b>B01D36/00D</b>
<a href="#">B01D 36/001</a>		
<a href="#">B01D 61/26</a>	covered by	
<a href="#">A61M 1/1656</a>		
<a href="#">B01D 61/34</a>	covered by	<a href="#">A61M 1/16</a>

5. The group [B01D 24/00](#) was introduced in March 1989. This group includes subject matter of [B01D 23/00](#) , [B01D 25/06](#) , [B01D 25/10](#) , [B01D 29/0027](#) , [B01D 33/0032](#) and [B01D 33/0054](#) .

6. Documents from the backlog of the group [B01D 23/00](#) , and the subgroups [B01D 25/06](#) , [B01D 25/10](#) , [B01D 29/0027](#) , [B01D 33/0032](#) and [B01D 33/0054](#) are in the process of being revised and also systematically transferred to [B01D 24/00](#) .

7. The groups [B01D 29/01](#) to [B01D 29/43](#) and [B01D 29/50](#) to [B01D 29/965](#) were introduced in March 1989; these subgroups include the subject matter of the subgroups of groups [B01D 29/0002](#) , which are from this date no longer use for the classification of new documents.

8. The documents from the backlog of the subgroups of group [B01D 29/0002](#) are in the process of being systematically transferred to the other subgroups of group [B01D 29/00](#) .

11. The documents from the backlog of the subgroups of group [B01D 33/0003](#) are in the process of being systematically transferred to the other subgroups of group [B01D 33/00](#) .

9. Groups [B01D 25/16](#) , [B01D 25/18](#) and [B01D 25/20](#) are no longer used for the classification of new. Patent documents are continuously being reclassified to groups [B01D 29/44](#) , [B01D 29/46](#) and [B01D 29/48](#) .

10. The groups [B01D 25/04](#) , [B01D 25/08](#) , [B01D 25/121](#) , [B01D 25/122](#) , [B01D 25/124](#) , [B01D 25/125](#) , [B01D 25/14](#) , are no longer used for classification of new documents from December 1, 2011 onwards. The backlog of those groups are being continuously reclassified to groups [B01D 25/00](#) , [B01D 29/00](#) and subgroups.

**U B01D 1/00** Evaporating({ evaporation in general, e.g. of liquids for gas phase reactions [B01B 1/005](#) } ; removal of incrustation [B08B](#); preparation of starch [C08B 30/00](#) ; sugar industry [C13](#); prevention of incrustation [C23F](#); drying solid materials or objects by evaporating liquids therefrom [F26](#) )

U B01D 1/30  
B01D 1/305  
• Accessories for evaporators;{Constructional details thereof}  
• {Demister ([vapour-liquid separation](#))}(~~vapour-liquid separation~~)

**U B01D 11/00** Solvent extraction  
B01D 11/02  
• of solids

#### NOTE

Combinations of characteristics of individual groups, e.g. [B01D 11/0226](#) and [B01D 11/028](#) are expressed as [B01D 11/0226](#) +~~02S~~[B01D 11/028](#)

**B01D 17/00** Separation of liquids, not provided for elsewhere, e.g. by thermal diffusion( devices for separating or removing fatty or oily substances or similar floating material from water, waste water, or sewage [C02F 1/40](#) ; cleaning or keeping clear the surface of open water from oil or like materials [E02B 15/04](#) ; arrangements for separating lubricants from refrigerants [F25B 43/02](#) )

#### NOTE

in this group, documents are classified and arranged according to a combination system limited to the symbols of the group and subgroups of [B01D 17/00](#) . In this system each combination is indicated, also of subgroups depending from the same group, e.g. [B01D 17/041](#) +~~04D~~[B01D 17/042](#)

## U B01D 21/00

Separation of suspended solid particles from liquids by sedimentation({ separation of ores or the like by sedimentation [B03B 5/48](#) to [B03B 5/60](#) } ; differential sedimentation [B03D 3/00](#) ; { purification of water, waste water, sewage or sludge [C02F](#), e.g. } devices for separating or removing fatty or oily substances or similar floating material from water, waste water or sewage [C02F 1/40](#) )

## WARNING

The following groups are not complete: [B01D 21/0006](#), see also [B01D 21/00](#) [B01D 21/0018](#), see also [B01D 21/00](#) [B01D 21/0054](#), see also [B01D 21/00](#) [B01D 21/0057](#), see also [B01D 21/00](#) [B01D 21/003](#), see also [B01D 21/00](#) [B01D 21/0036](#), see also [B01D 21/00](#) [B01D 21/0087](#), see also [B01D 21/00](#) [B01D 21/2416](#), see also [B01D 21/2405](#) [B01D 21/2422](#), see also [B01D 21/2405](#) [B01D 21/2427](#), see also [B01D 21/24](#) [B01D 21/2433](#), see also [B01D 21/24](#) [B01D 21/262](#), see also [B01D 21/26](#) [B01D 21/265](#), see also [B01D 21/26](#) [B01D 21/267](#), see also [B01D 21/26](#) [B01D 21/28](#), see also [B01D 21/28](#) [B01D 21/302](#), see also [B01D 21/30](#) **B01D21/30B**, see also [B01D 21/30](#) ]

## B01D 21/30

- Control equipment

## WARNING

Groups [B01D 21/302](#) to [B01D 21/34](#) are not complete, see also [B01D 21/30](#)

*Groups [B01D 21/302](#) to [B01D 21/34](#) are not complete, see also [B01D 21/30](#)*

## Project: N/A (B01F)

## U B01F 5/00

Flow mixers (sprayers, atomisers [B05B](#)); Mixers for falling materials, e.g. solid particles ([B01F 13/04](#) takes precedence; centrifugal mixers [B04](#))

## U B01F 5/02

- Jet mixers {([B01F 5/0057](#) take precedence; with gas agitation, i.e. for fluidisation [B01F 13/02](#))}

## U B01F 5/0281

- { characterized by the specific design of the jet injector}

## B01F 5/0287

- • { ~~the jet injector being of the RESS (explosive rapid expansion of supercritical solutions) or FIMS (fluid injection of molecular spray) type, i.e. the liquid is jetted in an environment (gas or liquid)~~ { *the jet injector being of the RESS (explosive rapid expansion of supercritical solutions) or FIMS (fluid injection of molecular spray) type, i.e. the liquid is jetted in an environment (gas or liquid)* } by nozzles, in conditions of significant pressure drop, with the possible generation of shock waves}

## B01F 17/00

Use of substances as emulsifying, wetting, dispersing or foam-producing agents {see for particular applications relevant classes, e.g. lubricant emulsions [C10M](#): fuel emulsions [C10L 1/32](#); detergents [C11D](#); colour and dye dispersions [C09](#); textile applications [D06](#); cosmetics [A61K](#); food [A23L 1/035](#); biocides [A01N](#); petrol winning [E21B](#); hydrometallurgy, metal liquid-liquid extraction [C22B](#); mixers [B01F 3/00](#); polymers mixing; waxes [C08](#); paper [D21H](#); ~~demulsification (anti foam)~~ *demulsification (anti foam)* [B01D 19/04](#)}

## NOTE

A compound is always classified in the last appropriate place

**Project: N/A (B01J)**

- U B01J 20/00** **Solid sorbent compositions or filter aid compositions; Sorbents for chromatography; Processes for preparing, regenerating or reactivating thereof( use of sorbent compositions in liquid separation [B01D 15/00](#) , use of filter aid compositions [B01D 37/02](#) ; use of sorbent compositions in gas separation [B01D 53/02](#) , [B01D 53/14](#) )**
- U B01J 20/22** **• comprising organic material**  
WARNING  
 Groups [B01J 20/223](#) and [B01J 20/226](#) are not complete, pending a reorganisation. See also [B01J 20/22](#)
- U B01J 20/223** **• • {containing metals, e.g. organo-metallic compounds, coordination complexes}**  
**B01J 20/226** **• • • {Coordination polymers, e.g. metal-organic frameworks [[MOF](#)], [zeolitic imidazolate frameworks \(ZIF\)](#)(~~MOF~~), [zeolitic imidazolate frameworks \(ZIF\)](#)( preparation of metal complexes containing carboxylic acid moieties [C07C 51/418](#) ; MOF's per se [C07F](#) )}**
- U B01J 29/00** **Catalysts comprising molecular sieves{(molecular sieves per se [C01B](#))}**  
NOTES  
 In this group, the following term is used with the meaning indicated:  
 - "zeolites" means:  
 (i) crystalline aluminosilicates with base-exchange and molecular sieve properties, having three dimensional, microporous lattice framework structure of tetrahedral oxide units;  
 (ii) compounds isomorphous to those of the former category, wherein the aluminium or silicon atoms in the framework are partly or wholly replaced by atoms of other elements, e.g. by gallium, germanium, phosphorus or boron.  
 If metals are introduced into the framework of the molecular sieve already in the synthesis stage, [B01J 29/86](#) to [B01J 29/89](#) take precedence.  
 Mixtures of molecular sieves are classified in [B01J 29/005](#) or [B01J 29/80](#) and receive indexing codes chosen from groups [B01J 29/03](#) to [B01J 29/89](#) to identify the individual constituents of these mixtures
- U B01J 29/82** **• Phosphates{( [B01J 29/005](#) takes precedence )}**  
**B01J 29/83** **• • Aluminophosphates ([APO compounds](#))(~~APO-compounds~~)**  
**U B01J 29/84** **• • Aluminophosphates containing other elements, e.g. metals, boron**  
**B01J 29/85** **• • • Silicoaluminophosphates ([SAPO compounds](#))(~~SAPO-compounds~~)**
- U B01J 31/00** **Catalysts comprising hydrides, coordination complexes or organic compounds(catalyst compositions used only in polymerisation reactions [C08](#);( catalytic antibodies [C12N 9/0002](#) ) )}**  
NOTES  
 1. Group [B01J 31/003](#) takes precedence over groups [B01J 31/02](#) to [B01J 31/24](#) (catalytic antibodies [C12N 9/0002](#) )  
 2. In this group, the following terms or expressions are used with the meanings indicated:  
 -"Organic compound" a compound in which carbon is bonded to (1)a second carbon; (2)at least one atom of hydrogen or halogen; or (3)nitrogen by a single or double bond; except cyanic acid (HOCN), cyanogen (NCCN), cyanamide (H<sub>2</sub>NCN), cyanogen halide (HalCN), hydrocyanic acid (HCN) isocyanic acid (HNCO) fulminic acid (HCNO)and metal carbides (MCCM) (catalysts comprising any of these exceptions or their salts [B01J 27/20](#) to [B01J 27/26](#)



.-"Organometallic compounds" includes all organic compounds wherein a metal or metalloid atom is bonded directly to a carbon fragment, the latter being formally anionic, no further neutral ligands being coordinated to the metal and the compound requiring no further cations for charge balance; e.g.  $M(1-CR_3)_n$  with  $M$ = main group metal,  $n$ = valency of metal and  $R$ = H or hydrocarbyl. (Compounds comprising anionic organonitrogen, organooxygen and organosulfur fragments, excluding carboxylates, with a metal bonded to these heteroatoms [B01J 31/02](#) to [B01J 31/0254](#); unsaturated carbon fragments in combination with transition metals [B01J 31/2282](#). -"Coordination complexes" includes any donor-acceptor compounds or complex ions comprising organic or inorganic, anionic or neutral Lewis basic ligands, attached to a Lewis acid central metal or metal ion through one or several complexing donor atoms with at least one lone-pair of electrons, e.g. N, O, S, P, to provide at least a Sigma-bond. Typically the maximum number of same or different ligands according to the coordination number, spatial requirements of the ligand and electronic configuration of the metal is bound in a predictable geometry. Complexes of neutral, cationic or anionic hydrocarbon ligands with delocalised charge and/or bonding site, e.g. Pd-olefin complexes or metallocenes, are also included (the following groups take precedence: simple hydrocarbyl metal compounds, e.g. of main group metal(loids) [B01J 31/12](#); oxoacid salts [B01J 31/04](#) to [B01J 31/10](#); other compounds comprising anionic organonitrogen, organooxygen and organosulfur fragments with a metal bonded to these heteroatoms [B01J 31/02](#) to [B01J 31/0254](#). -"Organometallic complexes" includes all coordination complexes comprising a M-C bond, e.g. metal carbonyls (complex cyanides such as  $M_4[Fe(CN)_6]$  [B01J 27/26](#)). Included are furthermore complexes which are not strictly organometallic per se, e.g. comprising only N, O, S and/or P coordinated ligands, but are described as involving, or known to involve, organometallic intermediates and/or transition states during use, e.g. Group 8-10 metal complexes for a variety of catalytic reactions or steps thereof, such as oxidative addition, e.g. of  $ArX$ , hydrogenation, carbonylation, epoxidation, etc. -"Organic complexes" includes all coordination complexes comprising organic ligands (groups [B01J 31/1608](#) to [B01J 31/1895](#) take precedence). -"Polymer" includes any macromolecular substance (typically  $M > 10000$  g/mol), which comprises repeating units made up of one or several kinds of atoms or groups of atoms, which are identically connected to one another. Oligomers, i.e. more than two identical repeating units connected to one another and typically  $500 < M < 10000$  g/mol, are grouped with the respective polymers (polymers per se [C08](#)).

3. In this group, if two or more aspects are of equal importance, these are each classified, e.g. two components in a catalyst system such as:

- support and pendant or otherwise immobilised coordination complex; or
- coordination complex and essential additive.

However, if two components, even if separately added, are described as forming, or known to form, a coordination complex, only the latter is classified, e.g. phosphine and Group 8-10 metal such as rhodium. The groups [B01J 31/26](#) to [B01J 31/38](#) are not to be used for the central metals in coordination complexes but rather for separately added further inorganic ingredients.

Each specifically disclosed alternative is separately classified, i.e. specifically disclosed by ways of worked examples, specific claims and/or explicit alternatives therein.

4. When classifying in [B01J 31/00](#), additional information for the catalysts is provided as follows:

- (4-1) the specifically disclosed intended uses are indexed in [B01J 2231/00](#);
- (4-2) general aspects of the complexes of group [B01J 31/16](#) and the specifically disclosed central metal(s) therein, as well as additional information regarding any special solvents used for any catalyst system of this group are indexed in [B01J 2531/00](#);
- (4-3) conceptual articles, e.g. reviews, are separately indexed in [B01J 2231/005](#) and [B01J 2531/001](#);

(4-4) additional information regarding the complexes or ligands classified in [B01J 31/16](#) to [B01J 31/24](#) and indexed in [B01J 2531/00](#) is indexed in [B01J 2540/00](#), e.g. non-coordinating substituents on the ligand periphery]

- U B01J 31/02                   • containing organic compounds or metal hydrides
- U B01J 31/0234               • • {Nitrogen-, phosphorus-, arsenic- or antimony-containing compounds}
- U B01J 31/0235               • • • {Nitrogen containing compounds}
- U B01J 31/0245               • • • • {being derivatives of carboxylic or carbonic acids}
- B01J 31/0247               • • • • • {Imides, amides or imidates ( $R-C=NR(OR)$ )} ( $R-C=NR(OR)$ )}
- B01J 31/0249               • • • • • {Ureas ( $R_2N-C(=O)-NR_2$ )} ( $R_2N-C(=O)-NR_2$ )}
- B01J 31/0251               • • • • • {Guanidides ( $R_2N-C(=NR)-NR_2$ )} ( $R_2N-C(=NR)-NR_2$ )}
- U B01J 31/0255               • • • {Phosphorus containing compounds}
- U B01J 31/0257               • • • • {Phosphorus acids or phosphorus acid esters}
- B01J 31/0258               • • • • • {Phosphoric acid mono-, di- or triesters ( $(RO)(R'O)2P=O$ )} (*Phosphoric acid mono-, di- or triesters ( $(RO)(R'O)2P=O$ )*, i.e. R = C, R' = C, H}
- B01J 31/0259               • • • • • {comprising phosphorous acid (-ester) groups ( $(RO)P(OR')2$ ) or the isomeric phosphonic acid (-ester) groups ( $R(R'O)2P=O$ )} (*comprising phosphorous acid (-ester) groups ( $(RO)P(OR')2$ ) or the isomeric phosphonic acid (-ester) groups ( $R(R'O)2P=O$ )*, i.e. R = C, R' = C, H}
- B01J 31/0261               • • • • • {comprising phosphonous acid (-ester) groups ( $RP(OR')2$ ) or the isomeric phosphinic acid (-ester) groups ( $R_2(R'O)P=O$ )} (*comprising phosphonous acid (-ester) groups ( $RP(OR')2$ ) or the isomeric phosphinic acid (-ester) groups ( $R_2(R'O)P=O$ )*, i.e. R = C, R' = C, H}
- B01J 31/0262               • • • • • {comprising phosphinous acid (-ester) groups ( $R_2P(OR')$ )} (*comprising phosphinous acid (-ester) groups ( $R_2P(OR')$ )* or the isomeric phosphine oxide groups ( $R_3P=O$ ), i.e. R = C, R' = C, H}
- B01J 31/04                   • • containing carboxylic acids or their salts ( [B01J 31/0277](#) to [B01J 31/0298](#) take precedence; multi-metal carboxylate complexes like Pd (II) acetate, i.e. Pd<sub>3</sub> (OAc)<sub>6</sub> or Cr(II)acetate, i.e. Cr<sub>2</sub>(OAc)<sub>4</sub> [B01J 31/2226](#) )}
- U B01J 31/16                   • containing coordination complexes
- B01J 31/1691               • • {Coordination polymers, e.g. metal-organic frameworks *[MOF](MOF)* preparation of metal complexes containing carboxylic acid moieties [C07C 51/418](#) ; MOF's per se [C07F](#) )}
- U B01J 31/18                   • • containing nitrogen, phosphorus, arsenic or antimony {as complexing atoms, e.g. in pyridine ligands, or in resonance therewith, e.g. in isocyanide ligands C=N-R or as complexed central atoms ( double metal cyanides [B01J 27/26](#) ; N-heterocyclic carbenes [B01J 31/2265](#) )}
- U B01J 31/1845               • • • {the ligands containing phosphorus ( phosphines [B01J 31/24](#) )}
- B01J 31/185                   • • • • {Phosphites ( $(RO)3P$ ), their isomeric phosphonates ( $R(RO)2P=O$ )} (*Phosphites ( $(RO)3P$ ), their isomeric phosphonates ( $R(RO)2P=O$ )* and RO-substitution derivatives thereof}
- B01J 31/1865               • • • • {Phosphonites ( $RP(OR)2$ ), their isomeric phosphinates ( $R_2(RO)P=O$ )} (*Phosphonites ( $RP(OR)2$ ), their isomeric phosphinates ( $R_2(RO)P=O$ )* and RO-substitution derivatives thereof}
- B01J 31/1875               • • • • {Phosphinites ( $R_2P(OR)$ ), their isomeric phosphine oxides ( $R_3P=O$ ) and RO-substitution derivatives thereof} ( $R_2P(OR)$ ), their isomeric phosphine oxides ( $R_3P=O$ ) and RO-substitution derivatives thereof}
- U B01J 31/22                   • • Organic complexes
- B01J 31/2265               • • • {Carbenes or carbynes, i.e. *(image)*} (*(image)*)}

U	B01J 31/24	<ul style="list-style-type: none"> <li>• • Phosphines{i.e. phosphorus bonded to only carbon atoms, or to both carbon and hydrogen atoms, including sp<sup>2</sup>-hybridised phosphorus compounds such as phosphabenzene, phosphole or anionic phospholide ligands( complexes with parent phosphine PH<sub>3</sub> <a href="#">B01J 31/1845</a> )}</li> </ul>
U	B01J 31/2404	<ul style="list-style-type: none"> <li>• • • {Cyclic ligands, including non-condensed polycyclic ligands, the phosphine-P atom being a ring member or a substituent on the ring}</li> </ul>
U	B01J 31/2419	<ul style="list-style-type: none"> <li>• • • • {comprising P as ring member}</li> </ul>
	B01J 31/2423	<ul style="list-style-type: none"> <li>• • • • • <del>N</del>={comprising aliphatic or saturated rings}}</li> </ul>
U	<b>B01J 37/00</b>	<b>Processes, in general, for preparing catalysts; Processes, in general, for activation of catalysts</b>
U	B01J 37/0009	<ul style="list-style-type: none"> <li>• {Use of binding agents; Moulding; Pressing; Powdering; Granulating; Addition of materials ameliorating the mechanical properties of the product catalyst}</li> </ul>
	B01J 37/0018	<ul style="list-style-type: none"> <li>• • {Addition of a binding agent or of material, later completely removed among others as result of heat treatment, leaching or washing, (e.g. forming of pores (e.g. forming of pores; protective layer, desintegrating by heat)); protective layer, desintegrating by heat}}</li> </ul>
U	<b>B01J 49/00</b>	<b>Regeneration or reactivation of ion-exchangers; Apparatus therefor( ion-exchange chromatography processes or apparatus <a href="#">B01D 15/08</a> )</b>
U	B01J 49/0056	<ul style="list-style-type: none"> <li>• {thermal regeneration}</li> </ul>
	B01J 49/006	<ul style="list-style-type: none"> <li>• • {of amphoteric ion-exchangers ("Sirotherm process") ("Sirotherm-process")}</li> </ul>
U	<b>B01J 2231/00</b>	<b>Catalytic reactions performed with catalysts classified in <a href="#">B01J 31/00</a></b>
		<b>NOTE</b>
		In this group indexing is done according to the specific catalytic reaction. In case of multiple catalytic activities only those are indexed which are specifically exemplified, i.e. by ways of worked examples, specific claims or explicit alternatives therein.
U	B01J 2231/10	<ul style="list-style-type: none"> <li>• Polymerisation reactions involving at least dual use catalysts, e.g. for both oligomerisation and polymerisation</li> </ul>
	B01J 2231/14	<ul style="list-style-type: none"> <li>• • <del>Other</del>(co) <del>Other</del> (co) polymerisation, e.g. of lactides, epoxides( "ROMP", i.e. ring-opening metathesis polymerisation <a href="#">B01J 2231/54</a> )</li> </ul>
U	B01J 2231/60	<ul style="list-style-type: none"> <li>• Reduction reactions, e.g. hydrogenation</li> </ul>
U	B01J 2231/64	<ul style="list-style-type: none"> <li>• • Reductions in general of organic substrates, e.g. hydride reductions or hydrogenations</li> </ul>
U	B01J 2231/641	<ul style="list-style-type: none"> <li>• • • Hydrogenation of organic substrates, i.e. H<sub>2</sub> or H-transfer hydrogenations, e.g. Fischer-Tropsch processes</li> </ul>
	B01J 2231/643	<ul style="list-style-type: none"> <li>• • • • of R<sub>2</sub>C=O or R<sub>2</sub>C=NR (R= C, H) (R= C, H)</li> </ul>
U	B01J 2231/70	<ul style="list-style-type: none"> <li>• Oxidation reactions, e.g. epoxidation, (di)hydroxylation, dehydrogenation and analogues</li> </ul>
U	B01J 2231/76	<ul style="list-style-type: none"> <li>• • Dehydrogenation( transfer-dehydrogenation of CH-XH <a href="#">B01J 2231/641</a> ; transfer-dehydrogenation of -CHRCHR- via C-H activation <a href="#">B01J 2231/46</a> )</li> </ul>
	B01J 2231/763	<ul style="list-style-type: none"> <li>• • • <del>mof</del>-CH-XH(X= O, NH/N, S) <del>mof</del>-CH-XH (X= O, NH/N, S) to -C=X or -C-X triple bond species</li> </ul>
U	<b>B01J 2523/00</b>	<b>Constitutive chemical elements of heterogeneous catalysts</b>
	B01J 2523/10	<ul style="list-style-type: none"> <li>• <del>of Group I(IA or IB)</del> of <del>Group I (IA or IB)</del> of the Periodic Table</li> </ul>
	B01J 2523/20	<ul style="list-style-type: none"> <li>• <del>of Group II(IIA or IIB)</del> of <del>Group II (IIA or IIB)</del> of the Periodic Table</li> </ul>
	B01J 2523/30	<ul style="list-style-type: none"> <li>• <del>of Group III(IIIA or IIIB)</del> of <del>Group III (IIIA or IIIB)</del> of the Periodic Table</li> </ul>
	B01J 2523/40	<ul style="list-style-type: none"> <li>• <del>of Group IV(IVA or IVB)</del> of <del>Group IV (IVA or IVB)</del> of the Periodic Table</li> </ul>

- B01J 2523/50 • ~~of Group V (VA or VB)~~ of *Group V (VA or VB)* of the Periodic Table
- B01J 2523/60 • ~~of Group VI (VIA or VIB)~~ of *Group VI (VIA or VIB)* of the Periodic Table

**B01J 2531/00****Additional information regarding catalytic systems classified in [B01J 31/00](#)**NOTE

In this group the term "Metals" refers to the central metal in the coordination complexes ( [B01J 31/16](#) to [B01J 31/24](#) ), as used for the respective catalytic reaction, excluding carboxylates (see [B01J 31/04](#) ) and other simple salts or organometallic compounds (see [B01J 31/12](#) ). As to components, only those metals or solvents are indexed which are explicitly mentioned in the claims or the worked examples. As to compositional aspects, only those are provided for in the scheme below and are intended to be indexed, which provide additional information regarding the complexes and/or ligands classified in [B01J 31/16](#) to [B01J 31/24](#); indexing codes [B01J 2531/0286](#) to [B01J 2531/0297](#) are only used if these aspects are described as essential. Indexing codes [B01J 2531/0213](#) to [B01J 2531/0277](#) characterise the complexes on the basis of bond-type (linkage-type) thereby specifying the structural geometry of the complexes, while classification entries [B01J 31/16](#) to ~~31/24~~ [B01J 31/24](#) are purely compositional subdivisions. The individual metals, the compositional aspects of complexes used and the solvents are indexed for each explicit alternative, according to the guideline above

**B01J 2531/001**

- General concepts, e.g. reviews, relating to catalyst systems and methods of making them, the concept being defined by a common material or method/theory *Note: When indexing in this group, only the focus is indexed in [B01J 2531/004](#) to [B01J 2531/007](#) and only if groups with closely related members are concerned, e.g. N-heterocyclic carbenes ( [B01J 2531/004](#) ), Pd-complexes ( [B01J 2531/005](#) ), added halide ( [B01J 2531/007](#) ). Otherwise the main code [B01J 2531/002](#) is used.*

NOTE

*When indexing in this group, only the focus is indexed in [B01J 2531/004](#) to [B01J 2531/007](#) and only if groups with closely related members are concerned, e.g. N-heterocyclic carbenes ( [B01J 2531/004](#) ), Pd-complexes ( [B01J 2531/005](#) ), added halide ( [B01J 2531/007](#) ). Otherwise the main code [B01J 2531/002](#) is used.*

**B01J 2531/10**

- Complexes comprising metals of Group I (*IA or IB*) as the central metal (~~IA or IB~~) as the central metal

**B01J 2531/20**

- Complexes comprising metals of Group II (*IIA or IIB*) as the central metal (~~IIA or IIB~~) as the central metal

**B01J 2531/30**

- Complexes comprising metals of Group III (*IIIA or IIIB*) as the central metal (~~IIIA or IIIB~~) as the central metal

**B01J 2531/40**

- Complexes comprising metals of Group IV (*IVA or IVB*) as the central metal (~~IVA or IVB~~) as the central metal

**B01J 2531/50**

- Complexes comprising metals of Group V (*VA or VB*) as the central metal (~~VA or VB~~) as the central metal

**B01J 2531/60**

- Complexes comprising metals of Group VI (*VIA or VIB*) as the central metal (~~VIA or VIB~~) as the central metal

**U B01J 2540/00****Compositional aspects of coordination complexes or ligands in catalyst systems****U B01J 2540/40**

- Non-coordinating groups comprising nitrogen

**B01J 2540/44**

- being derivatives of carboxylic or carbonic acids, e.g. amide (*RC(=O)-NR<sub>2</sub>*, *RC(=O)-NR-C(=O)R*), nitrile, urea (*R<sub>2</sub>N-C(=O)-NR<sub>2</sub>*), guanidino (*R<sub>2</sub>N-C(=NR)-NR<sub>2</sub>*) groups (*RC(=O)-NR<sub>2</sub>*, *RC(=O)-NR-C(=O)R*), nitrile, urea (*R<sub>2</sub>N-C(=O)-NR<sub>2</sub>*), guanidino (*R<sub>2</sub>N-C(=NR)-NR<sub>2</sub>*) groups

- B01J 2540/442
  - • • Amide groups or imidato groups  $(R-C=NR(OR))(R-C=NR(OR))$
- U B01J 2540/50
  - Non-coordinating groups comprising phosphorus
- U B01J 2540/52
  - Phosphorus acid or phosphorus acid ester groups
- B01J 2540/522
  - • • being phosphoric acid mono-, di- or triester groups  $((RO)(R'O)2P=O)$  being phosphoric acid mono-, di- or triester groups  $((RO)(R'O)2P=O)$ , i.e. R = C, R' = C, H
- B01J 2540/525
  - • • being phosphorous acid (-ester) groups  $((RO)P(OR')2)$  or the isomeric phosphonic acid (-ester) groups  $(R(R'O)2P=O)$  being phosphorous acid (-ester) groups  $((RO)P(OR')2)$  or the isomeric phosphonic acid (-ester) groups  $(R(R'O)2P=O)$ , i.e. R = C, R' = C, H
- B01J 2540/527
  - • • being phosphonous acid (-ester) groups  $(RP(OR')2)$  or the isomeric phosphinic acid (-ester) groups  $(R2(R'O)P=O)$  being phosphonous acid (-ester) groups  $(RP(OR')2)$  or the isomeric phosphinic acid (-ester) groups  $(R2(R'O)P=O)$ , i.e. R = C, R' = C, H

## Project: N/A (B02C)

- U B02C 19/00
  - B02C 19/0012
    - Other disintegrating devices or methods (for grain [B02C 9/00](#))
    - {Devices for disintegrating materials by collision of these materials against a breaking surface or breaking body and/or by friction between the material particles *(also for grain)*~~*(also for grain)*~~}

## Project: N/A (B04C)

B04C 3/00

**Apparatus in which the axial direction of the vortex {(flow following a screw-thread type line)Apparatus in which the axial direction of the vortex {(flow following a screw-thread type line)}** remains unchanged {Also devices in which one of the two discharge ducts returns centrally through the vortex chamber, a reverse-flow vortex being prevented by bulkheads in the central discharge duct (combined with other devices [B04C 9/00](#))}

## Project: N/A (B05B)

- U B05B 1/00
  - Nozzles, spray heads or other outlets, with or without auxiliary devices such as valves, heating means( [B05B 3/00](#) , [B05B 5/00](#) , [B05B 7/00](#) take precedence; { nozzles for baths with water or gas jets [A61H 33/00](#) , e.g. [A61H 33/6063](#) , [A61H 33/6021](#) , [A61H 33/026](#) or [A61H 33/027](#) ; Nozzles specially adapted for fire-extinguishing [A62C 31/02](#) ; Nozzles for generating high velocity abrasive fluid jets [B24C 5/04](#) } ; nozzles for jet-ink printing mechanisms [B41J 2/135](#) ; { Nozzles for filling containers [B65B 39/00](#) ; } nozzles for liquid-dispensing, e.g. in vehicle service stations [B67D 7/42](#) )
- U B05B 1/30
  - designed to control volume of flow, e.g. with adjustable passages
- U B05B 1/3033
  - • {the control being effected by relative coaxial longitudinal movement of the controlling element and the spray head( [B05B 1/3026](#) takes precedence )}
- U B05B 1/304
  - • • {the controlling element being a lift valve}
- U B05B 1/3046
  - • • • {the valve element, e.g. a needle, co-operating with a valve seat located downstream of the valve element and its actuating means, generally in the proximity of the outlet orifice( [B05B 1/308](#) takes precedence )}
- B05B 1/306
  - • • • • {the actuating means being a fluid}{~~WARNING Not complete, see B05B 1/3046~~}

**WARNING***Not complete, see [B05B 1/3046](#)*



U B05B 3/00	<b>Spraying or sprinkling apparatus with moving outlet elements or moving deflecting elements;{Spraying or sprinkling heads with rotating elements located upstream the outlet}</b>
B05B 3/001	<ul style="list-style-type: none"> <li>• {incorporating means for heating or cooling, e.g. the material to be sprayed}</li> </ul> <p><u>WARNING</u>  <del>Not complete pending reclassification; see also B05B 3/00 and subgroups</del>  <i>Not complete pending reclassification; see also B05B 3/00 and subgroups</i></p>
U B05B 5/00	<b>Electrostatic spraying apparatus; Spraying apparatus with means for charging the spray electrically; Apparatus for spraying liquids or other fluent materials by other electric means</b>
B05B 5/001	<ul style="list-style-type: none"> <li>• {incorporating means for heating or cooling, e.g. the material to be sprayed}</li> </ul> <p><u>WARNING</u>  <del>Not complete pending reclassification; see also B05B 5/00 and subgroups</del>  <i>Not complete pending reclassification; see also B05B 5/00 and subgroups</i></p>
U B05B 5/08	<ul style="list-style-type: none"> <li>• Plant for applying liquids or other fluent materials to objects</li> </ul>
U B05B 5/082	<ul style="list-style-type: none"> <li>• • {characterised by means for supporting, holding or conveying the objects}</li> </ul>
B05B 5/084	<ul style="list-style-type: none"> <li>• • • {the objects lying on, or being supported above conveying means, e.g. conveyor belts}<del>{WARNING: not complete, see B05B 5/08 and subgroups}</del></li> </ul> <p><u>WARNING</u>  <i>not complete, see B05B 5/08 and subgroups</i></p>
U B05B 7/00	<b>Spraying apparatus for discharge of liquids or other fluent materials from two or more sources, e.g. of liquid and air, of powder and gas( <a href="#">B05B 3/00</a> , <a href="#">B05B 5/00</a> { <a href="#">B05B 11/06</a> } take precedence; outlets not specially modified for two media <a href="#">B05B 1/00</a> )</b>
U B05B 7/02	<ul style="list-style-type: none"> <li>• Spray pistols; Apparatus for discharge( <a href="#">B05B 7/14</a> , <a href="#">B05B 7/16</a> , <a href="#">B05B 7/24</a> take precedence )</li> </ul>
U B05B 7/12	<ul style="list-style-type: none"> <li>• • designed to control volume of flow, e.g. with adjustable passages</li> </ul>
U B05B 7/1254	<ul style="list-style-type: none"> <li>• • • {the controlling means being fluid actuated}</li> </ul>
B05B 7/1263	<ul style="list-style-type: none"> <li>• • • • {pneumatically actuated}<del>{WARNING Not complete, see B05B 7/1254}</del></li> </ul> <p><u>WARNING</u>  <i>Not complete, see B05B 7/1254</i></p>
B05B 7/1272	<ul style="list-style-type: none"> <li>• • • • {actuated by gas involved in spraying, i.e. exiting the nozzle, e.g. as a spraying or jet shaping gas}<del>{WARNING Not complete, see B05B 7/1254}</del></li> </ul> <p><u>WARNING</u>  <i>Not complete, see B05B 7/1254</i></p>
B05B 7/1281	<ul style="list-style-type: none"> <li>• • • • • {Serial arrangement, i.e. a single gas stream acting on the controlling means first and flowing downstream thereof to the nozzle}<del>{WARNING Not complete, see B05B 7/1254}</del></li> </ul> <p><u>WARNING</u>  <i>Not complete, see B05B 7/1254</i></p>



U	B05B 11/00	Single-unit, i.e. unitary, hand-held apparatus{comprising a container and a discharge nozzle attached thereto}, in which flow of liquid or other fluent material is produced by{the muscular energy of}the operator at the moment of use{or by an equivalent manipulator independent from the apparatus( apparatus with an external source or the possibility of permanent accumulation of pressure for discharging the liquid or fluid material <a href="#">B05B 7/00</a> , <a href="#">B05B 9/00</a> )}
	B05B 11/0002	<ul style="list-style-type: none"> <li>• {incorporating means for heating or cooling e.g. the material to be sprayed}</li> </ul> <p><u>WARNING</u>  Not complete pending reclassification; see also <a href="#">B05B 11/00</a> and subgroups</p> <p><i>Not complete pending reclassification; see also <a href="#">B05B 11/00</a> and subgroups</i></p>
U	B05B 11/30	<ul style="list-style-type: none"> <li>• the flow being effected by a pump</li> </ul>
U	B05B 11/3001	<ul style="list-style-type: none"> <li>• {Piston pumps( <a href="#">B05B 11/3087</a> , <a href="#">B05B 11/3088</a> , <a href="#">B05B 11/309</a> take precedence )}</li> </ul>
	B05B 11/3021	<ul style="list-style-type: none"> <li>• • {having an outlet valve which is a gate valve( <a href="#">B05B 11/3023</a> , <a href="#">B05B 11/3038</a> take precedence )}{<u>WARNING</u> Not complete, see <a href="#">B05B 11/3001</a> and sub-groups }</li> </ul> <p><u>WARNING</u>  Not complete, see <a href="#">B05B 11/3001</a> and sub-groups</p>
U	B05B 11/3042	<ul style="list-style-type: none"> <li>• {Components or details}</li> </ul>
U	B05B 11/3043	<ul style="list-style-type: none"> <li>• • {Sealing or attachment arrangements between pump and container( Sealing arrangements around pump actuating stem <a href="#">B05B 11/305</a> )}</li> </ul>
U	B05B 11/3046	<ul style="list-style-type: none"> <li>• • • {the pump chamber being arranged substantially coaxially to the neck of the container( <a href="#">B05B 11/3049</a> takes precedence )}</li> </ul>
	B05B 11/3047	<ul style="list-style-type: none"> <li>• • • • {the pump being preassembled as an independent unit before being mounted on the container}{<u>WARNING</u> Not complete, see <a href="#">B05B 11/3042</a> , <a href="#">B05B 11/3043</a> and subgroups }</li> </ul> <p><u>WARNING</u>  Not complete, see <a href="#">B05B 11/3042</a> , <a href="#">B05B 11/3043</a> and subgroups</p>
U	B05B 11/3052	<ul style="list-style-type: none"> <li>• • {Actuation means( locking means therefor <a href="#">B05B 11/3059</a> ; <a href="#">B05B 11/309</a> takes precedence )}</li> </ul>
	B05B 11/3056	<ul style="list-style-type: none"> <li>• • • {comprising rotatable or articulated levers( lever actuated piston pumps <a href="#">B05B 11/3009</a> , lever actuated pumps with deformable chamber <a href="#">B05B 11/3029</a> ; <a href="#">B05B 11/3053</a> take precedence )}{<u>WARNING</u>Not complete, see <a href="#">B05B 11/3052</a> }</li> </ul> <p><u>WARNING</u>  Not complete, see <a href="#">B05B 11/3052</a></p>
U	B05B 11/3066	<ul style="list-style-type: none"> <li>• • {Pump inlet valves( <a href="#">B05B 11/3018</a> , <a href="#">B05B 11/3019</a> , <a href="#">B05B 11/3064</a> take precedence )}</li> </ul>
U	B05B 11/3067	<ul style="list-style-type: none"> <li>• • • {actuated by pressure}</li> </ul>
	B05B 11/3069	<ul style="list-style-type: none"> <li>• • • • {the valve being made of a resiliently deformable material or being urged in a closed position by a spring}{<u>WARNING</u>Not complete, see <a href="#">B05B 11/3067</a> }</li> </ul> <p><u>WARNING</u>  Not complete, see <a href="#">B05B 11/3067</a></p>

U	B05B 12/00	Arrangements or special adaptations of delivery controlling means in spraying systems(controlling in general <a href="#">G05</a> ; valves in spray head or nozzles <a href="#">B05B 1/30</a> and sub-groups )}
U	B05B 12/004	<ul style="list-style-type: none"> <li>• {comprising sensors for monitoring the delivery, e.g. by displaying the sensed value or generating an alarm( <a href="#">B05B 12/08</a> takes precedence; Registering or indicating the condition or the working of machines or other apparatus in general <a href="#">G07C 3/00</a> )}</li> </ul>
	B05B 12/006	<ul style="list-style-type: none"> <li>• {Pressure or flow rate sensors}]<del>{WARNING not complete, see B05B 12/004 }</del></li> </ul> <p><u>WARNING</u> not complete, see <a href="#">B05B 12/004</a></p>
	B05B 12/008	<ul style="list-style-type: none"> <li>• {integrated in or attached to a discharge apparatus, e.g. a spray gun}<del>{WARNING not complete, see B05B 12/004 }</del></li> </ul> <p><u>WARNING</u> not complete, see <a href="#">B05B 12/004</a></p>
U	B05B 12/08	<ul style="list-style-type: none"> <li>• responsive to condition of liquid or other fluent material discharged, of ambient medium or of target{; responsive to condition of spray device or of supply means, e.g. pipes, pumps, their drive}</li> </ul>
	B05B 12/081	<ul style="list-style-type: none"> <li>• {responsive to the weight of a reservoir or container for liquid or other fluent material; responsive to level or volume of liquid or other fluent material in a reservoir or container}</li> </ul> <p><u>WARNING</u> <del>Not complete pending reclassification; see also B05B 12/08 and subgroups</del></p> <p><u>Not complete pending reclassification; see also <a href="#">B05B 12/08</a> and subgroups</u></p>
	B05B 12/082	<ul style="list-style-type: none"> <li>• {responsive to a condition of the discharged jet or spray, e.g. to jet shape, spray pattern or droplet size}[1008]</li> </ul> <p><u>WARNING</u> <del>not complete, see B05B 12/08 , B05B 12/12</del></p> <p><u>not complete, see <a href="#">B05B 12/08</a> , <a href="#">B05B 12/12</a></u></p>
	B05B 12/084	<ul style="list-style-type: none"> <li>• {responsive to condition of liquid or other fluent material already sprayed on the target, e.g. coating thickness, weight or pattern}<del>{WARNING not complete, see B05B 12/08 , B05B 12/12 }</del></li> </ul> <p><u>WARNING</u> not complete, see <a href="#">B05B 12/08</a> , <a href="#">B05B 12/12</a></p>
U	B05B 12/12	<ul style="list-style-type: none"> <li>• responsive to conditions of ambient medium or target, e.g. humidity, temperature{position or movement of the target relative to the spray apparatus( <a href="#">B05B 12/082</a> , <a href="#">B05B 12/084</a> take precedence )}</li> </ul>
	B05B 12/124	<ul style="list-style-type: none"> <li>• {responsive to distance between spray apparatus and target}<del>{WARNING not complete, see B05B 12/12 }</del></li> </ul> <p><u>WARNING</u> not complete, see <a href="#">B05B 12/12</a></p>
	B05B 12/126	<ul style="list-style-type: none"> <li>• {responsive to target velocity, e.g. to relative velocity between spray apparatus and target( <a href="#">B05B 9/06</a> takes precedence )}<del>{WARNING not complete, see B05B 12/12 }</del></li> </ul> <p><u>WARNING</u> not complete, see <a href="#">B05B 12/12</a></p>

- U B05B 12/14
- for supplying a selected one of a plurality of liquids or other fluent materials{or several in selected proportions}to a{spray apparatus, e.g. to a}single spray outlet
- B05B 12/1418
- {for supplying several liquids or other fluent materials in selected proportions to a single spray outlet( Controlling ratio of two or more flows of fluid [G05D 11/02](#) )}{~~WARNING not complete, see B05B 12/14~~}
- WARNING  
not complete, see also [B05B 12/14](#)
- B05B 12/1445
- • {pumping means for the liquids or other fluent materials being mechanically linked, e.g. master and slave pumps}{~~WARNING not complete, see B05B 7/32 , B05B 12/14~~}
- WARNING  
not complete, see [B05B 7/32](#) , [B05B 12/14](#)
- B05B 12/1454
- {separate units comprising both a material container and a spray device permanently connected thereto being removably attached to a part of the spray apparatus, e.g. to a robot arm}{~~WARNING: not complete, see B05B 12/14~~}
- WARNING  
not complete, see [B05B 12/14](#)

## Project: N/A (B05C)

## B05C

**APPARATUS FOR APPLYING LIQUIDS OR OTHER FLUENT MATERIALS TO SURFACES, IN GENERAL** (spraying apparatus, atomising apparatus, nozzles [B05B](#); plant for applying liquids or other fluent materials to objects by electrostatic spraying [B05B 5/08](#); processes for applying liquids or other fluent materials to surfaces [B05D](#); { coating of foodstuffs [A23P 1/084](#), [A23P 1/085](#), of shaped or preshaped ceramic articles [B28B 11/04](#)})

NOTES

This subclass covers apparatus or hand tools, in general, for applying liquids or other fluent materials to a surface or a part thereof, by any mechanical or physical method, in particular apparatus for obtaining a uniform distribution of liquids or other fluent materials on a surface.

Attention is drawn to the Note following the title of class [B05](#).

WARNING

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

[B05C 5/04](#) covered by [B05C5/00A](#)[B05C 5/001](#) , [B05C11/10H](#)[B05C 11/1042](#)

- U B05C 5/00
- Apparatus in which liquid or other fluent material is projected, poured or allowed to flow on to the surface of the work ([B05C 7/00](#) takes precedence; essentially involving spraying or electrostatic projection [B05B](#))**
- U B05C 5/02
- {the liquid or other fluent material being discharged through an outlet orifice by pressure, e.g.} from an outlet device in contact or almost in contact, with the work
- U B05C 5/0225
- • {characterised by flow controlling means, e.g. valves, located proximate the outlet ([B05C 5/0258](#), [B05C 5/0275](#) take precedence; supply valves upstream the coating head [B05C 11/1036](#))}

- B05C 5/0229      • • • { the valve being a gate valve or a sliding valve} ~~{ WARNING Not complete, see B05C 5/0225 }~~
- WARNING  
Not complete, see [B05C 5/0225](#)
- B05C 5/0233      • • • { rotating valve, e.g. rotating perforated cylinder} ~~{ WARNING Not complete, see B05C 5/0225 }~~
- WARNING  
Not complete, see [B05C 5/0225](#)
- B05C 5/0237      • • • { Fluid actuated valves} ~~{ WARNING Not complete, see B05C 5/0225 }~~
- WARNING  
Not complete, see [B05C 5/0225](#)

**Project: N/A (B05D)**

- U    B05D 1/00      **Processes for applying liquids or other fluent materials( [B05D 5/00](#) , [B05D 7/00](#) take precedence )**
- WARNING  
Groups [B05D 1/60](#) to [B05D 1/62](#) do not correspond to former or current IPC groups. Concordance CPC : IPC for those groups is as follows - [B05D 1/60](#) to [B05D 1/62](#) : [B05D 1/00](#) , [B05D 7/00](#)
- U    B05D 1/18      • performed by dipping
- U    B05D 1/20      • • substances to be applied floating on a fluid
- B05D 1/202      • • • {Langmuir Blodgett films ([LB films](#))}~~{(LB-films)}~~
- B05D 2258/00      Small objects ([e.g. screws](#))**~~(e.g. screws)~~

**Project: N/A (B08B)**

- B08B      CLEANING IN GENERAL; PREVENTION OF FOULING IN GENERAL**(brushes [A46](#); devices for domestic or like cleaning [A47L](#); { cleaning golf-clubs or golf accessories [A63B 57/0087](#) ; cleaning grips of bats on rackets [A63B 59/0062](#) } ; separation of particles from liquids or gases [B01D](#); separation of solids [B03](#), [B07](#); spraying or applying liquids or other fluent materials to surfaces in general [B05](#); cleaning devices for conveyers [B65G 45/10](#) ; concurrent cleaning, filling and closing of bottles [B67C 7/00](#) ; inhibiting corrosion or incrustation in general [C23](#); cleaning streets, permanent ways, beaches or land [E01H](#); parts, details or accessories of swimming or splash baths or pools, specially adapted for cleaning [E04H 4/16](#) ; preventing or removing electrostatic charges [H05F](#) )
- NOTE  
This subclass covers only inventions relating to cleaning which are usually classified according to one (or more) of the aspects mentioned below if they are not fully classifiable in a subclass a subclass providing for any of the following aspects: the articles cleaned, e.g. bed-pans, urinal or other sanitary devices for bed-ridden persons [A61G 9/02](#) , filters, semi-permeable membranes [B01D](#), castings and moulds [B22D 29/00](#) , vehicles [B60S](#), coke ovens [C10B 43/00](#) , building forms [E04G](#), boilers [F22](#), combustion apparatus [F23](#), furnaces [F27](#);the general nature of the cleaning, e.g. preparing for sugar manufacture [A23N](#), domestic cleaning [A47L](#), treatment of textiles [D06](#), laundry [D06F](#), air-conditioning [F24F](#); the particular operation performed, e.g. filtering [B01D](#), separating of solids [B03](#), [B07](#), sand-blasting [B24C](#);the particular apparatus or device, e.g. brushes [A46B](#), mops [A47L](#), centrifuges [B04](#), hand tools [B25](#) { devices for cleaning paint-applying hand tools after use [B44D3/00D](#)

[B44D 3/006](#)}; the substance cleaned, e.g. metals [B21C](#), [C23](#), water [C02](#), glass [C03B](#), leather [C14B](#), textile fibres [D01](#); the substance removed (or prevented from depositing or forming) e.g. { removing paint [B44D 3/00](#) , e.g. } implements or apparatus for removing dry paint from surfaces [B44D 3/16](#) ; chemical paint-removers [C09D 9/00](#) ; preventing rust [C23F](#); the substance used, e.g. macromolecular compounds or compositions [C08](#), anti-icing materials [C09K](#), detergents [C11D](#); the operation in connection with which cleaning is done, e.g. metal rolling [B21B](#), metal boring [B23B](#), soldering [B23K](#), textile fabrication [D01G](#), H, [D03J](#), [D04B](#); the surroundings of a surface to be cleaned or kept clean, e.g. water in a boiler [C02F](#), air in a room [F24F](#).

## Project: N/A (B21)

B21 - ~~B32~~B33

### Shaping

## Project: N/A (B21C)

U B21C 37/00

Manufacture of metal sheets, bars, wire, tubes or like semi-manufactured products, not otherwise provided for (by rolling [B21B](#); by working or processing semi-finished sheet metal, profiles, tubes, or wire [B21D](#) or [B21F](#); by casting [B22](#); by material-removing machine tools [B23](#); by welding, e.g. cladding or plating [B23K](#); by grinding or polishing [B24](#); by electroforming [C25D 1/00](#); by drawing or extruding, see the relevant groups); Manufacture of tubes of special shape

U B21C 37/06

• of tubes or metal hoses; Combined procedures for making tubes, e.g. for making multi-wall tubes (bending sheets for making tubes [B21D 5/00](#); seaming by folding [B21D 39/02](#))

U B21C 37/10

• • Making tubes with riveted seams {or with non-welded and non-soldered seams}

B21C 37/102

• • • {of coated strip material (*making multi-wall tubes*)}{~~making multi-wall tubes~~}

## Project: N/A (B23B)

B23B 27/00

Tools for turning or boring machines (for drilling machines [B23B 51/00](#)); Tools of a similar kind in general; Accessories therefor {~~Note: all subgroups except B23B 27/12 relate to tools with a shank~~}

### NOTE

*all subgroups except [B23B 27/12](#) relate to tools with a shank*

U B23B 31/00

Chucks {(allowing axial oscillation of percussion tool bits [B25D 17/08](#))}; Expansion mandrels; Adaptations thereof for remote control (faceplates [B23Q 1/50](#); devices for securing work or tools to spindles in general [B23Q 3/12](#); rotary devices holding by magnetic and/or electrical force acting directly on work [B23Q 3/152](#))

U B23B 31/02

• Chucks

B23B 31/10

• • characterised by the retaining or gripping devices or their immediate operating means

### NOTE

Group [B23B 31/12](#) takes precedence over groups { ~~B23B31/10B~~ [B23B 31/101](#), ~~B23B31/10G~~[B23B 31/102](#),} [B23B 31/103](#) to [B23B 31/117](#)

U B23B 2222/00

Materials of tools or workpieces composed of metals, alloys or metal matrices

B23B 2222/36

• Nickel chrome alloys, e.g. Inconel~~&reg~~®;

B23B 2222/41

- Nickel steel alloys, e.g. invar~~&reg~~;

**Project: N/A (B23C)**

U B23C 1/00

**Milling machines not designed for particular work or special operations**

B23C 1/14

- *with rotary work-carrying table* (work tables for machine tools in general [B23Q 1/00](#))

**Project: N/A (B23Q)**

U B23Q 3/00

Devices holding, supporting, or positioning work or tools, of a kind normally removable from the machine (work-tables or other parts, e.g. faceplates, normally not incorporating means for securing work [B23Q 1/00](#); automatic position control [B23Q 15/00](#); rotary tool heads for turning-machines [B23B 3/24](#), [B23B 3/26](#); non-driven tool holders [B23B 29/00](#); general features of turrets [B23B 29/24](#); tools or bench devices for fastening, connecting, disengaging or holding [B25B](#))

U B23Q 3/155

- Arrangements for automatic insertion or removal of tools, {e.g. combined with manual handling ([B23Q 7/046](#) takes precedence)}

U B23Q 3/1552

- {parts of devices for automatically inserting or removing tools}

B23Q 3/15546

- {Devices for recognizing tools in a storage device (*coding devices*)}~~{coding devices}~~

U B23Q 11/00

Accessories fitted to machine tools for keeping tools or parts of the machine in good working condition or for cooling work {(accessories specially designed for sawing machines or sawing devices [B23D 59/00](#)); Safety devices specially combined with or arranged in, or specially adapted for use in connection with, machine tools (in respect of boring or drilling machines [B23B 47/32](#) takes precedence; safety devices in general [F16P](#))}

U B23Q 11/10

- Arrangements for cooling or lubricating tools or work (incorporated in tools, see the relevant subclass for the tool, { e.g. [B23B 27/10](#), [B23B 51/06](#), [B23C 5/28](#), [B23D 77/006](#); for circular saw blades [B23D 59/02](#), for cooling grinding surfaces [B24B 55/02](#)})

B23Q 11/1076

- { with a cutting liquid nozzle specially adaptable to different kinds of machining operations}

**WARNING**

~~Subgroup B23Q 11/1076 is not complete, due to a reorganisation in progress; see also B23Q 11/10~~

*Subgroup B23Q 11/1076 is not complete, due to a reorganisation in progress; see also B23Q 11/10*

U B23Q 11/12

- Arrangements for cooling or lubricating parts of the machine ([B23Q 11/14](#) takes precedence; { movable work or tool supports using fluid bearings or fluid cushion supports [B23Q 1/38](#); cooling or lubricating means used in the working area [B23Q 11/10](#)})

B23Q 11/121

- { with lubricating effect for reducing friction ([F16C 33/66](#) and [F16H 57/04](#) take precedence)}

**WARNING**

~~Subgroups B23Q 11/121 – B23Q 11/125 are not complete, due to a reorganisation in progress; see also B23Q 11/12~~

*Subgroups B23Q 11/121 - B23Q 11/125 are not complete, due to a reorganisation in progress; see also B23Q 11/12*



B23Q 11/126

- { for cooling only}

WARNING

~~Subgroups B23Q 11/121 - B23Q 11/128 are not complete, due to a reorganisation in progress; see also B23Q 11/12~~

*Subgroups B23Q 11/121 - B23Q 11/128 are not complete, due to a reorganisation in progress; see also B23Q 11/12*

B23Q 11/14

- Methods or arrangements for maintaining a constant temperature in parts of machine tools

WARNING

~~Subgroups B23Q 11/141 - B23Q 11/148 are not complete, due to a reorganisation in progress; see also B23Q 11/14~~

*Subgroups B23Q 11/141 - B23Q 11/148 are not complete, due to a reorganisation in progress; see also B23Q 11/14*

**Project: N/A (B25J)**

B25J

**MANIPULATORS; CHAMBERS PROVIDED WITH MANIPULATION DEVICES**{ manipulators specially adapted for use in surgery [A61B 19/22](#) ; manipulators used in cleaning hollow articles [B08B 9/04](#) } ; manipulators associated with rolling mills [B21B 39/20](#) ; manipulators associated with forging machines [B21J 13/10](#) ; { manipulators associated with picking-up and placing mechanisms [B23P 19/007](#) } ; means for holding wheels or parts thereof [B60B 30/00](#) ; { vehicles with ground-engaging propulsion means, e.g. walking members [B62D 57/02](#) , [B62D 57/032](#) ; devices for picking-up and depositing articles or materials between conveyers [B65G 47/90](#) , [B65G 47/91](#) ; manipulators with gripping or holding means for transferring packages [B65H 67/065](#) } ; cranes [B66C](#) ; { manipulators used in the protection or supervision of pipe-line installations [F17D 5/00](#) ; walking equipment adapted for nuclear steam-generators [F22B 37/006](#) } ; manipulators specially adapted for, or associated with, nuclear reactors [G21C](#) ; { apparatus used for handling wafers during manufacture or treatment of semiconductor [H01L 21/68](#) }

NOTE

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

- "manipulator" covers handling tools, devices, or machines having a gripping or work head capable of bodily movement in space and of change of orientation, such bodily movement and change of orientation being controlled, at will, by means remote from the head.

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:

<a href="#">B25J 9/18</a>	covered by	<a href="#">B25J 9/16</a>
<a href="#">B25J 9/22</a>	" "	<del><a href="#">B25J 9/16P</a></del> <a href="#">B25J 9/1656</a>
<a href="#">G05B 19/42</a>		

**Project: N/A (B28B)**

- U B28B 11/00** Apparatus or processes for treating or working the shaped{or preshaped}articles( specially adapted for tubular articles [B28B 21/92](#) ; decoration or surface treatment in general [B05](#) , [B44](#) ; compacting concrete in situ in connection with building [E04G 21/06](#) ; drying [F26](#) )
- B28B 11/18 • for removing burr ~~{{(-N: combined with the mould B28B 7/0058~~ combined with the mould [B28B 7/0058](#) )}}

**Project: N/A (B29C)**

- U B29C 33/00** Moulds or cores; Details thereof or accessories therefor
- U B29C 33/30** • Mounting, exchanging or centering{( moulds, mould parts or cores; [B29C 33/485](#) takes precedence )}
- B29C 33/301 • • ~~{Modular mould systems(MMS)}~~ [Modular mould systems \[MMS\]](#), i.e. moulds built up by stacking mould elements, e.g. plates, blocks, rods( [B29C 33/0088](#) takes precedence )}
- U B29C 47/00** Extrusion moulding, i.e. expressing the moulding material through a die or nozzle which imparts the desired form; Apparatus therefor( extrusion blow-moulding [B29C 49/04](#) ; extrusion presses in general [B30B 11/22](#) )
- U B29C 47/08** • Component parts, details or accessories; Auxiliary operations
- B29C 47/92 • • Measuring, controlling or regulating

NOTE~~[C12.04]~~

When classifying in group [B29C 47/92](#) it is desirable to add the indexing codes of [B29C 2947/00](#) relating to measuring, controlling or regulating in extrusion moulding

- U B29C 65/00** Joining{or sealing}of preformed parts,{e.g. welding of plastics materials}; Apparatus therefor({ general aspects of processes or apparatus for joining preformed parts [B29C 66/00](#) ; using porous material formed by internal pressure generated therein for joining preformed parts [B29C 44/1228](#) , [B29C 44/326](#) ; } for making boxes, cartons, envelopes or bags [B31B](#); for sealing or securing package folds or closures [B65B 51/00](#) ; joining constructional elements in general [F16B](#); splicing of light guides [G02B 6/255](#) )

WARNING

Groups [B29C 65/00](#) to [B29C 65/70](#) are not complete, mainly for documents published before the year 1995, pending reclassification; see also [B29C 65/74](#) and its subgroups

- B29C 65/48
- using adhesives{, i.e. using supplementary joining material} (heat-activated{to be additionally classified in} [B29C 65/02](#) {and subgroups});{applying molten plastics, e.g.}hot melts{to be additionally classified in} [B29C 65/40](#) ; non-mechanical parts of adhesive processes, in general [C09J 5/00](#) ); {solvent bonding} ~~[N: Note When classifying in this group, heat-activated adhesives are further classified in group B29C 65/02 . When classifying in this group, applying molten plastics is further classified in group B29C 65/40 .~~
- NOTE**  
*When classifying in this group, heat-activated adhesives are further classified in group [B29C 65/02](#) . When classifying in this group, applying molten plastics is further classified in group [B29C 65/40](#) .*
- WARNING**  
 Subgroups [B29C 65/4805](#) to [B29C 65/4895](#) are not complete, pending a reorganisation; see also this group and [B29C 65/4895](#)
- U B29C 65/74
- by welding and severing,{or by joining and severing, the severing being performed in the area to be joined, next to the area to be joined, in the joint area or next to the joint area}
- NOTE**  
 When classifying in this group, joining techniques are additionally classified in the relevant groups, e.g. in [B29C 65/02](#) and subgroups
- B29C 65/743
- ~~N:-~~{using the same tool for both joining and severing, said tool being monobloc or formed by several parts mounted together and forming a monobloc ~~(-[B29C 65/2046](#) takes precedence-)}~~
- U B29C 66/00
- {General aspects of processes or apparatus for joining preformed parts( means for handling the parts to be joined [B29C 65/78](#) ; testing the joint [B29C 65/82](#) )}**
- WARNING**  
 Groups [B29C 66/00](#) - [B29C 66/98](#) do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - [B29C 66/00](#) - [B29C 66/98](#) : [B29C 65/00](#) ]
- U B29C 66/70
- {characterised by the composition, physical properties or the structure of the material of the parts to be joined; Joining with non-plastics material( chemical aspects [C08J 5/12](#) , [C09J](#) )}
- WARNING**  
 Group [B29C 66/70](#) and subgroups are not complete, pending a reorganisation; see also [B29C 65/00](#) and its subgroups
- U B29C 66/73
- • {characterised by the intensive physical properties of the material of the parts to be joined, by the optical properties of the material of the parts to be joined, by the extensive physical properties of the parts to be joined, by the state of the material of the parts to be joined or by the material of the parts to be joined being a thermoplastic or a thermoset}
- U B29C 66/731
- • • {characterised by the intensive physical properties of the material of the parts to be joined}
- B29C 66/7314
- • • • ~~N:-~~{Electrical and dielectric properties}
- B29C 66/73141
- • • • • ~~N:-~~{Electrical conductivity}
- B29C 66/73143
- • • • • ~~N:-~~{Dielectric properties}

**U B29C 70/00**

**Shaping composites, i.e. plastics material comprising reinforcements, fillers or preformed parts, e.g. inserts( chemical aspects [C08](#) , e.g. [C08J 5/00](#) )**

**NOTE**

In this group, the following terms or expressions are used with the meanings indicated:

- "reinforcement" means a structure in the form of fibres, wires, rods, bars, sections, plates or blocks, which improves the strength of an article;
- "filler" means a relatively inert substance in the form of particles, powder, beads, flakes or spheres, which improves the physical properties or increases the bulk or weight of an article;
- "preformed part" means a part made of any material, being completely shaped to have a determined form and which is not used as a reinforcement, e.g. wires or nets forced only into the surface of an article;
- "insert" means a preformed part incorporated in an article during moulding.

B29C 70/02

- comprising combinations of reinforcements, {e.g. non-specified reinforcements, fibrous reinforcing inserts} and fillers,{e.g. particulate fillers}, incorporated in matrix material, forming one or more layers and with or without non-reinforced or non-filled layers ~~[(N: combinations of fibrous reinforcement only B29C 70/04 ; combinations of fibrous reinforcement only B29C 70/04 ; combinations of fillers only B29C 70/58 ; combinations with non reinforcing inserts, e.g. foam blocks, B29C 70/68-)]~~

**Project: N/A (B29D)****U B29D 30/00**

**Producing pneumatic or solid tyres or parts thereof (producing inner tubes [B29D 23/24](#); constructional form of tyres or parts thereof [B60C](#); connection of valves to inflatable elastic bodies [B60C 29/00](#); testing of tyres [G01M 17/02](#))**

U B29D 30/06

- Pneumatic tyres or parts thereof {(e.g. produced by casting, moulding, compression moulding, injection moulding, centrifugal casting)}

U B29D 30/0601

- • {Vulcanising tyres; Vulcanising presses for tyres}

U B29D 30/0606

- • • {Vulcanising moulds not integral with vulcanising presses}

U B29D 2030/0607

- • • • {Constructional features of the moulds (moulds or cores in general [B29C 33/00](#))}

B29D 2030/0618

- • • • • {~~N~~: Annular elements, e.g. rings, for moulding the tyre shoulder areas-}

**Project: N/A (B29K)****U B29K 2077/00**

**Use of{PA, i.e.}polyamides, e.g. polyesteramides{or derivatives thereof}as moulding material [( as such [C08L 77/00](#) )]**

B29K 2077/10

- {Aromatic polyamides (*Polyaramides*) or derivatives thereof(*Polyaramides*)or derivatives thereof( such as [C08L 77/10](#) )}

- U B29K 2277/00** Use of{PA, i.e.}polyamides, e.g. polyesteramides{or derivatives thereof}, as reinforcement [( as such [C08L 77/00](#) )]
- B29K 2277/10 • {Aromatic polyamides (*Polyaramides*) or derivatives thereof(Polyaramides)or derivatives thereof( as such [C08L 77/10](#) )}
- U B29K 2477/00** Use of{PA, i.e.}polyamides, e.g. polyesteramides{or derivatives thereof}, as filler [( as such [C08L 77/00](#) )]
- B29K 2477/10 • {Aromatic polyamides (*Polyaramides*) or derivatives thereof(Polyaramides)or derivatives thereof( as such [C08L 77/10](#) )}
- U B29K 2677/00** Use of{PA, i.e.}polyamides, e.g. polyesteramides{or derivatives thereof}, for preformed parts, e.g. inserts [( as such [C08L 77/00](#) )]
- B29K 2677/10 • {Aromatic polyamides (*Polyaramides*) or derivatives thereof(Polyaramides)or derivatives thereof( as such [C08L 77/10](#) )}
- B29K 2827/00** {Use of polyvinylhalogenides or derivatives thereof as mould material **[N:]**(-as such [C08L 27/00](#) )}
- B29K 2829/00** {Use of polyvinylalcohols, polyvinylethers, polyvinylaldehydes, polyvinylketones or polyvinylketals or derivatives thereof, as mould material **[N:]**(-as such [C08L 29/00](#) )}
- U B29K 2877/00** {Use of PA, i.e.}polyamides, e.g. polyesteramides or derivatives thereof, as mould material [( as such [C08L 77/00](#) )]
- B29K 2877/10 • {Aromatic polyamides (*Polyaramides*) or derivatives thereof(Polyaramides)or derivatives thereof( as such [C08L 77/10](#) )}
- B29K 2895/00** {Use of bituminous materials, as mould material **[N:]**(-as such [C08L 95/00](#) )}

**Project: N/A (B31B)**

- U B31B 19/00** Machinery characterised by making rectangular envelopes or bags of flat form, i.e. without structural provision at the base for thickness of contents ([B31B 21/00](#), [B31B 23/00](#) take precedence)
- U B31B 19/60 • and having means for uniting opposed surfaces or edges, or for taping
- B31B 19/64 • • by applying heat or pressure [{(N: for block bottom bags [B31B 29/60](#) for block bottom bags [B31B 29/60](#))}]
- U B31B 2201/00** Specific operations carried out during box making
- U B31B 2201/60 • Uniting opposed surfaces or edges; Taping
- U B31B 2201/6073 • • by applying or securing strips or tape
- U B31B 2201/6078 • • • on already formed boxes
- B31B 2201/6082 • • • Applying tape on the corners of set-up boxes (*box staying*), e.g. involving *setting-up* (*box-staying*), e.g. involving *setting-up*

**Project: N/A (B32B)****B32B**

**LAYERED PRODUCTS, i.e. PRODUCTS BUILT-UP OF STRATA OF FLAT OR NON-FLAT, e.g. CELLULAR OR HONEYCOMB, FORM**

**NOTE**

This subclass covers:

- layered products comprising different kinds of material or layered products not characterised by the particular kind of material used;
- a product similar to a layered product but comprising only material in the form of a sheet or network embedded in a mass of plastics or of physically-similar substances which

mass penetrates the said sheet or network and lies on both sides of the latter (e.g. so that the sheet or network reinforces the plastics substance) PROVIDED THAT the embedded sheet or network extends coherently or connectedly over substantially the whole area of the product; thus the embedded sheet or network may be a fabric or a series of rods connected by cross wires. The manner of making such a product is, however, classified in this subclass only if it is essentially a process of building-up an assembly of layers of which at least one outer layer is preformed. If the embedded material comprises only a series of unconnected rods, the product is not classified in this subclass.

This subclass does not cover:

- processes or apparatus used in, or in connection with, the production or treatment of any product, if the process or apparatus is fully classifiable in a single other class or subclass for processes or apparatus, e.g. [B05](#), [B29](#), [B44D](#), [C08J](#), [C09J](#), [C23](#);
- compositions or preparation or treatment thereof, unless they are essentially restricted to layered products and cannot be fully classified in another class without ignoring this restriction;
- etched metallic pattern on the surface of a printed circuit board.

In this subclass:

- a film formed on a layer by spreading a substance thereon is not considered to constitute a layer itself if it serves only as an adhesive or its purpose is merely to finish a surface of a product;
- groups designating products cover also methods or apparatus specially adapted for producing such products.

In this subclass, the following terms or expressions are used with the meanings indicated:

- "layer" is a sheet or strip or anything else having a small thickness relatively to its other dimensions which, together with at least one other layer, exists in a product, whether it pre-existed, e.g. as a separate sheet or strip, or was formed during the production of the layered product. It may or may not be homogeneous or cohesive; it may be an assembly of fibres or pieces of material. It may be discontinuous, e.g. in the form of a grating, honeycomb, or frame. It may or may not be in complete contact with the next layer, e.g. a corrugated layer against a flat layer;
- "layered product" comprises at least two layers secured together. The term "secured" includes any method of uniting layers, e.g. needling, stitching, gluing, nailing, dovetailing or the interposition of an adhesive or adhesive impregnated support. It may also be an intermediate stage in the production of an article which is not layered in its final form, e.g. a panel with a protective layer which is stripped off when the panel is placed in its position of use. The layers are preformed layers or layers formed IN SITU on a preformed layer and may consist of coherent solid materials, including honeycombs and other cellular materials or of non-coherent solid materials composed of assemblies of strands, strips, fibres, tiles or the like;
- "filamentary layer" means a layer of threads or filaments of any substance (e.g. wires) of more or less unlimited length placed in an orderly arrangement and secured together; it may be woven, knitted, braided, or netted, or formed of



threads crossed or laid side by side and bonded together;  
- "fibrous layer" means a random assembly of fibres of limited length, e.g. felt, fleece;  
the fibres {being} interengaged or connected, e.g. by adhesive.  
In this subclass, - "First place rule" is used in the following groups [B32B 9/04](#) , [B32B 11/04](#) , [B32B 13/04](#) , [B32B 15/04](#) , [B32B 19/04](#) , [B32B 21/04](#) , [B32B 23/046](#) - [B32B 23/12](#) , [B32B 25/04](#) , [B32B 27/06](#) , [B32B 29/002](#) . However, when these groups are not characterised by the specific material adjacency to be classified, then, multiple classification is given, e.g. a layered product having a stone layer next to a bituminous layer would be classified in [B32B 9/04](#) and in [B32B 11/04](#) . For a cellulosic plastic layer next to a metal layer or to a wood layer [B32B 23/042](#) or [B32B 23/044](#) , respectively, take precedence (i.e. first rule does not apply). For layered products comprising at least two ceramic layers , products comprising only ceramic layers are classified in group [B32B 18/00](#) and products comprising two ceramics layers and at least one layer of another material are classified in [B32B 18/00](#) and [B32B 9/04](#) .

#### WARNING

The following IPC are not used in the CPC scheme Subject matter covered by theses groups is classified in the following CPC groups - [B32B 1/04](#) covered by [B32B 3/02](#) - [B32B 3/08](#) - [B32B 1/06](#) covered by [B32B 13/02](#) - [B32B 3/08](#) - [B32B 3/22](#) covered by [B32B 3/08](#) - ~~[B2B3/22](#)~~ [B32B 3/22](#) - [B32B 3/24](#) covered by [B32B 3/266](#) - [B32B 5/28](#) covered by [B32B 2260/021](#) - [B32B 2260/023](#) - [B32B 17/02](#) covered by [B32B 2262/101](#) - [B32B 17/04](#) covered by [B32B 2262/101](#) and [B32B 2260/04](#) - [B32B 17/12](#) covered by [B32B 17/067](#) - [B32B 23/02](#) covered by [B32B 2262/04](#) and [B32B 5/02](#) - [B32B 5/12](#) - [B32B 27/02](#) covered by [B32B 2262/02](#) - [B32B 2262/0292](#) and [B32B 5/02](#) - [B32B 5/12](#) - [B32B 27/04](#) covered by [B32B 2260/048](#)

#### **U B32B 5/00**

**Layered products characterised by the non- homogeneity or physical structure{, i.e. comprising a fibrous, filamentary, particulate or foam layer; Layered products characterised by having a layer differing constitutionally or physically in different parts}**

#### NOTE

In this group, fibres, filaments, granules, or powder forming or included in a layer may be impregnated, bonded together, or embedded in a substance such as synthetic resin. If the substance of the fibres, or the like, or the impregnating, bonding, or embedding substance, is important it is classified in the relevant group for the substance.

#### **U B32B 5/22**

- characterised by the presence of two or more layers which{are next to each other and are fibrous, filamentary, formed of particles or foamed( [B32B 19/06](#) , [B32B 19/048](#) [B32B 19/047](#) , [B32B 29/005](#) to [B32B 29/04](#) take precedence )}

#### **B32B 5/32**

- ~~N~~ {at least two layers being foamed and next to each other (all layers being foamed [B32B 2250/22](#) )}

#### **Project: RP0015 (B33)**

#### **N B33**

**{ADDITIVE MANUFACTURING TECHNOLOGY}**

**Project: RP0015 (B33Y)****N B33Y**

**{ADDITIVE MANUFACTURING, i.e. MANUFACTURING OF THREE-DIMENSIONAL [3D] OBJECTS BY ADDITIVE DEPOSITION, ADDITIVE AGGLOMERATION OR ADDITIVE LAYERING, e.g. BY 3D PRINTING, STEREOLITHOGRAPHY OR SELECTIVE LASER SINTERING}**

NOTES

1. This subclass covers additive manufacturing, irrespective of the process or material used.
2. This subclass is intended to enable a comprehensive search of subject matter related to additive manufacturing by combination of classification symbols of this subclass with classification symbols from other subclasses. Therefore this subclass covers aspects of additive manufacturing (e.g. 3D printing) that might also be entirely or partially covered elsewhere in CPC.
3. This subclass is for obligatory supplementary classification of subject matter already classified as such in other classification places, when the subject matter contains an aspect of additive manufacturing.
4. The classification symbols of this subclass are not listed first when assigned to patent documents.
5. In this subclass, multi-aspect classification is applied, so that aspects of subject matter that are covered by more than one of its groups should be classified in each of those groups.

**N B33Y 10/00****{Processes of additive manufacturing}****N B33Y 30/00****{Apparatus for additive manufacturing; Details thereof or accessories therefor}****N B33Y 40/00****{Auxiliary operations or equipment, e.g. for material handling}****N B33Y 50/00****{Data acquisition or data processing for additive manufacturing}****N B33Y 50/02**

• {for controlling or regulating additive manufacturing processes}

**N B33Y 70/00****{Materials specially adapted for additive manufacturing}****N B33Y 80/00****{Products made by additive manufacturing}****N B33Y 99/00****{Subject matter not provided for in other groups of this subclass}****Project: N/A (B41L)****U B41L 1/00**

**Devices for performing operations in connection with manifold by means of pressure-sensitive layers or intermediaries, e.g. carbons; Accessories for manifold purposes**

B41L 1/20

• Manifold assemblies, e.g. book-like assemblies **{{(N:Multi-copy-labels G09F 3/0288Multi-copy labels G09F 3/0288)}}**

**Project: N/A (B41M)****U B41M 5/00**

**Duplicating or marking methods; Sheet materials for use therein( by using light-sensitive materials [G03](#) ; electrography, magnetography [G03G](#) ; { repeatedly usable boards or tablets for writing or drawing [B43L 1/00](#) })**

**U B41M 5/50**

• Recording sheets characterised by the coating used to improve ink, dye or pigment receptivity, e.g. for ink-jet or thermal dye transfer recording{( printing on organic plastics using a printer's form [B41M 1/30](#) ; printing on pre-treated paper with a printer's form [B41M 1/36](#) )}

B41M 5/52

- • Macromolecular coatings { ~~Note In this group, when the invention information lies in a combination of features covered by more than one of its subgroups, classification is made in B41M 5/52, using the corresponding indexing codes of its subgroups to identify the individual features~~ }

NOTE

*{ In this group, when the invention information lies in a combination of features covered by more than one of its subgroups, classification is made in B41M 5/52, using the corresponding indexing codes of its subgroups to identify the individual features }*

**Project: N/A (B43K)**

U B43K 8/00

**Pens with writing-points other than nibs or balls (brushes with reservoir for supplying substances [A46B 11/00](#))**

B43K 8/003

- ~~N~~-{Pen barrels~~+~~}

**Project: N/A (B60G)**

U B60G 3/00

**Resilient suspension for a single wheel (pivoted suspension arms per se, attachment thereof to sprung part of the vehicle, buffer means for limiting movement of arms [B60G 7/00](#); {rigid axle suspensions [B60G 9/00](#);} characterised by arrangement, location or type of springs [B60G 11/00](#))**

U B60G 3/18

- with two or more pivoted arms, e.g. parallelogram

B60G 3/28

- • at least one of the arms itself being resilient, e.g. leaf spring ~~{(N:B60G 7/003 takes precedence)}~~

**Project: N/A (B60J)**

U B60J 1/00

**Windows; Windscreens; Accessories therefor ([B60J 10/00](#) takes precedence; air curtains instead of windows [B60J 9/04](#); { sealing strips for windshields [B60J 10/02](#); sealing sash guides for sliding window panes [B60J 10/04](#); glass partitions inside vehicles to protect occupants against personal attack [B60R 21/12](#))}**

U B60J 1/20

- Accessories, e.g. wind deflectors, blinds (antiglare provisions [B60J 3/00](#); wind deflectors associated with roof openings [B60J 7/22](#); removable external protective coverings for windows or windscreens [B60J 11/08](#); { aerodynamical spoiler for vehicles [B62D 35/00](#);} heating arrangements specially adapted for transparent or reflecting areas [H05B 3/84](#))

U B60J 1/2011

- • {Blinds; curtains or screens reducing heat or light intensity (means against intense light blinding the driver or passengers [B60J 3/00](#))}

U B60J 1/2013

- • • { Roller blinds (for roofs [B60J 7/0015](#); for luggage covering [B60R 5/047](#); for openings in buildings [E06B 9/40](#))}

U B60J 1/2066

- • • • { Arrangement of blinds in vehicles}

U B60J 1/2075

- • • • • { specially adapted for fixed windows}

B60J 1/2077

- • • • • • ~~N~~-{for windshields~~+~~}

**Project: N/A (B60K)**

B60K 2741/00

**Conjoint control of drive units; Conjoint control of at least two sub-units thereof ~~Note: These groups are created for temporary back-up of former group B60K 41/00 which will be replaced by B60W~~**

NOTE

*These groups are created for temporary back-up of former group [B60K 41/00](#) which will be replaced by [B60W](#)*

**Project: N/A (B60Q)****B60Q**

**VEHICLE LIGHTING OR SIGNALLING**(arrangement of signalling or lighting devices, the mounting or supporting thereof for rail vehicles [B61D](#), for cycles [B62J](#), for ships [B63B](#), for aircrafts [B64D](#); lighting in general, lighting devices per se [F21](#), [H05B](#); signalling in general [G08](#); electric switches per se [H01H](#))

NOTES

This subclass covers also:

- electric signalling of lighting circuits so far as specially arranged in vehicles;
- arrangements or adaptations of lighting switches or signal-initiating means

Attention is drawn to the Note following the title of class [B60](#)

Attention is drawn to the following places :

- [B60K 28/00](#) Safety devices, e.g. sleeping driver
- ~~[B60R 25](#)~~ [B60R 25/00](#) Anti theft
- [B62D](#) Driving assistance
- [B62D 15/02](#) Steering aids
- [B60K 31/0008](#) Cruise control
- [F21S 48/00](#) Lighting devices or systems specially adapted for vehicles
- [G01S](#) Infra red night vision
- [G01S 13/931](#) Anti Collision
- [G05D 1/00](#) Automatic pilot
- [G06K 9/00](#) Pattern recognition
- [G06T 3/00](#) Image transformation
- [G06T 5/00](#) Image enhancement
- [G06T 7/00](#) Image analysis
- [G08B 21/00](#) Alarms in general
- [G08G](#) Traffic control
- [G08G 1/16](#) Anti-collision systems
- [H04N](#) Television systems

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:

- |                            |            |                            |
|----------------------------|------------|----------------------------|
| <a href="#">B60Q 1/128</a> | covered by | <a href="#">B60Q 1/124</a> |
| <a href="#">B60Q 1/132</a> | covered by | <a href="#">B60Q 1/124</a> |
| <a href="#">B60Q 1/136</a> | covered by | <a href="#">B60Q 1/124</a> |

**Project: N/A (B60R)****U B60R 16/00**

**Electric or fluid circuits specially adapted for vehicles and not otherwise provided for; Arrangement of elements of electric or fluid circuits specially adapted for vehicles and not otherwise provided for**{( devices for protecting vehicle occupants in case of accidents [B60R 21/00](#) ; safety belts [B60R 22/00](#) ; central door locking [E05B 49/00](#) , [E05B 65/38](#) )}

**U B60R 16/02**

- electric{constitutive elements}

**U B60R 16/037**

- • for occupant comfort,{e.g. for automatic adjustment of appliances according to personal settings, e.g. seats, mirrors, steering wheel}

**D B60R 16/0376**

- • • {Gear-shift lever position( indicating position of controlling members in general [G05G 1/00](#) )}

- U B60R 21/00** Arrangements or fittings on vehicles for protecting or preventing injuries to occupants or pedestrians in case of accidents or other traffic risks( safety belts or body harnesses in vehicles [B60R 22/00](#) ; devices, apparatus or methods for life-saving in general [A62B](#) ; safety devices for propulsion unit control specially adapted for, or arranged in, vehicles [B60K 28/00](#) ; seats constructed to protect the occupant from the effect of abnormal g-forces, e.g. crash or safety seats, [B60N 2/42](#) ; energy-absorbing arrangements for hand wheels for steering vehicles [B62D 1/11](#) ; energy-absorbing arrangements for vehicle steering columns [B62D 1/19](#) ; harnessing in aircraft [B64D 25/00](#) )
- B60R 21/01 • Electrical circuits for triggering {passive} safety arrangements, {(e.g. airbags, safety belt tighteners,) in case of vehicle accidents or impending vehicle accidents {( electrical circuits for transmission of signals between steering wheel and the vehicle itself [B60R 16/027](#) ; for electrically actuating belt retractor locking ~~mens~~[means](#) [B60R 22/343](#) )}}
- B60R 21/013 • • including means for detecting collisions, impending collision or roll-over ~~{(- inclination sensors per se G01C 9/00 ; acceleration sensors per se G01P 15/00 ; radar systems per se G01S 13/00 ; inertia switches per se H01H 35/14 )}~~

**Project: RP0017 (B60R)**

- U B60R 21/0132** • • • responsive to vehicle motion parameters{,e.g. to vehicle longitudinal or transversal deceleration or speed value}

**Project: N/A (B60R)**

- N B60R 21/0133* • • • • {by integrating the amplitude of the input signal}  
WARNING  
 Group(s) [B60R 21/0133](#) - [B60R 21/01338](#) are incomplete pending reclassification of documents from group [B60R 21/0132](#).  
 Until reclassification is complete, groups [B60R 21/0132](#) and [B60R 21/0133](#) - [B60R 21/01338](#) should be considered in order to perform a complete search.
- N B60R 21/01332* • • • • {by frequency or waveform analysis}
- N B60R 21/01334* • • • • {using Fourier analysis}
- N B60R 21/01336* • • • • {using filtering}
- N B60R 21/01338* • • • • {using vector analysis}

**Project: N/A (B60S)**

- U B60S 1/00** **Cleaning of vehicles (by apparatus not integral with vehicle [B60S 3/00](#); cleaning in general [B08B](#); de-icing of aircraft [B64D](#); heating arrangements specially adapted for transparent or reflecting areas [H05B 3/84](#))**
- U B60S 1/02** • Cleaning windscreens, windows or optical devices {(wind deflectors specially adapted for preventing soiling of windows or windscreens [B60J 1/2002](#))}
- U B60S 1/04** • • Wipers or the like, e.g. scrapers
- U B60S 1/043** • • • {Attachment of the wiper assembly to the vehicle}
- U B60S 1/0441** • • • • {characterised by the attachment means}
- B60S 1/0447** • • • • {non-screw fixation, (e.g. [snap-in](#), [bayonet-type](#)..)}~~{(e.g. [snap-in](#), [bayonet-type](#)..)}~~
- U B60S 1/32** • • • characterised by constructional features of wiper blade arms {or blades}
- U B60S 1/40** • • • • Connections between blades and arms

B60S 1/4003

- • • • { Multi-purpose connections for two or more kinds of arm ends}

NOTE

Multi-aspect classification is applied for technical subjects relating to the arms and covered by subgroups [B60S 1/4006](#) to ~~B60S1/40J~~  
[B60S 1/4083](#)

**Project: N/A (B60T)**

U B60T 8/00

**Arrangements for adjusting wheel-braking force to meet varying vehicular or ground-surface conditions, e.g. limiting or varying distribution of braking force( by changing number of effective brake cylinders in power brake systems [B60T 17/10](#) )**

U B60T 8/32

- responsive to a speed condition, e.g. acceleration or deceleration({ using electrical circuitry or regulation means [B60T 8/17](#) } ; [B60T 8/28](#) takes precedence; electric devices on electrically propelled vehicles indicating the wheel slip [B60L 3/10](#) ; measuring linear or angular speed per se [G01P 3/00](#) )

U B60T 8/34

- • having a fluid pressure regulator responsive to a speed condition

U B60T 8/40

- • • comprising an additional fluid circuit including fluid pressurising means for modifying the pressure of the braking fluid, e.g. including wheel driven pumps for detecting a speed condition, or pumps which are controlled by means independent of the braking system

U B60T 8/4018

- • • • {Pump units characterised by their drive mechanisms( [B60T 8/4095](#) takes precedence )}

B60T 8/4027

- • • • {Pump units driven by [\(parts of\) the vehicle propulsion unit](#) }(~~parts of)the vehicle-propulsion-unit~~)

**Project: N/A (B60W)**

B60W

**CONJOINT CONTROL OF VEHICLE SUB-UNITS OF DIFFERENT TYPE OR DIFFERENT FUNCTION; CONTROL SYSTEMS SPECIALLY ADAPTED FOR HYBRID VEHICLES; ROAD VEHICLE DRIVE CONTROL SYSTEMS FOR PURPOSES NOT RELATED TO THE CONTROL OF A PARTICULAR SUB-UNIT**

NOTE

(1) This subclass does not cover the control of a single sub-unit; such control is classified in the relevant place for the sub-unit, e.g. [F02D](#), [F16H](#). Where a single sub-unit is controlled by means of signals or commands from other sub-units, the control of this single sub-unit is classified in the relevant place for this sub-unit. For example, the control of variable-ratio gearing by means of signals from the engine or the accelerator is classified in the subclass for gearing, [F16H](#).

(2) Conjoint control of driveline units, e.g. engines, and variable-ratio gearing occurring only transiently during ratio shift and being also characterised by the control of the gearing is also classified in the subclass for gearing, [F16H](#).

(3) In groups [B60W 20/00](#) - [B60W 50/00](#), the first place priority rule is applied, i.e. at each hierarchical level, classification is made in the first appropriate place.

(4) When classifying in group [B60W 10/00](#), classification must also be made in groups [B60W 20/00](#)-[B60W 50/00](#) in order to identify the purpose or use of the control.

(5) In this subclass, the following terms are used with the meanings indicated:  
- "conjoint control" means that a programmed or condition-responsive { main} automatic controller on board the vehicle, embodying control logic for vehicle sub-units of different type or different function, sends control signals to actuators of two or more vehicle sub-units, { three or more vehicle sub-units for groups [B60W 30/00](#)-~~30/46~~[B60W 30/16](#)}, so that the sub-units act together to solve a particular problem or in response to a particular driving condition, { in order to



improve stability, comfort or safety by managing the global dynamics of the vehicle};  
 - "drive control system" means an electronic system in a road vehicle for automatically controlling the movement { by managing the global dynamics} of that vehicle in order to take certain actions { in order to improve stability, comfort or safety};  
 - "road vehicle" means a { motorised passenger} vehicle normally under the control of a human driver for transportation on roads, e.g. an automobile, truck or bus;  
 - "sub-unit" means one of the following vehicle systems: { driveline systems, e.g.} propulsion system, clutch system, change-speed gearing system, system for distributing drive torque between front and rear axles, axle differential system, brake system, steering system, suspension system, { and, particularly for hybrid vehicles,} energy storage means, fuel cells, or auxiliary equipment.

**U B60W 30/00** **Purposes of road vehicle drive control systems not related to the control of a particular sub-unit, e.g. of systems using conjoint control of vehicle sub-units, { or advanced driver assistance systems for ensuring comfort, stability and safety or drive control systems for propelling or retarding the vehicle (anti-lock brake systems (ABS) [B60T 8/00](#))}**

**U B60W 30/18** • Propelling the vehicle

WARNING

Subgroups of [B60W 30/18](#) are not complete. Documents from [B60K 41/00](#) and [B60W 30/18](#) are in the process of being reorganised to the new groups

B60W 30/1819 • • ~~N: {~~Propulsion control with control means using analogue circuits, relays or mechanical links~~}]~~

**Project: N/A (B62D)**

**U B62D 1/00** **Steering controls, i.e. means for initiating a change of direction of the vehicle**

**U B62D 1/02** • vehicle-mounted

**U B62D 1/16** • • Steering columns

B62D 1/18 • • • yieldable or adjustable, e.g. tiltable( padded linings associated with the steering column [B60R 21/05](#) )

NOTE

~~Group B62D 1/181 takes precedence over groups B62D 1/183 - B62D 1/187.~~

*Group [B62D 1/181](#) takes precedence over groups [B62D 1/183](#) - [B62D 1/187](#).*

**U B62D 63/00** **Motor vehicles or trailers not otherwise provided for**

**U B62D 63/06** • Trailers( vehicles comprising living accommodation for people, e.g. caravans, camping or like vehicles [B60P 3/32](#) )

**U B62D 63/062** • • {Trailers with one axle or two wheels( semi-trailers [B62D 53/06](#) )}

**U B62D 63/065** • • • {forming an extension of the towing vehicle, i.e. with two point fixation}

B62D 63/067 • • • • {single wheeled (*rigid or semi-rigid coupling*)}(~~rigid or semi-rigid coupling~~)}

**Project: N/A (B63B)**

- U B63B 35/00 Vessels or like floating structures adapted for special purposes( vessels characterised by load-accommodating arrangements [B63B 25/00](#) ; fire-fighting vessels [A62C 29/00](#) ; submarines, mine-layers or mine-sweepers [B63G](#); large containers for use in or under water [B65D 88/78](#) ; { Advertising on ships or other floating means [G09F 21/18](#) } )
- U B63B 35/50 • Vessels or floating structures for aircraft( aircraft carriers [B63G 11/00](#) ; flying-boat hulls, other flotation means for aircraft [B64](#) )
- WARNING
- 1) not complete pending a reorganisation, see for self-levelling landing platforms also [B63B 29/12](#) ; 2) this group and its subgroup [B63B 35/52](#) are pending a reorganisation, also documents covered by group [B63B 35/53](#) are in this group and its subgroups
- B63B 35/53 • • Floating runways
- WARNING
- Group [B63B 35/53](#) is not complete pending a reorganisation; see also groups [B63B 35/50](#) and [B63B 35/52](#)
- Group [B63B 35/53](#) is not complete pending a reorganisation; see also groups [B63B 35/50](#) and [B63B 35/52](#)

**Project: N/A (B63H)**

- U B63H 11/00 Effecting propulsion by jets, i.e. reaction principle(steering by{ auxiliary }jet action,{ rudders carrying jets } [B63H 25/46](#) ; power plant per se, see the relevant classes )
- U B63H 11/02 • the propulsive medium being ambient water
- U B63H 11/10 • • having means for deflecting jet or influencing cross-section thereof
- WARNING
- Documents concerning deflection of the jet into a direction substantially parallel to the plane of the pump outlet are in the process of being reorganised to [B63H 11/101](#)
- B63H 11/107 • • Direction control of propulsive fluid{( [B63H 11/101](#) takes precedence )}
- WARNING
- [N1108](#)
- Documents concerning means for deflecting jet into a propulsive direction substantially parallel to the plane of the pump outlet opening are in the process of being reorganized to [B63H 11/101](#)

**B63H 20/00**

Outboard propulsion units, i.e. propulsion units having a substantially vertical power leg mounted outboard of a hull and terminating in a propulsion element, e.g. "outboard motors", Z-drives {with level bridging shaft arranged substantially outboard} ~~<explanation>power plants per se; see the relevant classes (power plants per se, see the relevant classes);~~ Arrangements thereof on vessels {(transom panels for outboard motors on inflatable boats [B63B 7/087](#); tug-type floating propeller units [B63B 35/665](#); rudders carrying propellers [B63H 25/42](#); rudders carrying jets [B63H 25/46](#); engines of outboard propulsion units [F02B 61/045](#))}

WARNING

~~<p/~~Not complete pending a reclassification; see also [B63H 5/1252](#), as well as [B63H 21/26](#) and subgroups

**Project: N/A (B63J)****B63J 3/00**

Driving of auxiliaries (transmission elements per se [F16](#))

WARNING

~~B63J 3/00 and subgroups are not complete pending a reclassification; see also group B63J 99/00]~~

*B63J 3/00 and subgroups are not complete pending a reclassification; see also group B63J 99/00]*

**Project: RP0025 (B64D)****U B64D 11/00**

Passenger or crew accommodation; Flight-deck installations not otherwise provided for

**B64D 11/0015**

• {Arrangements for entertainment or communications, e.g. radio, television}

WARNING

*Groups [B64D 11/00151](#) - [B64D 11/00155](#) are incomplete pending reclassification of documents from group [B64D 11/0015](#).*

*Until reclassification is complete, groups [B64D 11/00151](#) - [B64D 11/00155](#) and [B64D 11/0015](#) should be considered in order to perform a complete search.*

**Project: N/A (B64D)****N B64D 11/00151**

• {Permanently mounted seat back monitors}

**N B64D 11/00152**

• {Seat back fixtures for removable monitors, e.g. tablet computers}

**N B64D 11/00153**

• {Monitors mounted on or in the seat other than the seat back}

**N B64D 11/00154**

• {Loudspeakers mounted in the seat back}

**N B64D 11/00155**

• {Individual entertainment or communication system remote controls therefor, located in or connected to seat components, e.g. to seat back or arm rest}

**Project: RP0025 (B64D)****B64D 11/06**

• {Arrangements *of seats*, or adaptations *of details specially adapted for aircraft* seats (~~seat constructions for emergency purposes [B64D 25/04](#) ; { seat accessories [B60N 3/00](#) } crew seat constructions for emergency purposes [B64D 25/04](#) )}~~

WARNING

*Groups [B64D 11/0601](#) - [B64D 11/0698](#) are incomplete pending reclassification of documents from group [B64D 11/06](#).*

*Until reclassification is complete, groups B64D 11/0601 - B64D 11/0698 and B64D 11/06 should be considered in order to perform a complete search.*

**Project: N/A (B64D)**

- N B64D 11/0601
    - • {Arrangement of seats for non-standard seating layouts, e.g. seats staggered horizontally or vertically, arranged in an angled or fishbone layout, or facing in other directions than the direction of flight}
  - N B64D 11/0602
    - • {Seat modules, i.e. seat systems including furniture separate from the seat itself}
  - D B64D 2011/0603
    - • {Details of seats}
  - N B64D 11/0604
    - • • {including a bed, e.g. cocoon type passenger seat modules}
  - N B64D 11/0605
    - • • {including tables or desks}
  - N B64D 11/0606
    - • {with privacy shells, screens, separators or the like (class dividers [B64D 11/0023](#))}
  - D B64D 2011/0606
    - • • {with inclination or position adjusting mechanisms}
  - N B64D 11/0607
    - • {with devices specially adapted for exercising during travel; with devices specially adapted to prevent thrombosis}
  - D B64D 2011/061
    - • • {with airbag storages}
  - N B64D 11/0611
    - • {with means for holding the passenger in a standing position}
  - N B64D 11/0612
    - • {specially adapted for children}
  - D B64D 2011/0613
    - • • {with arm rests}
  - N B64D 11/0616
    - • {with ejection means}
  - D B64D 2011/0617
    - • • {arranged for providing alternative seat dispositions, e.g. angled}
  - N B64D 11/0619
    - • {with energy absorbing means specially adapted for mitigating impact loads for passenger seats, e.g. at a crash}
  - N B64D 11/062
    - • {Belts or other passenger restraint means for passenger seats}
  - D B64D 2011/062
    - • • {convertible into beds}
  - N B64D 11/06205
    - • • {Arrangements of airbags}
  - N B64D 11/0621
    - • • • {Airbag initiation or activation means}
  - N B64D 11/0624
    - • {Arrangements of electrical connectors, e.g. for earphone, internet or electric supply}
  - D B64D 2011/0624
    - • • {adapted for children}
  - N B64D 11/0626
    - • {with individual temperature or ventilation control}
  - N B64D 11/0627
    - • {Seats combined with storage means}
  - D B64D 2011/0627
    - • • {with energy absorbing means}
  - N B64D 11/0629
    - • • {the storage means being specially adapted for emergency equipment}
- WARNING  
Groups [B64D 11/0631](#) - [B64D 11/0633](#) is/are incomplete pending reclassification of documents from group [B64D 11/0629](#).  
Until reclassification is complete, groups [B64D 11/0631](#) - [B64D 11/0633](#) and [B64D 11/0629](#) should be considered in order to perform a complete search.
- D B64D 2011/0631
    - • • {with ejection means}
  - N B64D 11/0631
    - • • • {for life vests}
  - N B64D 11/0632
    - • • • {for breathing apparatus}
  - N B64D 11/0633
    - • • • {for devices other than life vests and intended for external use, e.g. parachutes or life rafts}

- D B64D 2011/0634 . . . {making use of electric motors}
- N B64D 11/0636 . . . {Personal storage means or waste disposal bags}
- D B64D 2011/0637 . . . {with internet connection, earphone jacks, or electric supply sockets}
- N B64D 11/0638 . . {with foldable tables, trays or cup holders}
- N B64D 11/0639 . . {with features for adjustment or converting of seats}
- N B64D 11/06395 . . . {characterised by the arrangement of electric motors for adjustment}
- N B64D 11/064 . . . {Adjustable inclination or position of seats}
- D B64D 2011/0641 . . . {Seats with means for exercising during travel, e.g. against congestion}
- N B64D 11/0641 . . . {Seats convertible into beds}
- N B64D 11/0642 . . . {Adjustable headrests}
- N B64D 11/0643 . . . {Adjustable foot or leg rests}
- D B64D 2011/0644 . . . {with floor attachments}
- N B64D 11/0644 . . . {Adjustable arm rests}
- N B64D 11/0646 . . {Seats characterised by special features of stationary arms, foot or head rests}
- N B64D 11/0647 . . {Seats characterised by special upholstery or cushioning features}
- N B64D 11/0648 . . {Lower frame constructions}
- D B64D 2011/0648 . . . {with adjustable foot or leg rests}
- N B64D 11/0649 . . {Seats characterised by special features for reducing weight}
- D B64D 2011/0651 . . . {with individual temperature controls}
- D B64D 2011/0655 . . . {designed for facilitating manufacturing or for reducing weight}
- D B64D 2011/0658 . . . {including a bed and entertainment equipments, e.g. cocoon-type passenger seat modules}
- D B64D 2011/0662 . . . {with personal storage means or waste disposal bags}
- D B64D 2011/0665 . . . {with privacy shells, screens, separators or the like}
- D B64D 2011/0668 . . . {with belts, or other passenger restraintment, or with headrests}
- D B64D 2011/0672 . . . {with storage means for life vests, oxygen masks or parachutes}
- D B64D 2011/0675 . . . {with means for holding the passenger in a standing position}
- D B64D 2011/0679 . . . {with foldable tables, trays or cup holders}
- D B64D 2011/0682 . . . {with upholstery or cushioning}
- D B64D 2011/0686 . . . {with ventilation means}
- N B64D 11/0691 . . {specially adapted for cabin crew}
- N B64D 11/0697 . . {Seats suspended from aircraft ceiling}
- N B64D 11/0698 . . {Seats suspended from aircraft walls}
- U B64D 2231/00 Emergency oxygen systems**
- U B64D 2231/02 . Supply or distribution systems
- B64D 2231/025 . . Oxygen masks; Mask storages (-adaptations for seats B64D-2011/0672 seats combined with storage means, said storage means being specially adapted for emergency equipment B64D 11/0629); Features related to mask deployment.

**Project: N/A (B65B)**

- U B65B 9/00 Enclosing successive articles, or quantities of material, e.g. liquids or semi-liquids, in flat, folded, or tubular webs of flexible sheet material; Subdividing filled flexible tubes to form packages**

- B65B 9/06
- Enclosing successive articles, or quantities of material, in a longitudinally-folded web, or in a web folded into a tube about the articles or quantities of material placed upon it
- NOTE  
If an invention involves both continuous and intermittent web motion, it is classified in both groups [B65B 9/067](#) and [B65B 9/073](#).
- B65B 9/08
- • in a web folded and sealed transversely to form pockets which are subsequently filled and then closed by sealing
- NOTE  
If an invention involves both continuous and intermittent web motion, it is classified in both groups [B65B 9/087](#) and [B65B 9/093](#).
- U B65B 9/10
- Enclosing successive articles, or quantities of material, in preformed tubular webs, or in webs formed into tubes around filling nozzles, e.g. extruded tubular webs (sausage making [A22C 11/00](#))
- B65B 9/20
- • the webs being formed into tubes in situ around the filling nozzles
- NOTE  
If an invention involves both continuous and intermittent web motion, it is classified in both groups [B65B 9/207](#) and [B65B 9/213](#).

**Project: N/A (B65D)**

- U B65D 2501/00 Containers having bodies formed in one piece**
- U B65D 2501/24
- Boxes or like containers with moulded compartments or partitions
- U B65D 2501/24006
- • Details relating to bottle crates
- U B65D 2501/24554
- • • Stacking means( [B65D 2501/24694](#) takes precedence )
- U B65D 2501/24585
- • • • for stacking or joining the crates together one upon the other, in the upright or upside-down position
- U B65D 2501/24649
- • • • • Auxiliary removable stacking elements other than covers
- B65D 2501/24656
- • • • • these elements being *(part of) the contents*~~(part of)the contents~~
- U B65D 2501/24694
- • • Crates shaped to be nested when empty and superposed when full
- U B65D 2501/24726
- • • • with movable parts adapted to be placed in alternative positions for nesting the containers when empty and for stacking them when full
- B65D 2501/24757
- • • • • the movable parts being *(part of) the contents*~~(part of)the contents~~



**Project: N/A (B65G)****B65G**

TRANSPORT OR STORAGE DEVICES, e.g. CONVEYERS FOR LOADING OR TIPPING; SHOP CONVEYER SYSTEMS; PNEUMATIC TUBE CONVEYERS({ preventing fire in special objects or places [A62C 3/00](#) } ; transport or storage devices used in a particular handling or treatment of articles or materials, see the relevant subclass, e.g. in metal-working [B21D 43/00](#) , [B23Q 7/00](#) , [B23Q 41/02](#) ; vehicle, railway, sea or aircraft aspects [B60](#) to [B64](#); in packaging [B65B](#); handling thin or filamentary materials [B65H](#); hoisting, lifting, hauling, e.g. truck loaders [B66](#); handling liquids [B67](#); { transport or storage containers for preparing or distributing road building materials [E01C](#); construction or assembling of bulk storage containers employing civil engineering techniques in site or off the site [E04H 7/00](#) } ; specially adapted to underground conditions in mines [E21F 13/00](#) ; storing or distributing gases or liquids [F17](#); in handling radioactive materials [G21C 19/00](#) )

WARNING

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

<a href="#">B65G 33/28</a>	covered by	<a href="#">B65G33/26B</a>
<a href="#">B65G 33/265</a>		
<a href="#">B65G 47/10</a>	covered by	<a href="#">B65G1/137D</a>
<a href="#">B65G 1/1373</a>		
<a href="#">B65G 47/86</a>	covered by	<a href="#">B65G 47/842</a>
,		
<a href="#">B65G 47/847</a>		
<a href="#">B65G 49/07</a>	covered by	
<a href="#">H01L 21/677</a>		
<a href="#">B65G 69/32</a>	covered by	
<a href="#">B65G 69/28</a>		
<a href="#">B65G 69/34</a>	covered by	<a href="#">B65G 69/28</a>

**U B65G 51/00**

Conveying articles through pipes or tubes by fluid flow or pressure( pneumatic railways [B61B](#) ); Conveying articles over a flat surface, e.g. the base of a trough, by jets located in the surface( pumps [F04](#) ; fluid dynamics [F15D](#) ; valves, taps, cocks [F16K](#) ; pipes, pipe joints, or associated devices [F16L](#) )

**U B65G 51/04**

- Conveying the articles in carriers having a cross-section approximating that of the pipe or tube; Tube mail systems

**B65G 51/08**

- Controlling or conditioning the operating medium(~~in compressors 59;~~ [in compressors 59](#); air-conditioning, e.g. de-watering, in pneumatic systems [F16L 55/10](#) )

**Project: N/A (B65H)****B65H**

HANDLING THIN OR FILAMENTARY MATERIAL, e.g. SHEETS, WEBS, CABLES

NOTES

This subclass does not cover methods or devices intimately associated with other operations on thin or filamentary material, e.g. sheets, webs, cables or means for performing such operations, which are classified in the relevant subclasses for these operations, e.g.:

[B07C](#) Postal sorting, similar sorting of documents,  
e.g. cheques

[B08B 1/02](#) Cleaning travelling work, e.g. webs, by methods involving the use of tools, brushes or like members

[B21B 41/00](#) Metal rolling involving guiding, conveying or accumulating easily-flexible work, e.g. wire, sheet metal bands, in loops or curves

[B21C 47/00](#) , Winding-up, coiling, winding-off or temporarily

[B21C 49/00](#) accumulating metal wire, metal band or other flexible metal material, characterised by features relevant to metal processing only, other than by rolling

[B21D 43/00](#) Feeding, positioning or storing devices, combined with, or arranged in, or specially adapted for use in connection with, apparatus for working or processing sheet metal without essentially removing material

[B23K 9/12](#) Means for automatic feeding of electrodes for spot or seam welding or cutting

[B29C 31/00](#) Handling for shaping or joining of plastics, for shaping of substances in a plastic state in general or for after-treatment of shaped products, e.g. feeding the material to be shaped

[B41B 15/32](#) , Film-handling mechanisms in photographic

[B41B 21/32](#) composing machines

[B41F 13/02](#) Conveying or guiding webs through rotary printing presses or machines

[B41J 11/00](#) to Handling of copy- or impression-transfer material

[B41J 17/00](#) in typewriters or selective printing mechanisms

[B41K 3/44](#) Means for handling copy matter in stamping or numbering apparatus or devices

[B41L](#) Handling sheets or webs in apparatus or devices for manifolding, duplicating or printing for office or other commercial purposes, or on addressing machines or like series-printing machines

[B42B](#) Handling relating to permanently attaching together sheets, quires, or signatures

[B42C](#) Handling sheets in book-binding

[B65B](#) Handling of sheets or webs in apparatus for, or methods of, packaging articles, not of interest apart from their application in packaging machines

[B65C](#) Handling of labels in labelling or tagging apparatus

[C14B 1/62](#) Winding or stacking hides or leather in machines or devices for manufacturing leather

[D01](#) to [D07](#) Spinning, weaving, braiding, lace-making,  
knitting, sewing, making ropes or cables  
[D21F 2/00](#) Transferring webs from wet ends to  
press  
sections in paper-making  
[F26B 13/00](#) Handling fabrics, fibres, yarns or  
other  
material in long lengths in drying apparatus  
[G03B](#) Film-strip handling or handling of  
pictures  
in apparatus for taking photographs or for  
projecting or viewing them  
[G06K 13/00](#) Conveying record carriers from one station  
to  
another  
[G06M 7/00](#) Counting of flat articles, e.g. sheets,  
carried  
by a conveyer  
[G11B 15/00](#) to Information storage based on relative  
movement  
[G11B 19/00](#) , between record carrier and  
transducer,  
[G11B 23/00](#) , involving handling record carriers  
for  
[G11B 25/00](#) recording or reproducing  
[H01F 41/06](#) Manufacturing coils for magnets,  
inductances,  
transformers, by winding  
[H01G 13/02](#) Machines for winding capacitors  
[H04N 1/00](#) Sheet handling not of interest apart from  
its  
use in systems for transmission or reproduction  
of pictures or patterns not varying in  
time, e.g. facsimile transmission

In this subclass:

- the groups relating to thin material, as defined under  
(i) of Note (3) below, are primarily intended to cover  
the handling of articles made of paper or cardboard, but  
also include the handling of articles made of other materials which have similar characteristics or present  
similar handling problems, e.g. articles made of sheet-  
plastics or leather;
- the groups relating to filamentary material (groups  
[B65H 49/00](#) onwards,) as defined in Note (3) below, cover only  
methods or devices of general application or interest.

In this subclass, the following terms or expressions are used with the meanings indicated:

- "handling" includes feeding, folding (other than in the  
manufacture of products), guiding, orientating, storing,  
unwinding, and winding;
- "thin material" includes:

(i) sheets, signatures, envelopes, blanks, and thin and thin piles thereof (hereinafter referred to as "articles"), and  
(ii) webs, tapes, and films, e.g. of paper, fabric, metal foil, or plastics;  
- "filamentary material" includes thread, wires, ropes, cables, and hoses;  
- "package" means a mass of filamentary material, formed by coiling, depositing, or winding, with or without a supporting core or former or an enclosing container or receptacle.  
{-"yarn" also covers similar filamentary materials.}

#### 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:

- [B65H 35/07](#) covered by [B65H 35/0006](#) -  
[B65H 77/00](#) covered by [B65H 23/00](#), [B65H 59/00](#)  
- [B65H 83/00](#), [B65H 83/02](#) covered by  
~~[B07C1/02C](#)~~[B07C 1/025](#), ~~[G07D1/00D](#)~~, [G07D 11/00](#)  
and s.gr - [B65H 85/00](#) covered by [G03B 27/62](#)  
, [G03B 27/6264](#), [G03B 27/6257](#)

#### **U B65H 9/00**

B65H 9/06

#### **Registering, e.g. orientating, articles; Devices therefor**

- Movable stops or gauges, e.g. rising and falling front stops [~~N:({(-[B65H 11/007](#) takes precedence-))}~~]

#### **U B65H 2301/00**

#### **Handling processes for sheets or webs**

U B65H 2301/40

- Type of handling process

U B65H 2301/41

- • Winding, unwinding

U B65H 2301/413

- • • Supporting web roll

U B65H 2301/4134

- • • • Both ends type arrangement

B65H 2301/41346

- • • • • separate elements engaging each end of the roll (*e.g. chuck*)(~~e.g. chuck~~)

U B65H 2301/417

- • • Handling or changing web rolls

U B65H 2301/4171

- • • • Handling web roll

B65H 2301/4175

- • • • • *involving cart* (~~N: involving cart: see B65H 2405/422 see B65H 2405/422~~)

U B65H 2301/44

- • Moving, forwarding, guiding material

U B65H 2301/443

- • • by acting on surface of handled material

U B65H 2301/4432

- • • • by means having an operating surface contacting only one face of the material, e.g. roller

U B65H 2301/44324

- • • • • Rollers

B65H 2301/443243

- • • • • • pivoting around an axis perpendicular to the plane of the material (*especially when web is running in a U-loop*)(~~especially when web is running in a U-loop~~)

#### **U B65H 2404/00**

#### **Parts for transporting or guiding the handled material**

U B65H 2404/10

- Rollers

U B65H 2404/18

- • composed of several layers

B65H 2404/182	<ul style="list-style-type: none"> <li>• • • with emery paper like coating (<i>gripping, anti-slip</i>)(<del>gripping, anti-slip</del>)</li> </ul>
<b>U B65H 2405/00</b>	<b>Parts for holding the handled material</b>
U B65H 2405/40	<ul style="list-style-type: none"> <li>• Holders, supports for rolls</li> </ul>
U B65H 2405/42	<ul style="list-style-type: none"> <li>• • Supports for rolls fully removable from the handling machine</li> </ul>
U B65H 2405/422	<ul style="list-style-type: none"> <li>• • • Trolley, cart, i.e. support movable on floor</li> </ul>
B65H 2405/4221	<ul style="list-style-type: none"> <li>• • • • for both full and empty (<i>or partial</i>) roll(<del>or partial</del>)roll</li> </ul>
<b>U B65H 2408/00</b>	<b>Specific machines</b>
U B65H 2408/20	<ul style="list-style-type: none"> <li>• for handling web(s)</li> </ul>
U B65H 2408/21	<ul style="list-style-type: none"> <li>• • Accumulators</li> </ul>
B65H 2408/216	<ul style="list-style-type: none"> <li>• • • roller with accumulated material wound around it (<i>scrap roll</i>)(<del>scrap-roll</del>)</li> </ul>

**Project: N/A (B66B)**

<b>U B66B 23/00</b>	<b>Component parts of escalators or moving walkways</b>
U B66B 23/14	<ul style="list-style-type: none"> <li>• Guiding means for carrying surfaces</li> </ul>
B66B 23/147	<ul style="list-style-type: none"> <li>• • <del>N</del>: {End portions, i.e. means for changing the direction of the carrying surface}}</li> </ul>

**Project: RP0025 (B66C)**

<b>U B66C 1/00</b>	<b>Load-engaging elements or devices attached to lifting or lowering gear of cranes or adapted for connection therewith for transmitting lifting forces to articles or groups of articles (fastening to cables or ropes <a href="#">F16G 11/00</a>)</b>
U B66C 1/10	<ul style="list-style-type: none"> <li>• by mechanical means</li> </ul>
U B66C 1/22	<ul style="list-style-type: none"> <li>• • Rigid members, e.g. L-shaped members, with parts engaging the under surface of the loads; Crane hooks</li> </ul>
U B66C 1/34	<ul style="list-style-type: none"> <li>• • • Crane hooks</li> </ul>
B66C 1/38	<ul style="list-style-type: none"> <li>• • • • adapted for automatic disengagement from loads on release of cable tensions (for parachutes <del>B64D</del>{<i>B64D 17/00</i>})</li> </ul>

**Project: N/A (B82Y)**

**B82Y**

**SPECIFIC USES OR APPLICATIONS OF NANO-STRUCTURES;  
MEASUREMENT OR ANALYSIS OF NANO-STRUCTURES; MANUFACTURE  
OR TREATMENT OF NANO-STRUCTURES**

NOTES

This subclass covers applications and aspects of nano-structures which are produced by any method, and is not restricted to those that are formed by manipulation of individual atoms or molecules.

Attention is drawn to the Note following the title of class [B82](#), which defines the meaning of the terms "nano-size", "nano-scale" and "nano-structure" in this subclass.

This subclass is intended to enable a comprehensive search of subject matter related to nano-structures by combination of classification symbols of this subclass with classification symbols from other subclasses. Therefore this subclass covers aspects of nano-structures that might also be entirely or partially covered elsewhere in the IPC.

This subclass is for secondary classification, i.e. obligatory supplementary classification of subject matter already classified as such in other classification places, e.g. :

~~B82B~~**B82B** Nanostructures formed by individual manipulation of atoms, molecules, or limited collections of atoms or molecules as discrete units; manufacture or treatment thereof  
[A61K 9/51](#) Nano - capsules for medicinal preparations  
[B05D 1/20](#) Langmuir-Blodgett films  
[C01B 31/02](#) Carbon nano-structures, e.g. bucky-balls, nanotubes, nanocoils, nano-doughnuts or nano-onions  
~~G01Q~~**G01Q** Scanning probe techniques  
[G02F 1/017](#) Optical quantum wells or boxes  
[H01F 10/32](#) Nano-structured thin magnetic films  
[H01F 41/30](#) Molecular beam epitaxy [MBE]  
[H01L 29/775](#) Quantum wire FETs

The classification symbols of this subclass are not listed first when assigned to patent documents.

In this subclass, multi-aspects classification is applied, so that aspects of subject matter that are covered by more than one of its groups should be classified in each of those groups.

## Project: N/A (C01B)

- U C01B 17/00 Sulfur; Compounds thereof**
- U C01B 17/64 • Thiosulfates; Dithionites; Polythionates
- C01B 17/66 • • Dithionites{or hydrosulfites ~~(S2O4 2-)~~(S2O4 2-)}
- U C01B 21/00 Nitrogen; Compounds thereof**
- C01B 21/06 • Binary compounds of nitrogen with metals, with silicon, or with boron,{or with carbon, i.e. nitrides; Compounds of nitrogen with more than one metal, silicon or boron} ( azides [C01B 21/08](#) )
- NOTES**
- Binary compounds, i.e. compounds of nitrogen with only one other element chosen from metals, silicon, boron or carbon, are classified in groups [C01B 21/06](#) or [C01B 21/0605](#) to [C01B 21/076](#) . Compounds of nitrogen with more than one element chosen from metals, silicon or boron are classified in [C01B 21/0602](#)
- Documents relating to several specific binary compounds are classified in ~~21/06~~[C01B 21/06](#) only and receive the indexing codes chosen from [C01B 21/0602](#) to [C01B 21/076](#) to identify the specific compounds
- U C01B 21/20 • Nitrogen oxides; Oxyacids of nitrogen; Salts thereof
- C01B 21/36 • • Nitrogen dioxide (~~NO<sub>2</sub>, N<sub>2</sub>O<sub>4</sub>~~)(~~NO<sub>2</sub>, N<sub>2</sub>O<sub>4</sub>~~){ [C01B 21/203](#) } , [C01B 21/26](#) , [C01B 21/30](#) take precedence )
- U C01B 31/00 Carbon; Compounds thereof**{ [C01B 6/00](#) } , [C01B 21/00](#) , [C01B 23/00](#) take precedence; percarbonates [C01B 15/10](#) ; carbon black [C09C 1/48](#) ; gas carbon production [C10B](#) )
- C01B 31/005 • {Carbon fluorides, e.g. ~~(CF)<sub>n</sub> or (C<sub>2</sub>F)<sub>n</sub>~~(CF)<sub>n</sub> or (C<sub>2</sub>F)<sub>n</sub> ( preparation of intercalation compounds of graphite with fluorine [C01B 31/0415](#) )}
- U C01B 33/00 Silicon; Compounds thereof**{ [C01B 6/00](#) } , [C01B 21/00](#) , [C01B 23/00](#) take precedence; persilicates [C01B 15/14](#) ; carbides [C01B 31/36](#) )
- U C01B 33/20 • Silicates( persilicates [C01B 15/14](#) ; { containing aluminium [C01B 33/26](#) } )
- U C01B 33/26 • • Aluminium-containing silicates,{i.e. silico-aluminates}
- U C01B 33/28 • • • Base exchange silicates, e.g. zeolites( regeneration [B01J 49/00](#) )



- U C01B 33/2807 . . . {Zeolitic silicoaluminates with a tridimensional crystalline structure possessing molecular sieve properties; Isomorphous compounds wherein a part of the aluminium ore of the silicon present may be replaced by other elements such as gallium, germanium, phosphorus; Preparation of zeolitic molecular sieves from molecular sieves of another type or from preformed reacting mixtures(not used, see subgroups)}
- C01B 33/2815 . . . . {*of type A (UNION CARBIDE trade name; corresponds to GRACE's types Z-12 or Z-12L)* ~~of type A(UNION CARBIDE trade name; corresponds to GRACE's types Z-12 or Z-12L)~~}
- C01B 33/2838 . . . . {*of faujasite type, or type X or Y (UNION CARBIDE trade names; correspond to GRACE's types Z-14 and Z-14HS, or type X or Y respectively)* ~~of faujasite-type correspond to GRACE's types Z-14 and Z-14HS, or type X or Y respectively~~}(UNION CARBIDE trade names; correspond to GRACE's types Z-14 and Z-14HS, respectively)}

**Project: N/A (C01G)**

- U C01G 49/00 **Compounds of iron**
- U C01G 49/0018 . {Mixed oxides or hydroxides, e.g. ferrites ([C01G 49/0009](#) takes precedence)}
- C01G 49/0081 . {containing iron in unusual valence state (*IV, V, VI, e.g. ferrates*) ~~(IV, V, VI, e.g. ferrates)~~}

**Project: N/A (C01P)**

- U C01P 2006/00 **Physical properties of inorganic compounds**
- NOTES
- Compounds having molecular sieve properties are classified in [C01B 37/00](#), [C01B 39/00](#).
- The following codes are only to be used for physical values deviating significantly from the average usual values.
- U C01P 2006/60 . Optical properties, e.g. expressed in CIELAB-values
- C01P 2006/62 . . L\* (*lightness axis*) ~~(lightness-axis)~~
- C01P 2006/63 . . a\* (*red-green axis*) ~~(red-green-axis)~~
- C01P 2006/64 . . b\* (*yellow-blue axis*) ~~(yellow-blue-axis)~~

**Project: N/A (C02F)**

- U C02F 1/00 **Treatment of water, waste water, or sewage( [C02F 3/00](#) to [C02F 9/00](#) take precedence )**
- U C02F 1/46 . by electrochemical methods
- U C02F 1/461 . by electrolysis
- U C02F 1/46104 . . {Devices therefor; Their operating or servicing}
- U C02F 1/4618 . . . {for producing "ionised" acidic or basic water}
- NOTE
- When classifying in group [C02F 1/4618](#) , details relating to the production of "ionised" acidic or basic water using electrolysis devices can be further indexed by using indexing codes chosen from [C02F 2001/46185](#) to [C02F 2001/46195](#)
- C02F 2001/46195 . . . . {characterised by the oxidation reduction potential [*ORP*] ~~(ORP)~~}
- U C02F 2201/00 **Apparatus for treatment of water, waste water or sewage**
- U C02F 2201/32 . Details relating to UV-irradiation devices
- C02F 2201/328 . . Having flow diverters (*baffles*) ~~(baffles)~~

- U C02F 2209/00** **Controlling or monitoring parameters in water treatment**  
 C02F 2209/16 · Total nitrogen ~~(~~tkN-N~~)~~(~~tkN-N~~)

**Project: N/A (C03B)****C03B****MANUFACTURE, SHAPING, OR SUPPLEMENTARY PROCESSES**WARNING

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

<a href="#">C03B 8/00</a>	covered by	<a href="#">C03B 19/00</a>	,
<a href="#">C03B 37/00</a>			
<a href="#">C03B 8/02</a>	covered by	<a href="#">C03B 19/1065</a>	,
<a href="#">C03B 19/12</a>	,	<del>C03B37/01B</del> <a href="#">C03B 37/011</a>	,
<a href="#">C03B 37/016</a>			
<a href="#">C03B 8/04</a>	covered by	<a href="#">C03B 19/106</a>	,
<a href="#">C03B 19/14</a>	,	<a href="#">C03B 37/014</a>	

**Project: N/A (C04B)**

- U C04B 2/00** **Lime, magnesia or dolomite( hydraulic lime cements [C04B 7/34](#) )**  
 C04B 2/02 · Lime{( obtaining Ca(OH)<sub>2</sub> otherwise than by simple slaking of quick lime [C01F 11/02](#) )}

**C04B 35/00**

Shaped ceramic products characterised by their composition ~~{(porous ceramic products [C04B 38/00](#); ceramic articles characterised by particular shape, see the relevant classes, e.g. linings for casting ladles, tundishes, cups or the like [B22D 41/02](#); ceramic substrates for microelectronic semi-conductors [H01L 23/15](#))}~~; Ceramics compositions ~~<explanation>containing free metal bonded to carbides, diamond, oxides, borides, nitrides, silicides, e.g. cermets, or other metal compounds, e.g. oxynitrides or sulfides other than as macroscopic reinforcing agents [C22C](#)(containing free metal bonded to carbides, diamond, oxides, borides, nitrides, silicides, e.g. cermets, or other metal compounds, e.g. oxynitrides or sulfides other than as macroscopic reinforcing agents [C22C](#); {shaping of ceramics [B28B](#)})~~; ~~{shaping of ceramics [B28B](#)}~~</explanation>; Processing powders of inorganic compounds preparatory to the manufacturing of ceramic products ~~{(Chemical preparation of powders of inorganic compounds [C01](#); Chemical preparation of powders of inorganic compounds [C01](#);~~ infiltration of sintered ceramic preforms with molten metal [C04B 41/51](#)-)}

**NOTES**

In this group, in the absence of an indication to the contrary, compositions are classified according to the constituent present in the highest proportion by weight.

In this group, magnesium is considered as an alkaline earth metal.

In this group, a composite is considered as a sintered material containing more than one phase, where the secondary phases are not resulting from sintering aids

In this group, fine ceramics are considered as products having a polycrystalline, fine-grained microstructure, e.g. of dimensions below 100 micrometers.

The production of ceramic powder is classified in this group in so far as it relates to the preparation of powder with specific characteristics.

In groups [C04B 35/00](#) to [C04B 35/83](#) , from 01-01-2005 onwards, the indexing codes of groups [C04B 2235/00](#) to [C04B 2235/9692](#) are used to identify aspects relating to ceramic starting mixtures and sintered ceramic products

**WARNING**

Attention is drawn to WARNINGS 3 and 4 after subclass title

**U C04B 37/00**

**Joining burned ceramic articles with other burned ceramic articles or other articles by heating(laminated products [B32B](#), [E04C](#);** { soldering and welding materials [B23K 35/24](#) } )

**NOTE**

In groups [C04B 37/00](#) to [C04B 37/04](#) , from 01-10-2008 onwards, features relating to interlayers, additional compositional information or further processing are indexed with codes chosen from [C04B 2237/00](#) to **[C04B2237/70R](#)**

**WARNING**

Groups [C04B 37/005](#) , [C04B 37/006](#) , [C04B 37/025](#) and [C04B 37/026](#) are no longer used for classification as from September 1, 2008. Aspects relating to interlayers are from that date indexed by codes chosen from [C04B 2237/02](#) to [C04B 2237/16](#)

**C04B 37/04**

- with articles made from glass

**WARNING**

**~~N0812~~**

Groups [C04B 37/042](#), [C04B 37/045](#) and [C04B 37/047](#) are not complete, see also [C04B 37/04](#)

- U C04B 38/00** Porous mortars, concrete, artificial stone or ceramic ware; Preparation thereof( treating slag with gases or gas generating material [C04B 5/06](#) ; { expanded graphite [C04B 35/536](#) })

**NOTE**

Porous materials based on fibres, i.e. materials where the porosity is due to the spaces between the fibres, are not classified in this maingroup, but in one or more of the other relevant maingroups of this subclass, e.g. in [C04B 30/02](#)

- U C04B 38/0006** • {Honeycomb structures( from one or more corrugated sheets by winding or stocking [C04B 38/0083](#) )}
- C04B 38/0012** • • {characterised by the material used for sealing or plugging (*some of the channels of the honeycombs*)}~~{some of the channels of the honeycombs}~~
- U C04B 38/0016** • • {assembled from subunits}
- C04B 38/0019** • • • {characterised by the material used for joining separate subunits}~~{ Note: When classifying in group C04B 38/0019 , classification is also made in C04B 28/00 or C04B 37/00 to give detailed information about the composition of the joining material }~~

**NOTE**

*{ When classifying in group [C04B 38/0019](#) , classification is also made in [C04B 28/00](#) or [C04B 37/00](#) to give detailed information about the composition of the joining material }*

**Project: N/A (C05)****C05**

**FERTILISERS; MANUFACTURE THEREOF** (processes or devices for granulating materials, in general [B01J 2/00](#); soil-conditioning or soil-stabilising materials [C09K 17/00](#))

**NOTES**

An ingredient in a mixture of fertilisers, or a single fertiliser which contains more than one of the chemical elements on which the subdivision into subclasses is based, is classified only in the first of the appropriate subclasses. Thus, a nitrophosphate or an ammoniated superphosphate is classified in [C05B](#) but not in [C05C](#), magnesium phosphate is classified in [C05B](#) but not in [C05D](#), and calcium cyanamide in [C05C](#) but not in [C05D](#).

In this class, mixtures of fertilizers are classified in the first appropriate place. After the notation of the appropriate classification symbol and separated therefrom by a + sign, notations concerning the ingredients of the mixture, not covered by the chosen classification symbol, may be added. These notations are selected from class [C05](#) and are presented in the following way, e.g. [C05B 1/02](#)+~~[D1/02](#)~~[C05D 1/02](#)+~~[D9/02](#)~~[C05D 9/02](#)

**Project: N/A (C05F)**

- U C05F 17/00** Preparation of fertilisers characterised by the composting step
- C05F 17/0027** • {Multi-step composting process, (*e.g. anaerobic-aerobic*)}~~{e.g. anaerobic-aerobic}}~~

**Project: N/A (C05G)****C05G**

**MIXTURES OF FERTILISERS COVERED INDIVIDUALLY BY DIFFERENT SUBCLASSES OF CLASS [C05](#); MIXTURES OF ONE OR MORE FERTILISERS WITH MATERIALS NOT HAVING A SPECIFIC FERTILISING ACTIVITY, e.g. PESTICIDES, SOIL-CONDITIONERS, WETTING AGENTS (organic fertilisers containing added bacterial cultures, mycelia, or the like [C05F 11/08](#); organic fertilisers containing plant vitamins or hormones [C05F 11/10](#)); FERTILISERS CHARACTERISED BY THEIR FORM**

**NOTES**

This subclass covers mixtures of fertilisers with soil-conditioning or soil-stabilising materials characterised by their fertilising activity.

This subclass does not cover mixtures of fertilisers with soil-conditioning or soil-stabilising materials characterised by their soil-conditioning or soil-stabilising activity, which are covered by group [C09K 17/00](#).

**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 (see internal note after the title of class [C05](#)):

[C05G 1/02](#)–[C05G 1/10](#) covered by [C05](#)

[C05G 3/10](#) covered by [C05G 3/0088](#)

[C05G 5/00](#) covered by [C05G3/00B](#) [C05G 3/0005](#)

**Project: N/A (C06B)****U C06B 23/00**

**Compositions characterised by non-explosive or non-thermic constituents {(in combination with specific explosives [C06B 25/20](#), [C06B 25/26](#), [C06B 29/04](#), [C06B 29/08](#), [C06B 31/06](#), [C06B 31/40](#), [C06B 33/02](#))}**

## C06B 23/001

- {Fillers, gelling and thickening agents (*e.g. fibres*), *absorbents for nitroglycerine* (*e.g. fibres*), *absorbents for nitroglycerine* (binders, plasticisers for propellants [C06B 45/10](#); crosslinking or curing agents [C06B 45/10](#))}

**Project: N/A (C06D)****C06D**

**MEANS FOR GENERATING SMOKE OR MIST; GAS-ATTACK COMPOSITIONS; GENERATION OF GAS FOR BLASTING OR PROPULSION (*CHEMICAL PART*) (*CHEMICAL PART*) (fuels [C10](#))**

**C06D 3/00**

**Generation of smoke or mist (*chemical part*) (*chemical part*) (compositions used as biocides, pest repellants or attractants, or plant growth regulators [A01N](#), e.g. [A01N 25/18](#))**

**Project: N/A (C07C)****U C07C 51/00**

**Preparation of carboxylic acids or their salts, halides or anhydrides (of acids by hydrolysis of oils, fats or waxes [C11C](#))**

## U C07C 51/41

- Preparation of salts of carboxylic acids (preparation of soap [C11D](#)) {[C07C 51/093](#) to [C07C 51/34](#) take precedence}

## C07C 51/416

- {Henkel reaction and related reactions, i.e. rearrangement of carboxylate salt groups linked to six-membered aromatic rings, in the absence or in the presence of CO or CO<sub>2</sub>, (*e.g. preparation of terepholates from benzoates*) (*e.g. preparation of terepholates from benzoates*); no additional classification for the subsequent hydrolysis of the salt groups has to be given}

**U C07C 2102/00**

**Systems containing two condensed rings**

## U C07C 2102/02

- The rings having only two atoms in common

- U C07C 2102/04
  - • One of the condensed rings being a six-membered aromatic ring
- C07C 2102/08
  - • • The other ring being five-membered (*e.g. indane*)(~~e.g. indane~~)
- C07C 2102/10
  - • • The other ring being six-membered (*e.d. tetraline*)(~~e.d. tetraline~~)
- U C07C 2102/14
  - • All rings being cycloaliphatic
- C07C 2102/22
  - • • The ring system contains eight carbon atoms (*e.g. pentalene*)(~~e.g. pentalene~~)
- C07C 2102/24
  - • • The ring system contains nine carbon atoms (*e.g. perhydroindane*)(~~e.g. perhydroindane~~)

## U C07C 2529/00 Catalysts comprising molecular sieves

### NOTE

The indexing codes of group [C07C 2529/00](#) are associated with groups [C07C 1/00](#) to [C07C 6/00](#).

- U C07C 2529/82
  - Phosphates
- C07C 2529/83
  - • Aluminophosphates (*APO compounds*)(~~APO compounds~~)
- U C07C 2529/84
  - • Aluminophosphates containing other elements, e.g. metals, boron
- C07C 2529/85
  - • • Silicoaluminophosphates (*SAPO compounds*)(~~SAPO compounds~~)

## Project: N/A (C07D)

## U C07D 241/00 Heterocyclic compounds containing 1,4-diazine or hydrogenated 1,4-diazine rings

### NOTE

Piperazines with only hydrogen atoms directly attached to ring carbon atoms are classified in group [C07D 295/00](#)

- U C07D 241/02
  - not condensed with other rings
- U C07D 241/10
  - • having three double bonds between ring members or between ring members and non-ring members
- U C07D 241/14
  - • • with hetero atoms or with carbon atoms having three bonds to hetero atoms with at the most one bond to halogen, e.g. ester or nitrile radicals, directly attached to ring carbon atoms
- U C07D 241/24
  - • • • Carbon atoms having three bonds to hetero atoms with at the most one bond to halogen, e.g. ester or nitrile radicals
- U C07D 241/26
  - • • • • with nitrogen atoms directly attached to ring carbon atoms
- U C07D 241/28
  - • • • • in which said hetero-bound carbon atoms have double bonds to oxygen, sulfur or nitrogen atoms
- U C07D 241/30
  - • • • • in which said hetero-bound carbon atoms are part of a substructure -C(=X)-X-C(=X)-X- in which X is an oxygen or sulfur atom or an imino radical, e.g. imidoylguanidines
- C07D 241/34
  - • • • • • (~~Amino-pyrazine-carbonamido~~)(*Amino-pyrazine carbonamido*)  
guanidines [2,5]

## Project: N/A (C07F)

## U C07F 5/00 Compounds containing elements of the 3rd Group of the Periodic System

- U C07F 5/06
  - Aluminium compounds
- U C07F 5/061
  - • {with C-aluminium linkage}
- C07F 5/066
  - • • {compounds with Al linked to an element other than Al, C, H or halogen  
(*this includes Al-cyanide linkage*)}(~~this includes Al-cyanide linkage~~)

## U C07F 7/00 Compounds containing elements of the 4th Group of the Periodic System


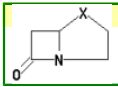

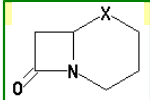



- U C07F 7/02      • Silicon compounds
- U C07F 7/08      • • Compounds having one or more C-Si linkages
- U C07F 7/0834    • • • {Compounds having one or more O-Si linkage (for compounds with C-O-Si linkages see [C07F 7/18](#))}
- U C07F 7/0838    • • • • {Compounds with one or more Si-O-Si sequences}
- U C07F 7/0872    • • • • • {Preparation and treatment thereof}
- U C07F 7/0876    • • • • • {Reactions involving the formation of bonds to a Si atom of a Si-O-Si sequence other than a bond of the Si-O-Si linkage}
- C07F 7/0885      • • • • • • { Si-OX bond (*X = C or H*)}(*X = C or H*)}
- C07F 7/0887      • • • • • • {Si-Q bond (*Q different from O, C or halogen*)}(*Q different from O, C or halogen*)}
- U C07F 7/18      • • • Compounds having one or more C-Si linkages as well as one or more C-O-Si linkages
- U C07F 7/1804    • • • • {Compounds having Si-O-C linkages (Si-O-acyl linkages [C07F 7/1896](#))}
- C07F 7/1868    • • • • • {having (C1)a-Si-(OC2)b linkages, a and b each being  $\geq 1$  and a + b  $\neq 4$  (*C1 and C2 being hydrocarbon or substituted hydrocarbon radicals*)}(*C1 and C2 being hydrocarbon or substituted hydrocarbon radicals*)}
- 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 9/06      • • without P-C bonds
- U C07F 9/08      • • • Esters of oxyacids of phosphorus {([C07F 9/062](#) takes precedence)}
- U C07F 9/09      • • • • Esters of phosphoric acids
- U C07F 9/095    • • • • • { Compounds containing the structure P(=O)-O-acyl, P(=O)-O-heteroatom, P(=O)-O-CN}
- C07F 9/096      • • • • • • { Compounds containing the structure P(=O)-O-C(=X)- (*X = O, S, Se*)}(*X = O, S, Se*)}
- U C07F 9/141    • • • • Esters of phosphorous acids
- U C07F 9/1415    • • • • • { Compounds containing the structure P-O-acyl, P-O-heteroatom, P-O-CN}
- C07F 9/1417    • • • • • • { Compounds containing the structure P-O-C(=X)- (*X = O, S, Se*)}(*X = O, S, Se*)}
- U C07F 9/16      • • • Esters of thiophosphoric acids or thiophosphorous acids
- U C07F 9/165    • • • • Esters of thiophosphoric acids
- C07F 9/1654    • • • • • { Compounds containing the structure P(=X)<sub>n</sub>-X-acyl, P(=X)<sub>n</sub>-X-heteroatom, P(=X)<sub>n</sub>-X-CN (*X = O, S, Se (X = O, S, Se; n = 0, 1); n = 0, 1*)}
- C07F 9/1655    • • • • • • { Compounds containing the structure P(=X)<sub>n</sub>-S-(S)<sub>x</sub>- (*X = O, S, Se (X = O, S, Se; n = 0, 1; x  $\geq 1$ ); n = 0, 1; x  $\geq 1$ )*)}
- C07F 9/1656    • • • • • • { Compounds containing the structure P(=X)<sub>n</sub>-X-C(=X)- (*X = O, S, Se (X = O, S, Se; n = 0, 1); n = 0, 1*)}
- C07F 9/1657    • • • • • • { Compounds containing the structure P(=X)<sub>n</sub>-X-N (*X = O, S, Se (X = O, S, Se; n = 0, 1); n = 0, 1*)}
- U C07F 9/22      • • • Amides of acids of phosphorus
- U C07F 9/24      • • • • Esteramides
- U C07F 9/2404    • • • • • {the ester moiety containing a substituent or a structure which is considered as characteristic}

- C07F 9/2425 . . . . . { containing the structure (RX)(RR'N)P(=Y)-Z-(C)n-Z'-P(=Y)(XR)<sub>2</sub> (X = O, S, NR(X = O, S, NR; Y = O, S, electron pair; Z = O, S; Z' = O, S)); Y = O, S, electron pair; Z = O, S; Z' = O, S)}
- C07F 9/2433 . . . . . { Compounds containing the structure N-P(=X)n-X-acyl, N-P(=X)n-X-heteroatom, N-P(=X)n-X-CN (X = O, S, Se(X = O, S, Se; n = 0, 1)); n = 0, 1)}
- C07F 9/2437 . . . . . { Compounds containing the structure N-P(=X)n-S-(S)x- (X = O, S, Se(X = O, S, Se; n = 0, 1; x >= 1)); n = 0, 1; x >= 1)}
- C07F 9/2441 . . . . . { containing the structure N-P(=X)n-X-C(=X) (X = O, S, Se(X = O, S, Se; n = 0, 1)); n = 0, 1)}
- C07F 9/2445 . . . . . { containing the structure N-P(=X)n-X-N (X = O, S, Se(X = O, S, Se; n = 0, 1)); n = 0, 1)}
- C07F 9/245 . . . . . { containing the structure N-P(=X)n-X-P (X = O, S, Se(X = O, S, Se; n = 0, 1)); n = 0, 1)}
- U C07F 9/2454 . . . . . {the amide moiety containing a substituent or a structure which is considered as characteristic}
- C07F 9/247 . . . . . { of aromatic amines (N-C aromatic linkage)}(N-C aromatic linkage)}
- C07F 9/2479 . . . . . { Compounds containing the structure P(=X)n-N-acyl, P(=X)n-N-heteroatom, P(=X)n-N-CN (X = O, S, Se(X = O, S, Se; n = 0, 1)); n = 0, 1)}
- C07F 9/2483 . . . . . { containing the structure P(=X)n-N-S (X = O, S, Se(X = O, S, Se; n = 0, 1)); n = 0, 1)}
- C07F 9/2487 . . . . . { containing the structure P(=X)n-N-C(=X) (X = O, S, Se(X = O, S, Se; n = 0, 1)); n = 0, 1)}
- C07F 9/2491 . . . . . { containing the structure P(=X)n-N-N (X = O, S, Se(X = O, S, Se; n = 0, 1)); n = 0, 1)}
- C07F 9/2495 . . . . . { containing the structure P(=X)n-N-P (X = O, S, Se(X = O, S, Se; n = 0, 1)); n = 0, 1)}
- U C07F 9/28 . . . . . with one or more P-C bonds
- C07F 9/30 . . . . . Phosphinic acids R<sub>2</sub>P(=O)(OH); Thiophosphinic acids { i.e. R<sub>2</sub>P(=X)(XH) (X = S, Se)}(X = S, Se)}
- C07F 9/304 . . . . . { Aromatic acids (P-C aromatic linkage)}(P-C aromatic linkage)}
- C07F 9/306 . . . . . { Arylalkanephosphinic acids, e.g. Ar-(CH<sub>2</sub>)<sub>n</sub>-P(=X)(R)(XH), (X = O, S, Se(X = O, S, Se; n >= 1)); n >= 1)}
- C07F 9/307 . . . . . { Acids containing the structure -C(=X)-P(=X)(R)(XH) or NC-P(=X)(R)(XH), (X = O, S, Se)}(X = O, S, Se)}
- U C07F 9/32 . . . . . Esters thereof
- U C07F 9/3205 . . . . . {the acid moiety containing a substituent or a structure which is considered as characteristic}
- C07F 9/3229 . . . . . { Esters of aromatic acids (P-C aromatic linkage)}(P-C aromatic linkage)}
- C07F 9/3247 . . . . . { Esters of acids containing the structure -C(=X)-P(=X)(R)(XH) or NC-P(=X)(R)(XH), (X = O, S, Se)}(X = O, S, Se)}
- C07F 9/3252 . . . . . { containing the structure -C(=X)-P(=X)(R)(XR), (X = O, S, Se)}(X = O, S, Se)}
- U C07F 9/3258 . . . . . {the ester moiety containing a substituent or a structure which is considered as characteristic}
- C07F 9/3294 . . . . . { Compounds containing the structure R<sub>2</sub>P(=X)-X-acyl, R<sub>2</sub>P(=X)-X-heteroatom, R<sub>2</sub>P(=X)-X-CN (X = O, S, Se)}(X = O, S, Se)}

	C07F 9/38	<ul style="list-style-type: none"> <li>Phosphonic acids <math>RP(=O)(OH)_2</math>; Thiophosphonic acids { i.e. <math>RP(=X)(XH)_2</math> (<math>X = S, Se</math>)} (<math>X = S, Se</math>)</li> </ul>
U	C07F 9/3804	<ul style="list-style-type: none"> <li>{not used, see subgroups}</li> </ul>
U	C07F 9/3808	<ul style="list-style-type: none"> <li>{ Acyclic saturated acids which can have further substituents on alkyl}</li> </ul>
	C07F 9/3817	<ul style="list-style-type: none"> <li>{ Acids containing the structure <math>(RX)_2P(=X)-alk-N...P</math> (<math>X = O, S, Se</math>)} (<math>X = O, S, Se</math>)</li> </ul>
	C07F 9/3834	<ul style="list-style-type: none"> <li>{ Aromatic acids (<i>P-C aromatic linkage</i>)} (<i>P-C aromatic linkage</i>)</li> </ul>
U	C07F 9/3839	<ul style="list-style-type: none"> <li>{ Polyphosphonic acids}</li> </ul>
	C07F 9/3873	<ul style="list-style-type: none"> <li>{ containing nitrogen substituents e.g. <math>N....H</math> or <math>N</math>-hydrocarbon rest which can be substituted by halogen or nitro(so), <math>N....O</math>, <math>N....S</math>, <math>N....C(=X)-</math> (<math>X = O, S</math>), <math>N....N</math>, <math>N...C(=X)...N</math> (<math>X = O, S</math>)} (<math>X = O, S</math>); <math>N....N</math>, <math>N...C(=X)...N</math> (<math>X = O, S</math>)</li> </ul>
	C07F 9/3886	<ul style="list-style-type: none"> <li>{ Acids containing the structure <math>-C(=X)-P(=X)(XH)_2</math> or <math>NC-P(=X)(XH)_2</math>, (<math>X = O, S, Se</math>)} (<math>X = O, S, Se</math>)</li> </ul>
	C07F 9/3891	<ul style="list-style-type: none"> <li>{ Acids containing the structure <math>-C(=X)-P(=X)(XH)_2</math>, (<math>X = O, S, Se</math>)} (<math>X = O, S, Se</math>)</li> </ul>
U	C07F 9/40	<ul style="list-style-type: none"> <li>Esters thereof</li> </ul>
U	C07F 9/4003	<ul style="list-style-type: none"> <li>{the acid moiety containing a substituent or a structure which is considered as characteristic}</li> </ul>
U	C07F 9/4006	<ul style="list-style-type: none"> <li>{ Esters of acyclic acids which can have further substituents on alkyl}</li> </ul>
	C07F 9/4009	<ul style="list-style-type: none"> <li>{ Esters containing the structure <math>(RX)_2P(=X)-alk-N...P</math> (<math>X = O, S, Se</math>)} (<math>X = O, S, Se</math>)</li> </ul>
	C07F 9/4021	<ul style="list-style-type: none"> <li>{Esters of aromatic acids (<i>P-C aromatic linkage</i>)} (<i>P-C aromatic linkage</i>)</li> </ul>
U	C07F 9/4025	<ul style="list-style-type: none"> <li>{Esters of poly(thio)phosphonic acids}</li> </ul>
	C07F 9/405	<ul style="list-style-type: none"> <li>{ containing nitrogen substituents e.g. <math>N....H</math> or <math>N</math>-hydrocarbon rest which can be substituted by halogen or nitro(so), <math>N....O</math>, <math>N....S</math>, <math>N....C(=X)-</math> (<math>X = O, S</math>), <math>N....N</math>, <math>N...C(=X)...N</math> (<math>X = O, S</math>)} (<math>X = O, S</math>); <math>N....N</math>, <math>N...C(=X)...N</math> (<math>X = O, S</math>)</li> </ul>
U	C07F 9/4056	<ul style="list-style-type: none"> <li>{ Esters of arylalkanephosphonic acids (<a href="#">C07F 9/4025</a> takes precedence)}</li> </ul>
	C07F 9/4059	<ul style="list-style-type: none"> <li>{ <del>Compounds containing the structure <math>(RY)_2P(=X)-CH_2</math></del> <math>n-C(=O)-(CH_2)_m-Ar</math>, (<math>X, Y = O, S, Se</math>) (<math>X, Y = O, S, Se</math>; <math>n \geq 1, m \geq 0</math>)</li> </ul>
	C07F 9/4062	<ul style="list-style-type: none"> <li>{ Esters of acids containing the structure <math>-C(=X)-P(=X)(XR)_2</math> or <math>NC-P(=X)(XR)_2</math>, (<math>X = O, S, Se</math>)} (<math>X = O, S, Se</math>)</li> </ul>
	C07F 9/4065	<ul style="list-style-type: none"> <li>{ Esters of acids containing the structure <math>-C(=X)-P(=X)(XR)_2</math>, (<math>X = O, S, Se</math>)} (<math>X = O, S, Se</math>)</li> </ul>
U	C07F 9/4071	<ul style="list-style-type: none"> <li>{the ester moiety containing a substituent or a structure which is considered as characteristic}</li> </ul>
	C07F 9/409	<ul style="list-style-type: none"> <li>{ Compounds containing the structure <math>P(=X)-X-acyl</math>, <math>P(=X)-X</math>-heteroatom, <math>P(=X)-X-CN</math> (<math>X = O, S, Se</math>)} (<math>X = O, S, Se</math>)</li> </ul>
	C07F 9/4093	<ul style="list-style-type: none"> <li>{ Compounds containing the structure <math>P(=X)-X-C(=X)-</math> (<math>X = O, S, Se</math>)} (<math>X = O, S, Se</math>)</li> </ul>
	C07F 9/4096	<ul style="list-style-type: none"> <li>{ Compounds containing the structure <math>P(=X)-X-N</math> (<math>X = O, S, Se</math>)} (<math>X = O, S, Se</math>)</li> </ul>
U	C07F 9/44	<ul style="list-style-type: none"> <li>Amides thereof</li> </ul>
U	C07F 9/4403	<ul style="list-style-type: none"> <li>{the acid moiety containing a substituent or a structure which is considered as characteristic}</li> </ul>

C07F 9/4419	. . . . . {Amides of aromatic acids ( <i>P-C aromatic linkage</i> )}( <i>P-C aromatic linkage</i> )
C07F 9/443	. . . . . { Amides of acids containing the structure -C(=Y)-P(=X)(XR)-N or NC-(P(=X)(XR)-N )}( <i>P(=X)(XR)-N (X, Y = O, S)</i> )
U C07F 9/4434	. . . . . {the ester moiety containing a substituent or a structure which is considered as characteristic}
C07F 9/4457	. . . . . { Compounds containing the structure C-P(=X)(X-acyl)-N, C-P(=X)(X-heteroatom)-N or C-P(=X)(X-CN)-N ( <i>X, Y = O, S</i> )}( <i>X, Y = O, S</i> )
U C07F 9/4461	. . . . . {the amide moiety containing a substituent or a structure which is considered as characteristic}
C07F 9/4476	. . . . . {of aromatic amines ( <i>N-C aromatic linkage</i> )}( <i>N-C aromatic linkage</i> )
C07F 9/4484	. . . . . { Compounds containing the structure C-P(=X)(N-acyl)-X, C-P(=X)(N-heteroatom)-X or C-P(=X)(N-CN)-X ( <i>X = O, S, Se</i> )}( <i>X = O, S, Se</i> )
C07F 9/4488	. . . . . { Compounds containing the structure P(=X)(N-S-) ( <i>X = O, S, Se</i> )}( <i>X = O, S, Se</i> )
C07F 9/4492	. . . . . { Compounds containing the structure P(=X)( <i>N-C(=X)-</i> ) ( <i>X = O, S, Se</i> )}( <i>N-C(=X)- (X = O, S, Se)</i> )
C07F 9/4496	. . . . . { Compounds containing the structure P(=X)(N-N-) ( <i>X = O, S, Se</i> )}( <i>X = O, S, Se</i> )
U C07F 9/48	. . . Phosphonous acids RP(OH) <sub>2</sub> ; Thiophosphonous acids { including RHP(=O)(OH); Derivatives thereof}
U C07F 9/4808	. . . {the acid moiety containing a substituent or structure which is considered as characteristic}
C07F 9/4841	. . . . . { Aromatic acids or derivatives ( <i>P-C aromatic linkage</i> )}( <i>P-C aromatic linkage</i> )
C07F 9/4858	. . . . . { Acids or derivatives containing the structure -C(=X)-P(XR) <sub>2</sub> or NC-P(XR) <sub>2</sub> ( <i>X = O, S, Se</i> )}( <i>X = O, S, Se</i> )
C07F 9/4883	. . . . [Amides or esteramides thereof, e.g. RP(NR' <sub>2</sub> ) <sub>2</sub> or RP(XR')(NR' <sub>2</sub> ) ( <i>X = O, S</i> )}( <i>X = O, S</i> )
C07F 9/4891	. . . . { Monohalide derivatives RP ( <i>XR'</i> ) ( <i>Hal</i> ) ( <i>X = O, S, N</i> ) ( <i>XR'</i> )( <i>Hal</i> ) ( <i>X = O, S, N</i> )}( <i>di-halide derivatives C07F 9/52</i> )
U C07F 9/50	. . . Organo-phosphines
C07F 9/5022	. . . . { Aromatic phosphines ( <i>P-C aromatic linkage</i> )}( <i>P-C aromatic linkage</i> )
U C07F 9/53	. . . . Organo-phosphine oxides; Organo-phosphine thioxides
C07F 9/5325	. . . . { Aromatic phosphine oxides or thioxides ( <i>P-C aromatic linkage</i> )}( <i>P-C aromatic linkage</i> )
C07F 9/5337	. . . . { Phosphine oxides or thioxides containing the structure -C(=X)-P(=X) or NC-P(=X) ( <i>X = O, S, Se</i> )}( <i>X = O, S, Se</i> )
U C07F 9/54	. . . Quarternary phosphonium compounds
C07F 9/5442	. . . . { Aromatic phosphonium compounds ( <i>P-C aromatic linkage</i> )}( <i>P-C aromatic linkage</i> )
U C07F 9/547	. . Heterocyclic compounds, e.g. containing phosphorus as a ring hetero atom
U C07F 9/553	. . . having one nitrogen atom as the only ring hetero atom
C07F 9/5532	. . . . {Seven-( <i>or more</i> ) <i>membered rings</i> }( <i>or more</i> ) <i>membered rings</i> }
C07F 9/5537	. . . . { the heteroring containing the structure -C(=O)-N-C(=O)- ( <i>both carbon atoms belong to the heteroring</i> )}( <i>both carbon atoms belong to the heteroring</i> )
U C07F 9/655	. . . having oxygen atoms, with or without sulfur, selenium, or tellurium atoms, as the only ring hetero atoms

- C07F 9/65525 . . . {the oxygen atom being part of a seven-**(or more) membered ring**}{~~or more~~membered-ring}
- U C07F 9/6553 . . . having sulfur atoms, with or without selenium or tellurium atoms, as the only ring hetero atoms
- C07F 9/655381 . . . {the sulfur atom being part of a seven-**(or more) membered ring**}{~~or more~~membered-ring}
- U C07F 9/6561 . . . containing systems of two or more relevant hetero rings condensed among themselves or condensed with a common carbocyclic ring or ring system, with or without other non-condensed hetero rings
- C07F 9/65611 . . . ~~{containing the ring system~~
- 
- ~~(X = CH<sub>2</sub>, O, S, NH)~~**{ containing the ring system**  (X = CH<sub>2</sub>, O, S, NH) optionally with an additional double bond and/or substituents e.g. penicillins and analogs
- C07F 9/65613 . . . ~~{containing the ring system~~
- 
- ~~(X = CH<sub>2</sub>, O, S, NH)~~**{ containing the ring system**  (X = CH<sub>2</sub>, O, S, NH) optionally with an additional double bond and/or substituents e.g. cephalosporins and analogs
- U C07F 9/6564 . . . having phosphorus atoms, with or without nitrogen, oxygen, sulfur, selenium or tellurium atoms, as ring hetero atoms
- U C07F 9/6571 . . . having phosphorus and oxygen atoms as the only ring hetero atoms
- U C07F 9/657163 . . . {the ring phosphorus atom being bound to at least one carbon atom}
- C07F 9/657172 . . . { the ring phosphorus atom and one oxygen atom being part of a (thio)phosphinic acid ester:  **(X = O, S)**~~{X = O, S}}~~
- U C07F 9/6581 . . . having phosphorus and nitrogen atoms with or without oxygen or sulfur atoms, as ring hetero atoms
- C07F 9/659 . . . having three phosphorus atoms as ring hetero atoms in the same ring **{{(N=C07F 9/65812 takes precedence)}}**

**Project: N/A (C07J)**

- U C07J 15/00 **Stereochemically pure steroids containing carbon, hydrogen, halogen or oxygen having a partially or totally inverted skeleton, e.g. retrosteroids, L-isomers**
- C07J 15/005 . {Retrosteroids **(9 beta 10 alfa)**}(9-beta-10-alfa)}

**Project: N/A (C07K)**

- U C07K 14/00 **Peptides having more than 20 amino acids; Gastrins; Somatostatins; Melanotropins; Derivatives thereof**

C07K 14/005

- from viruses

**NOTE**

When classifying in this group, subject-matter related to viral proteins shall be classified by the symbol [C07K 14/005](#) together with (a number of) appropriate indexing codes out of ~~M12N710~~[C12N 2710/00](#)-~~M12N795~~[C12N 2795/00](#)

**WARNING**

1. From March 15, 2012 groups [C07K 14/01](#) - [C07K 14/19](#) and subgroups thereof are no longer used for the classification of new documents. 2. Reclassification of the back-file follows the principle outlined in the Note here above

U C07K 14/81

- Protease inhibitors

C07K 14/8103

- • {Exopeptidase ([E.C. 3.4.11-19](#)) inhibitors}(~~E.C. 3.4.11-19~~)inhibitors}

C07K 14/8107

- • {Endopeptidase ([E.C. 3.4.21-99](#)) inhibitors}(~~E.C. 3.4.21-99~~)inhibitors}

C07K 14/811

- • • {Serine protease ([E.C. 3.4.21](#)) inhibitors}(~~E.C. 3.4.21~~)inhibitors}

C07K 14/8139

- • • {~~Cysteine protease~~(~~E.C. 3.4.22~~){[Cysteine protease \(E.C. 3.4.22\)](#) inhibitors, e.g. cystatin}

C07K 14/8142

- • • {~~Aspartate protease~~(~~E.C. 3.4.23~~){[Aspartate protease \(E.C. 3.4.23\)](#) inhibitors, e.g. HIV protease inhibitors}

C07K 14/8146

- • • {~~Metalloprotease~~(~~E.C. 3.4.24~~){[Metalloprotease \(E.C. 3.4.24\)](#) inhibitors, e.g. tissue inhibitor of metallo proteinase, TIMP}

U C07K 2319/00

**Fusion polypeptide**

U C07K 2319/90

- containing a motif for post-translational modification

U C07K 2319/91

- • containing a motif for glycosylation

C07K 2319/912

- • • containing a GPI ([phosphatidyl-inositol glycane](#)) anchor(~~phosphatidyl-inositol-glycane~~)anchor

**Project: N/A (C08B)**

C08B

**POLYSACCHARIDES; DERIVATIVES THEREOF**( polysaccharides containing less than six saccharide radicals attached to each other by glycosidic linkages [C07H](#); fermentation or enzyme-using processes [C12P 19/00](#) ; sugar industry [C13](#); production of cellulose [D21](#) )

**WARNING**~~[1202]~~

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

-	<a href="#">C08B 37/06</a>	covered by	<a href="#">C08B 37/0045</a>	
-	<a href="#">C08B 37/10</a>	covered by	<a href="#">C08B 37/0075</a>	-
	<a href="#">C08B 37/12</a>	covered by	<a href="#">C08B 37/0039</a>	

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

C08F 36/00

**Homopolymers and copolymers of compounds having one or more unsaturated aliphatic radicals, at least one having two or more carbon-to-carbon double bonds( [C08F 32/00](#) takes precedence )**

**NOTE**

In [C08F 36/00](#) to [C08F 36/22](#) the method of polymerisation may be indicated using the subdivision of [C08F 2/00](#) to [C08F 2/58](#) in the form of C-Sets; the nature of the catalyst may be indicated using the subdivision of ~~4/00~~[C08F 4/00](#) to ~~4/60~~[C08F 4/60](#), ~~4/62~~[C08F 4/62](#), ~~4/64~~[C08F 4/64](#), ~~4/642~~[C08F 4/642](#),



[4/642B C08F 4/6421](#), [4/643 C08F 4/643](#) or [4/68 C08F 4/68](#) to [4/82 C08F 4/82](#) in the form of C-Sets. Example: ( [C08F 36/04](#) , [C08F 4/642](#) )

## C08F 236/00

**Copolymers of compounds having one or more unsaturated aliphatic radicals, at least one having two or more carbon-to-carbon double bonds( [C08F 232/00](#) takes precedence )**

### NOTE

In [C08F 236/00](#) to [C08F 236/22](#) the method of polymerisation may be indicated using the subdivision of [C08F 2/00](#) to [C08F 2/58](#) in the form of C-Sets; the nature of the catalyst may be indicated using the subdivision of [4/00 C08F 4/00](#) to [4/60 C08F 4/60](#), [4/62 C08F 4/62](#), [4/64 C08F 4/64](#), [4/642 C08F 4/642](#), [4/642B C08F 4/6421](#), [4/643 C08F 4/643](#) or [4/68 C08F 4/68](#) to [4/82 C08F 4/82](#) in the form of C-Sets. Example: ( [C08F 236/10](#) , [C08F 4/46](#) )

## Project: N/A (C08J)

### C08J

**WORKING-UP; GENERAL PROCESSES OF COMPOUNDING; AFTER-TREATMENT NOT COVERED BY SUBCLASSES [C08B](#), [C08C](#), [C08F](#), [C08G](#)( mechanical aspects [B29](#); layered products, manufacture thereof [B32B](#); treatment of macromolecular material specially adapted to enhance its filling properties in mortars, concrete or artificial stone [C04B 16/04](#) , [C04B 18/20](#) , [C04B 20/00](#) ; treatment of textiles [D06](#) )**

### NOTE

1. This subclass covers processes, not covered by subclasses [C08B](#) to [C08H](#), for treating polymers.

In this subclass, in the absence of an indication to the contrary, classification is made in the last appropriate place

2. When classifying in subclass [C08J](#), the treatment of specific polymers is indicated using indexing codes chosen from [M08J400 C08J 2400/00](#) or subgroups thereof.

Example:

- Preparation of particles of polystyrene by impregnation of the particles with the blowing agent: [C08J 9/18](#) and [C08J 2325/06](#) .

The use of a polymeric component in minority, e.g. masterbatch, coating, impregnating agent or thin binder is indicated using indexing codes chosen from [M08J400 C08J 2400/00](#) or subgroups thereof. Examples:

- Use of PMMA as masterbatch in a polystyrene composition: [C08J 3/226](#) and [C08J 2325/06](#) and [C08J 2433/10](#)

- Bonding of polystyrene by heating: [C08J 5/121](#) and [C08J 2325/06](#)

- Coating of a polyethylene substrate with a polyurethane coating: [C08J 7/047](#) and [C08J 2323/06](#) and [C08J 2475/04](#) - Use of ABS as an additive for foamed polyacrylamide : [C08J 9/0061](#) and [C08J 2333/26](#) and [C08J 2455/02](#)

In the following subgroups, the codes of [C08J 2300/00](#) to [C08J 2399/00](#) are used to specify: - [C08J 3/226](#) : the polymeric material to which the masterbatch carrier is added. - [C08J 7/047](#) : the polymeric substrate to be coated. -

[C08J 9/0061](#) : the polymeric component in majority in a multicomponents foamable blend.

3. Group [M08J400 C08J 2400/00](#) was introduced on January 1st, 2012. Patent documents are continuously being reclassified. As a consequence, documents published before 01/01/2012, and to which [M08J400 C08J 2400/00](#) indexing codes were allocated, are indexed in the corresponding head group. Example:

- Use of PMMA as masterbatch in a polystyrene composition: [C08J 3/226](#) and [C08J 2325/06](#) and [C08J 2433/00](#) , instead of [C08J 2433/10](#) . In the following subgroups, the codes of [C08J 2400/00](#) to [C08J 2499/00](#) are used to specify: - [C08J 3/226](#) : the polymeric carrier in a masterbatch. - [C08J 5/12](#) : the chemical nature of the adhesive - [C08J 7/047](#) : the chemical nature of the coating(s).

- [C08J 9/0061](#) : the polymeric component in minority in a multicomponents foamable blend. - [C08J 9/224](#) , [C08J 9/236](#) , [C08J 9/36](#) , [C08J 9/40](#) and [C08J 9/42](#) : the polymer used for coating, binding, or impregnating the foam. [C08J 9/26](#) : the polymer to be leached out. - [C08J 9/33](#) and [C08J 9/35](#) : the foam fragments included in the (foamable) polymer matrix. - in all other subgroups, when the presence of a polymeric component in minority is of relevance.

#### WARNING

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

[C08J 5/14](#) covered by [B24D 3/20](#) , [F16D 69/02](#)

[C08J 5/16](#) covered by [C10M](#)

- |  |  |
|--|--|
| <p><b>U C08J 3/00</b></p> <p>U C08J 3/20</p> <p>U C08J 3/22</p> <p>C08J 3/226</p> <p><b>U C08J 5/00</b></p> <p>U C08J 5/04</p> <p>C08J 5/046</p> | <p><b>Processes of treating or compounding macromolecular substances</b></p> <ul style="list-style-type: none"> <li>• Compounding polymers with additives, e.g. colouring</li> <li>• • using masterbatch techniques</li> <li>• • • {using a polymer as a carrier <i>(see remark 2)</i>}{<del>see remark 2</del>}</li> </ul> <p><b>Manufacture of articles or shaped materials containing macromolecular substances( shaping of foodstuffs <a href="#">A23P</a> ; manufacture of semi-permeable membranes <a href="#">B01D 67/00</a> to <a href="#">B01D 71/00</a> ; mechanical features, see the relevant classes, e.g. <a href="#">B29</a> )</b></p> <ul style="list-style-type: none"> <li>• Reinforcing macromolecular compounds with loose or coherent fibrous material( after-treatment of threads during manufacture <a href="#">D01F</a> ; { finishing of textiles <a href="#">D06M</a> } )</li> <li>• • {with synthetic macromolecular fibrous material}{<del>Note: Note 2 following the title of subclass C08J may be applied</del>}</li> </ul> |
|--|--|

#### NOTE

*{ Note 2 following the title of subclass [C08J](#) may be applied }*

### Project: N/A (C08K)

#### C08K

**USE OF INORGANIC OR NON-MACROMOLECULAR ORGANIC SUBSTANCES AS COMPOUNDING INGREDIENTS** (pesticides, herbicides [A01N](#); pharmaceuticals, cosmetics [A61K](#); explosives [C06B](#); paints, inks, varnishes, dyes, polishes, adhesives [C09](#); lubricants [C10M](#); detergents [C11D](#); artificial filaments or fibres [D01F](#); textile treating compositions [D06](#))

#### NOTES

1. The use of an ingredient for a specific polymer is classified by adding, in a C-set, to the group symbol of [C08K](#), the subdivision of [C08L 1/00](#) to [C08L 99/00](#). Example: Polystyrene containing a carboxylic amide is classified in ([C08K 5/20](#), [C08L 25/06](#)). 2. From April 2012, the use of an ingredient for a specific polymer is classified by adding, in a C-set, to the group symbol of [C08K](#), the subdivision of [C08L 1/00](#) to [C08L 99/00](#). Example: Polystyrene containing a carboxylic amide is classified in ([C08K 5/20](#), [C08L 25/06](#)). 3. In this subclass, in the absence of an indication to the contrary, an ingredient is classified in the last appropriate place.

In this subclass:

- a mixture of ingredients is classified in the most indented group covering all the essential ingredients of the mixture, e.g.:
  - a mixture of a monohydric and a polyhydric alcohol [C08K 5/05](#)
  - a mixture of two polyhydric alcohols [C08K 5/053](#)
  - a mixture of an alcohol and an ether [C08K 5/04](#)
  - a mixture of an ether and an amine [C08K 5/00](#)

a mixture of an amine and a metal [C08K 13/02](#)  
{ This note is applied only for mixtures with more than three essential ingredients. Mixtures with two or three ingredients are classified in the appropriate groups of [C08K](#), e.g. a mixture of Al<sub>2</sub>O<sub>3</sub>, an ether and an amine is classified in [C08K 3/22](#), [C08K 5/06](#) and [C08K 5/17](#)}

- ammonium salts are classified in the same way as metal salts

In this subclass, organic acid salts, alcoholates, phenolates or mercaptides are classified in the groups or subgroups of the parent compounds

The use of an ingredient for a specific polymer is classified by adding to the group symbol of [C08K](#) and separated therefrom by a "+" sign, the subdivision of [C08L 1/00](#) to [C08L 99/00](#).

Example: Polystyrene containing a carboxylic amide is classified in [C08K 5/20](#)+~~L25/06~~[C08L 25/06](#)

In this subclass are considered as compounding ingredients:

inert additives

radical crosslinking agents, e.g. peroxides, S-containing vulcanisation agents

coupling agents, i.e. compounds able to improve the adhesion between filler and macromolecule

Are not considered as compounding ingredients:

chemical modifying or crosslinking agents which react via a condensation or addition mechanism (for [C08B](#) polymers [C08B](#), for diene rubbers [C08C 19/30](#), for other vinyl polymers [C08F8/-](#), for polysiloxanes [C08L 83/00](#), for other [C08G](#) polymers [C08G](#))

solvents or dispersion agents for making polymer solutions, emulsions or dispersions ([C08J 3/02](#))

blowing agents ([C08J 9/04](#))

#### WARNING

The following IPC group is not used in the CPC system. Subject matter covered by this group is classified in the following CPC groups:

[C08K 5/5445](#) covered by [C08K 5/544](#)

#### U C08K 3/00

U C08K 3/02

U C08K 3/08

U C08K 2003/0818

C08K 2003/0825

#### Use of inorganic ingredients

• Elements

• • Metals

• • • { Alkali metal}

• • • • {~~[N:]~~ Potassium}

#### Project: N/A (C08L)

##### C08L

**COMPOSITIONS OF MACROMOLECULAR COMPOUNDS**(pesticides, herbicides [A01N](#); pharmaceuticals, cosmetics [A61K](#); explosives [C06B](#); compositions based on polymerisable monomers [C08F](#), [C08G](#); paints, inks, varnishes, dyes, polishes, adhesives [C09](#); lubricants [C10M](#); detergents [C11D](#); artificial filaments or fibres [D01F](#); textile treating compositions [D06](#))

#### NOTES

Compositions classified in [C08K](#) according to note 3 of [C08K](#), are not classified in [C08L](#).

Documents classified before 09.2003: Classification is given in the form of C-Sets. The polymer in majority is given a [C08L](#) symbol, and the minor components are characterised by Indexing Codes taken from the list below.

The Indexing Codes are linked. The polymer in majority is always first in the C-set. List of **M08L** codes: [C08L 23/00](#) , [C08L 23/26](#) , [C08L 25/00](#) , [C08L 27/00](#) , [C08L 27/04](#) , [C08L 27/12](#) , [C08L 29/00](#) , [C08L 31/00](#) , [C08L 33/00](#) ,

[C08L 35/00](#) , [C08L 37/00](#) , [C08L 51/00](#) , [C08L 53/00](#) , [C08L 55/02](#) , [C08L 61/04](#) , [C08L 61/20](#) , [C08L 63/00](#) , [C08L 67/00](#) , [C08L 67/02](#) , [C08L 67/025](#) , [C08L 67/03](#) , [C08L 67/04](#) , [C08L 67/06](#) , [C08L 67/07](#) , [C08L 69/00](#) , ~~M08L69/00B~~[C08L 69/005](#) , [C08L 71/00](#) , [C08L 75/04](#) , [C08L 77/00](#) , [C08L 77/08](#) , [C08L 77/12](#) , [C08L 79/08](#) , [C08L 79/085](#) , [C08L 81/00](#) , [C08L 83/00](#) , [C08L 85/00](#) , [C08L 91/06](#) , [C08L 95/00](#) or [C08L 2666/00](#) - [C08L 2666/86](#) . Documents from group [C08L 23/00](#) - [C08L 23/36](#) , [C08L 45/00](#) - [C08L 45/02](#) and [C08L 49/00](#) have all been reclassified following Note 3 below. An additive is classified in the last appropriate place in the list as selected for each [C08L](#) group. Examples:

- a. A composition based on a polyamide and a graft polymer is classified in ( [C08L 77/00](#) , [C08L 2666/24](#) ) .
- b. A composition based on polyvinylchloride and containing CaCO<sub>3</sub> is classified according to note 4 of C08K, i.e. in ( [C08K 3/26](#) , [C08L 27/06](#) ) . If this composition contains also a polyamide, then the classification will be ( [C08L 27/06](#) , [C08L 77/00](#) , [C08K 3/26](#) ) .
- c. A composition based on a polysiloxane ( [C08L 83/04](#) ) and containing a second polysiloxane, a phenol and silica is classified in ( [C08L 83/04](#) , [C08L 83/04](#) , [C08L 2666/34](#) , [C08L 2666/58](#) ) .

From 01.09.2003 until April 2012: Classification is given in the form of C-Sets. The polymer in majority is given a [C08L](#) class, and the minor components are characterised by Indexing Codes taken from ~~M08L~~ or ~~M08K~~ and they are linked or unlinked. The polymer in majority is always first in the C-Set. List of ~~M08L~~ codes in the C-Set: [C08L 1/00](#) , [C08L 81/00](#) , [C08L 83/00](#) , [C08L 91/06](#) , [C08L 95/00](#) or [C08L 2666/02](#) - [C08L 2666/08](#) , [C08L 2666/14](#) - [C08L 2666/26](#) . Examples:

- a. A blend of 60 parts polyvinylchloride ( [C08L 27/06](#) ) and 40 parts polyamide is classified in ( [C08L 27/06](#) , [C08L 2666/20](#) ) and [C08L 77/00](#) . b. A blend of 50 parts polyvinylchloride ( [C08L 27/06](#) ) and 50 parts polyamide ( [C08L 77/00](#) ) is classified in ( [C08L 27/06](#) , [C08L 2666/20](#) ) and [C08L 77/00](#) , as well as in ( [C08L 77/00](#) , [C08L 2666/04](#) ) and [C08L 27/06](#) . c. A composition based on polyvinylchloride and containing CaCO<sub>3</sub> is classified according to [N: Note 4 of C08K, i.e. in ( [C08K 3/26](#) , [C08L 27/06](#) ) . If this composition contains also a polyamide, then the classification will be ( [C08L 27/06](#) , [C08L 2666/20](#) ) and [C08K 3/26](#) . d. A composition based on a first polysiloxane ( [C08L 83/04](#) ) and containing a second polysiloxane, a phenol and silica is classified in ( [C08L 83/04](#) , [C08L 83/04](#) , [C08K 5/13](#) , [C08K 3/36](#) ) and [C08L 2205/02](#) .

From April 2012 onwards, after the notation [C08L](#), notations concerning the other constituents of the composition may be added, in the form of C-Sets. The further constituent is added with an indexing code. The indexing codes are chosen from [C08L 1/00](#) -~~C08L555/86~~ or [C08K](#) and they may be linked or unlinked: - [C08L 1/00](#) - [C08L 101/10](#) are linked. - [C08L 2201/00](#) - [C08L 2555/86](#) are unlinked. The polymer in majority is always first in the C-Set. Examples:

- a. A blend of 60 parts polyvinylchloride ( [C08L 27/06](#) ) and 40 parts polyamide ( [C08L 77/00](#) ) is classified in ( [C08L 27/06](#) , [C08L 77/00](#) ) . b. A blend of 50 parts polyvinylchloride ( [C08L 27/06](#) ) and 50 parts polyamide ( [C08L 77/00](#) ) is classified in ( [C08L 27/06](#) , [C08L 77/00](#) ) and ( [C08L 77/00](#) , [C08L 27/06](#) ) . c. A composition based on polyvinylchloride and containing CaCO<sub>3</sub> is classified

according to [N: Note 4 of [C08K](#), i.e. in ( [C08K 3/26](#) , [C08L 27/06](#) )]. If this composition contains also a polyamide, then the classification will be ( [C08L 27/06](#) , [C08L 77/00](#) , [C08K 3/26](#) ). d. A composition based on a first polysiloxane ( [C08L 83/04](#) ) and containing a second polysiloxane, a phenol and silica is classified in ( [C08L 83/04](#) , [C08L 83/00](#) , [C08K 5/13](#) , [C08K 3/36](#) ) and [C08L 2205/02](#) . e. A composition containing a polyamide in majority, a polyester and a polyethylene is classified in ( [C08L 77/00](#) , [C08L 67/00](#) , [C08L 23/06](#) ) and [C08L 2205/03](#) .

#### WARNING

"Rubber" includes:

natural or conjugated diene rubbers;  
rubber in general (for a specific rubber, other than a natural rubber or a conjugated diene rubber, see the group provided for compositions of such macromolecular compounds).

In this subclass:

compositions are classified according to the mutual proportions by weight of only the macromolecular constituents;  
compositions are classified according to the macromolecular constituent or constituents present in the highest proportion: if all these constituents are present in equal proportions the composition is classified according to each of these constituents.

- |                    |   |
|--------------------|---|
| <b>U C08L 1/00</b> | <b>Compositions of cellulose, modified cellulose or cellulose derivatives</b>   |
| U C08L 1/08        | • Cellulose derivatives   |
| U C08L 1/26        | • • Cellulose ethers  |
| U C08L 1/28        | • • • Alkyl ethers  |
| C08L 1/286         | • • • {substituted with acid radicals, e.g. carboxymethyl cellulose <a href="#">[CMC]</a> ( <a href="#">CMC</a> )( <a href="#">C08L 1/282</a> takes precedence )} |

**C08L 83/00**      **Compositions of 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; Compositions of derivatives of such polymers**

#### NOTE

In this main group, from 01.09.2010 onwards, new documents are classified according to the following system. The composition is identified with the C-Set, e.g. (~~C08L83/04~~[C08L83/04](#), [C08L 83/04](#) ) (for a composition containing two or more siloxanes), while the info

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

- |                     |  |
|---------------------|--|
| <b>U C09B 23/00</b> | <b>Methine or polymethine dyes, e.g. cyanine dyes</b>  |
| C09B 23/0066        | • {the polymethine chain being part of a carbocyclic ring, (e.g. <a href="#">benzene</a> , <a href="#">naphthalene</a> , <a href="#">cyclohexene</a> , <a href="#">cyclobutenene-quadratic acid</a> )} (e.g. <a href="#">benzene</a> , <a href="#">naphthalene</a> , <a href="#">cyclohexene</a> , <a href="#">cyclobutenene-quadratic acid</a> )} |
| <b>U C09B 29/00</b> | <b>Monoazo dyes prepared by diazotising and coupling</b>   |
| U C09B 29/06        | • from coupling components containing amino as the only directing group  |
| U C09B 29/08        | • • Amino benzenes   |
| U C09B 29/0805      | • • • {free of acid groups}  |
| U C09B 29/0807      | • • • • {characterised by the amino group}   |

- U C09B 29/0809 . . . . . {substituted amino group}
- U C09B 29/0811 . . . . . {further substituted alkylamino, alkenylamino, alkynylamino, cycloalkylamino aralkylamino or arylamino}
- U C09B 29/0815 . . . . . {substituted by -C(=O)-}
- U C09B 29/0816 . . . . . {substituted by -COOR}
- C09B 29/0817 . . . . . {having N(-aliphatic residue-COOR)}{having N(-aliphatic residue-COOR)<sup>2</sup> as substituents}
- U C09B 29/0823 . . . . . {substituted by CN}
- C09B 29/0825 . . . . . {having N(-alkenylene-CN/-alkynylene-CN)}{(-aliphatic residue-CN)}{(-aliphatic residue-CN)}
- U C09B 29/34 . . . . . from other coupling components
- U C09B 29/36 . . . . . from heterocyclic compounds
- U C09B 29/3604 . . . . . {containing only a nitrogen as heteroatom}
- U C09B 29/3617 . . . . . {containing a six-membered heterocyclic with only one nitrogen as heteroatom}
- U C09B 29/3621 . . . . . {from a pyridine ring}
- C09B 29/3626 . . . . . {from a pyridine ring containing one or more hydroxyl groups (or = O)}{or = O}
- U C09B 33/00 Disazo and polyazo dyes of the types A->K<-B, A->B->K<-C, or the like, prepared by diazotising and coupling**
- U C09B 33/02 . . . . . Disazo dyes
- C09B 33/147 . . . . . in which the coupling component is a bis -(-o-hydroxy-carboxylic-acid amide){(-o-hydroxy-carboxylic-acid amide)}
- C09B 33/153 . . . . . in which the coupling component is a bis-(aceto-acetyl amide) or a bis-(benzoyl-acetyl amide){aceto-acetyl amide} or a bis-(benzoyl-acetyl amide)
- U C09B 55/00 Azomethine dyes**
- C09B 55/009 . . . . . {Azomethine dyes, the C-atom of the group -C=N- being part of a ring (Image)}{Image}
- U C09B 69/00 Dyes not provided for by a single group of this subclass**
- C09B 69/02 . . . . . Dyestuff salts, e.g. salts of acid dyes with basic dyes(for Na, K or NH<sub>4</sub><sup>+</sup> salts or for chlorides, sulfates or chlorozincates, see the relevant dye groups)

**Project: N/A (C09D)****C09D 183/00**

**Coating compositions 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; Coating compositions based on derivatives of such polymers**

**NOTE**

In this main group and its subgroups, from 01.09.2010 onwards, new documents are classified according to the following system. The coating composition is identified with the C-Set, e.g. ( C09D 183/04 , C08L 83/04 ) (for a coating composition containing two or more siloxanes), while the information as to which different polymers are present in the coating composition is identified with additional indexing codes, e.g. C08G 77/12 and C08G 77/20.

In this main group and its subgroups, from 01.09.2010 onwards, new documents are classified according to the following system. The coating composition is identified with the C-Set, e.g. ( C09D 183/04 , C08L 83/04 ) (for a coating composition containing two or more siloxanes), while the information as to



*which different polymers are present in the coating composition is identified with additional indexing codes, e.g. C08G 77/12 and C08G 77/20 .*

## Project: N/A (C09J)

### U C09J 2205/00

#### Other features

U C09J 2205/10  
C09J 2205/114

- of adhesive tapes; Production process thereof
- • Presence of a copolymer

#### NOTE

This group is to be used in combination with combined indexing codes of ~~M09J401~~C09J 2401/00-~~M09J499~~C09J 2499/00 in case a copolymer is present but not a blend

## Project: N/A (C09K)

### U C09K 11/00

#### Luminescent, e.g. electroluminescent, chemiluminescent materials

C09K 11/08

- containing inorganic luminescent materials{Note In this group, magnesium is considered as an alkaline earth metal}

#### NOTE

In groups C09K 11/08 to C09K 11/897 , in the absence of an indication to the contrary, classification of materials is made in the last appropriate place

*{ In this group, magnesium is considered as an alkaline earth metal }*

#### WARNING

Groups C09K 11/0805 to C09K 11/0894, with the exception of C09K 11/0883 for classifying nitrides, are no longer used for classification of new documents. The backlog of this group is being continuously reclassified to subgroups C09K 11/54 to C09K 11/897

### C09K 19/00

#### Liquid crystal materials

#### NOTES

In groups C09K 19/02 to C09K 19/60 , { with the exception of groups C09K 19/0208 to ~~C09K19/02K~~C09K 19/0283} ,in the absence of an indication to the contrary, materials are classified in the last appropriate place.

Mixtures containing two or more liquid crystal compounds covered individually by the same one of groups C09K 19/04 to C09K 19/40 are classified only in that group.

If liquid crystal components of the mixtures classified in groups C09K 19/42 to C09K 19/50 are of importance as such, they should also be classified according to the compounds in groups C09K 19/04 to C09K 19/40 .

## Project: N/A (C10K)

### U C10K 1/00

#### Purifying combustible gases containing carbon monoxide (isolation of hydrogen from mixtures containing hydrogen and carbon monoxide C01B 3/50)

U C10K 1/08  
U C10K 1/10  
U C10K 1/12  
C10K 1/121

- by washing with liquids; Reviving the used wash liquors (gas washers B01D)
- • with aqueous liquids {alkaline reacting aqueous liquids C10K 1/12}
- • • alkaline-reacting {including the revival of the used wash liquors}
- • • • {containing NH<sub>3</sub> only (possibly in combination with NH<sub>4</sub> salts)}(possibly in combination with NH<sub>4</sub>-salts)}

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

<b>U</b>	<b>C10L 1/00</b>	<b>Liquid carbonaceous fuels</b>
U	C10L 1/10	• containing additives
U	C10L 1/12	• • inorganic compounds
	C10L 1/1266	• • • {nitrogen containing compounds, <del>(e.g. NH<sub>3</sub>)</del> (e.g. NH <sub>3</sub> )}
U	C10L 1/14	• • Organic compounds
U	C10L 1/18	• • • Containing oxygen
U	C10L 1/19	• • • • Esters{ester radical containing compounds; ester ethers; carbonic acid esters( <a href="#">C10L 1/1802</a> , <a href="#">C10L 1/1805</a> , <a href="#">C10L 1/1808</a> , <a href="#">C10L 1/1811</a> , <a href="#">C10L 1/1814</a> , <a href="#">C10L 1/1817</a> take precedence )}
	C10L 1/1915	• • • • • {complex esters <del>(at least 3 ester bonds)</del> (at least 3 ester bonds)}
U	C10L 1/22	• • • containing nitrogen
U	C10L 1/222	• • • • containing at least one carbon-to-nitrogen single bond{( <a href="#">C10L 1/221</a> takes precedence )}
	C10L 1/2222	• • • • • {(cyclo)aliphatic amines; polyamines <del>(no macromolecular substituent 30C)</del> (no macromolecular substituent 30C); quaternair ammonium compounds; carbamates( <a href="#">C10L 1/221</a> takes precedence )}
U	C10L 1/234	• • • • Macromolecular compounds{( <a href="#">C10L 1/221</a> takes precedence )}
U	C10L 1/238	• • • • • obtained otherwise than by reactions involving only carbon-to-carbon unsaturated bonds{( <a href="#">C10L 1/221</a> takes precedence )}
	C10L 1/2383	• • • • • • Polyamines or polyimines, or derivatives thereof{(poly)amines and imines; derivatives thereof <del>(substituted by a macromolecular group containing 30C)</del> (substituted by a macromolecular group containing 30C)( <a href="#">C10L 1/221</a> takes precedence )}
	C10L 1/2387	• • • • • • • Polyoxyalkyleneamines{(poly)oxyalkylene amines and derivatives thereof <del>(substituted by a macromolecular group containing 30C)</del> (substituted by a macromolecular group containing 30C)( <a href="#">C10L 1/221</a> takes precedence )}
U	C10L 1/24	• • • containing sulfur, selenium and/or tellurium
U	C10L 1/2462	• • • • {macromolecular compounds}
U	C10L 1/2475	• • • • • {obtained otherwise than by reactions only involving unsaturated carbon to carbon bonds}
	C10L 1/2481	• • • • • • {polysulfides <del>(3 carbon to sulfur bonds)</del> (3 carbon to sulfur bonds)}
	C10L 1/2487	• • • • • • {polyoxyalkylene thioethers <del>(O + S 3=)</del> (O + S 3=)}
<b>U</b>	<b>C10L 10/00</b>	<b>Use of additives to fuels or fires for particular purposes( additives for liquid carbonaceous fuels characterised by their chemical nature <a href="#">C10L 1/10</a> ; using binders for briquetting solid fuels <a href="#">C10L 5/10</a> ; using additives to improve the combustion of solid fuels <a href="#">C10L 9/10</a> )</b>

WARNINGS

IPC8 subgroups [C10L 10/00](#) , introduced in the CPC scheme in June 2006, might be temporarily incomplete as a number of documents presently classified under the main group needs reclassification to these IPC subgroups

C10L 10/06

- for facilitating soot removal { ~~Warning: Groups C10L 10/08 to C10L 10/18 were introduced in May 2006. These groups might be incomplete as documents, presently classified in C10L 10/00 and C10L 10/04 are in the process of being reclassified to these groups~~ }

WARNING

*Groups C10L 10/08 to C10L 10/18 were introduced in May 2006. These groups might be incomplete as documents, presently classified in C10L 10/00 and C10L 10/04 are in the process of being reclassified to these groups*

C10L 2200/00

**Components of fuel compositions** ~~Note Additives in liquid fuels present in concentrations lower than 5% get a class taken from C10L 1/10 -C10L 1/308 and corresponding C10L 1/10 -C10L 1/308. In groups C10L 1/32 to C10L 11/08 is such distinction between the terms additive and component not made.~~

NOTE

*Additives in liquid fuels present in concentrations lower than 5% get a class taken from C10L 1/10 -C10L 1/308 and corresponding C10L 1/10 -C10L 1/308. In groups C10L 1/32 to C10L 11/08 is such distinction between the terms additive and component not made.*

Project: N/A (C10M)

C10M 163/00

Lubricating compositions characterised by the additive being a mixture of a compound of unknown or incompletely defined constitution and a non-macromolecular compound, each of these compounds being essential { ~~Note: Compositions containing compounds covered by C10M 159/005 as compounds of unknown or incompletely defined constitution are classified in C10M 161/00~~ }

NOTE

*{ Compositions containing compounds covered by C10M 159/005 as compounds of unknown or incompletely defined constitution are classified in C10M 161/00 }*

C10M 165/00

Lubricating compositions characterised by the additive being a mixture of a macromolecular compound and a compound of unknown or incompletely defined constitution, each of these compounds being essential { ~~Note: Compositions containing compounds covered by C10M 159/005, as compounds of unknown or incompletely defined constitution are classified in C10M 157/00~~ }

NOTE

*{ Compositions containing compounds covered by C10M 159/005, as compounds of unknown or incompletely defined constitution are classified in C10M 157/00 }*

C10M 167/00

Lubricating compositions characterised by the additive being a mixture of a macromolecular compound, a non-macromolecular compound and a compound of unknown or incompletely defined constitution, each of these compounds being essential { ~~Note: Compositions containing compounds covered by C10M 159/005, as compounds of unknown or incompletely defined constitution are classified in C10M 161/00~~ }

NOTE

*{ Compositions containing compounds covered by C10M 159/005, as compounds of unknown or incompletely defined constitution are classified in C10M 161/00 }*

**Project: N/A (C11B)**

- U C11B 13/00** **Recovery of fats, fatty oils, or fatty acids from waste materials( mechanical separation from waste water [C02F](#) , [E03F](#) )**
- C11B 13/005 • {of residues of the fabrication of wood-cellulose (*in particular tall-oil*)}(*in particular tall-oil*)}

**Project: N/A (C11D)**

- U C11D 1/00** **Detergent compositions based essentially on surface-active compounds; Use of these compounds as a detergent**

NOTE

In groups [C11D 1/02](#) to [C11D 1/94](#), in the absence of an indication to the contrary, a compound is classified in the last appropriate place.

- U C11D 1/88** • Ampholytes; Electroneutral compounds {([C11D 1/002](#), [C11D 1/004](#), [C11D 1/008](#) take precedence)}
- C11D 1/883 • • {Aminimide (= *ammonioamidates*)}(= *ammonioamidates*)}
- U C11D 9/00** **Compositions of detergents based essentially on soap (compositions containing resin soap [C11D 15/04](#))**
- U C11D 9/04** • containing compounding ingredients other than soaps
- C11D 9/045 • • {containing substances which prevent the deterioration of soaps, e.g. light or heat stabilisers, antioxidants}

NOTE

In groups [9/06](#)[C11D 9/06](#) to [9/42](#)[C11D 9/42](#), in the absence of an indication to the contrary, a compound is classified in the last appropriate place.

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

**MICRO-ORGANISMS OR ENZYMES; COMPOSITIONS THEREOF( 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 [A01N 63/00](#) ; food compositions [A21](#) , [A23](#) ; medicinal preparations [A61K](#) ; chemical aspects of, or use of materials for, bandages, dressings, absorbent pads or surgical articles [A61L](#) ; fertilisers [C05](#) ); PROPAGATING, PRESERVING OR MAINTAINING MICRO-ORGANISMS( preservation of living parts of humans or animals [A01N 1/02](#) ); MUTATION OR GENETIC ENGINEERING; CULTURE MEDIA( micro-biological testing media [C12Q](#) )**

NOTES

Documents relating to the use of vectors or hosts for the preparation of specific peptides, e.g. enzymes, are classified in subclass [C07K](#) or in group [C12N 9/00](#) according to the peptides, with the appropriate indexing codes.

Attention is drawn to Notes (1) to (3) following the title of Class [C12](#) . When classifying in this group, classification is also made in group [B01D 15/08](#) insofar as subject matter of general interest relating to chromatography is concerned.

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:

[C12N 1/11](#) covered by [C12N 15/79](#)

[C12N 1/13](#) covered by [C12N 15/79](#)

C12N 1/15 covered by [C12N 15/80](#)  
C12N 1/19 covered by [C12N 15/81](#)  
C12N 1/21 covered by [C12N 15/74](#)  
C12N 5/02 covered by [C12N 5/00](#), [C12N 5/04](#) to [C12N 5/166](#)  
C12N 5/07 - C12N 5/095 covered by [C12N 5/06](#) and  
subgroups  
C12N 5/18 - C12N 5/28 covered by [C12N 5/16](#) and  
subgroups  
C12N 5/08 covered by [C12N 5/06](#) to **C12N5/06R**  
C12N 5/18 covered by [C12N 5/16](#)  
C12N 5/20 covered by [C12N 5/163](#)  
C12N 5/22 covered by [C12N 5/16](#)  
C12N 5/24 covered by [C12N 5/163](#)  
C12N 5/26 covered by [C12N 5/166](#)  
C12N 5/28 covered by [C12N 5/166](#)  
C12N 7/01 covered by [C12N 7/00](#)  
C12N 9/26 covered by [C12N 9/2408](#)  
C12N 9/38 covered by [C12N 9/2468](#)  
C12N 9/42 covered by [C12N 9/2434](#)  
C12N 9/44 covered by [C12N 9/2451](#)  
C12N 9/70 covered by [C07K 14/3153](#)  
[C12N 9/26 covered by C12N 9/2408](#)  
[C12N 9/38 covered by C12N 9/2468](#)  
[C12N 9/42 covered by C12N 9/2434](#)  
[C12N 9/44 covered by C12N 9/2451](#)  
C12N 15/05 covered by [C12N 5/14](#)  
  
C12N 15/06 covered by [C12N 5/16](#)  
  
C12N 15/07 covered by [C12N 5/16](#)  
  
C12N 15/08 covered by [C12N 5/166](#)  
  
C12N 15/12 covered by [C07K 14/435](#)  
  
C12N 15/13 covered by [C07K 16/00](#)  
  
C12N 15/14 covered by [C07K 14/765](#)  
  
C12N 15/15 covered by [C07K 14/81](#)  
  
C12N 15/16 covered by [C07K 14/575](#)  
  
C12N 15/17 covered by [C07K 14/62](#)  
  
C12N 15/18 covered by [C07K 14/61](#)  
  
C12N 15/19 covered by [C07K 14/52](#)  
  
C12N 15/20 covered by [C07K 14/555](#)  
  
C12N 15/21 covered by [C07K 14/56](#)  
  
C12N 15/22 covered by [C07K 14/565](#)  
  
C12N 15/23 covered by [C07K 14/57](#)  
  
C12N 15/24 covered by [C07K 14/54](#)  
  
C12N 15/25 covered by [C07K 14/545](#)

C12N 15/26 covered by [C07K 14/55](#)  
C12N 15/27 covered by [C07K 14/53](#)  
C12N 15/28 covered by [C07K 14/525](#)  
C12N 15/29 covered by [C07K 14/415](#)  
C12N 15/30 covered by [C07K 14/44](#)  
C12N 15/31 covered by [C07K 14/195](#), [C07K 14/005](#)  
C12N 15/32 covered by [C07K 14/325](#)  
C12N 15/33 covered by [C07K 14/005](#)  
C12N 15/34 covered by [C07K 14/01](#)  
C12N 15/35 covered by [C07K 14/015](#)  
C12N 15/36 covered by [C07K 14/02](#)  
C12N 15/37 covered by [C07K 14/025](#)  
C12N 15/38 covered by [C07K 14/03](#)  
C12N 15/39 covered by [C07K 14/065](#)  
C12N 15/40 covered by [C07K 14/08](#)  
C12N 15/41 covered by [C07K 14/085](#)  
C12N 15/42 covered by [C07K 14/09](#)  
C12N 15/43 covered by [C07K 14/105](#)  
C12N 15/44 covered by [C07K 14/11](#)  
C12N 15/45 covered by [C07K 14/115](#)  
C12N 15/46 covered by [C07K 14/14](#)  
C12N 15/47 covered by [C07K 14/145](#)  
C12N 15/48 covered by [C07K 14/15](#)  
C12N 15/49 covered by [C07K 14/155](#)  
C12N 15/50 covered by [C07K 14/165](#)  
C12N 15/51 covered by [C07K 14/02](#), [C07K 14/10](#), [C07K 14/18](#)  
C12N 15/53 covered by [C12N 9/02](#)  
C12N 15/54 covered by [C12N 9/10](#)  
C12N 15/55 covered by [C12N 9/14](#)  
C12N 15/56 covered by [C12N 9/24](#)  
C12N 15/57 covered by [C12N 9/48](#)



C12N 15/58 covered by [C12N 9/6456](#)

C12N 15/59 covered by [C12N 9/6483](#)

C12N 15/60 covered by [C12N 9/88](#)

C12N 15/61 covered by [C12N 9/90](#)

C12N 15/83 covered by [C12N 15/82](#)

C12N 15/84 covered by [C12N 15/82](#)

**U C12N 5/00**

**Undifferentiated human, animal or plant cells, e.g. cell lines; Tissues; Cultivation or maintenance thereof; Culture media therefor; ( plant reproduction by tissue culture techniques [A01H 4/00](#) )**

**NOTE**

In this group, the following words are used with the meanings indicated: - a "totipotent" cell can differentiate into all somatic lineages (ectoderm, mesoderm, endoderm), the germ line and extra-embryonic tissues such as the placenta; - a "pluripotent" cell is a somatic stem cell which can differentiate into cells of at least two of the three somatic lineages (ectoderm, mesoderm, endoderm); - a "multipotent" cell is restricted to one lineage; - "progenitor" and "precursor" cells are further restricted within the lineage. If not explicitly foreseen, totipotent cells are classified with pluripotent cells. Multipotent cells should not be classified with pluripotent cells. Unless provided for otherwise, committed progenitors are classified with their progeny.

**U C12N 5/06**

- Animal cells or tissues; {Human cells or tissues ( preservation of living cells or tissues [A01N 1/02](#) ) ; Not used, see subgroups}

**NOTE**

In this group, the following words are used with the meanings indicated:

- a "totipotent" cell can differentiate into all somatic lineages (ectoderm, mesoderm, endoderm), the germ line and extra-embryonic tissues such as the placenta;
  - a "pluripotent" cell is a somatic stem cell which can differentiate into cells of at least two of the three somatic lineages (ectoderm, mesoderm, endoderm);
  - a "multipotent" cell is restricted to one lineage.
- "Progenitor" and "precursor" cells are further restricted within the lineage. If not explicitly foreseen, totipotent cells are classified with pluripotent cells. Multipotent cells should not be classified with pluripotent cells

**U C12N 5/0602**

- {Vertebrate cells}

**NOTE**

Three-dimensional culture, tissue culture or organ culture are classified with the corresponding cells, if not specially provided for

**U C12N 5/0603**

- • {Embryonic cells ( production of embryos, nuclear transfer [A01K 67/027](#) ) ; Embryoid bodies}

**C12N 5/0606**

- • • {Pluripotent embryonic cells, e.g. embryonic stem cells [\[ES\]\(ES\)](#) ( embryonic germ cells [C12N 5/0611](#) , induced pluripotent stem cells [C12N 5/0696](#) ) }

**C12N 7/00**

**Viruses; Bacteriophages; Compositions thereof; Preparation or purification thereof( preparing medicinal viral antigen or antibody composition, e.g. virus vaccines, [A61K 39/00](#) )**

**WARNING**

From March 15, 2012 groups [C12N 7/02](#) - [C12N 7/08](#) and subgroups thereof are no longer used for the classification of new documents. The documents in these (sub)groups are being reclassified to the corresponding codes in the range [M12N710C12N 2710/00-M12N795C12N 2795/00](#).

**U C12N 9/00**

**Enzymes; Proenzymes; Compositions thereof( preparations containing enzymes for cleaning teeth [A61K 8/66](#) , [A61Q 11/00](#) ; medicinal preparations containing enzymes or pro-enzymes [A61K 38/43](#) ; enzyme containing detergent compositions [C11D](#) ; { enzymes with nucleic acid structure, e.g. ribozymes, [C12N 15/113](#) }); Processes for preparing, activating, inhibiting, separating or purifying enzymes( preparation of malt [C12C 1/00](#) )**

**NOTE**

Enzymes are generally categorized below according to the "Nomenclature and Classification of Enzymes" of the International Commission on Enzymes. Where appropriate, this designation appears in the groups below in parenthesis.

- U C12N 9/0004      • {Oxidoreductases (1.)}
- C12N 9/0006      • • ~~IN-~~{acting on CH-OH groups as donors (1.1)}
- C12N 9/0012      • • {acting on nitrogen containing compounds as donors ([1.4](#), [1.5](#), [1.6](#), [1.7](#))}~~(1.4;~~  
~~1.5; 1.6; 1.7)}~~
- U C12N 9/0071      • • {acting on paired donors with incorporation of molecular oxygen (1.14)}
- U C12N 9/0077      • • • {with a reduced iron-sulfur protein as one donor (1.14.15)}
- C12N 9/0079      • • • • {Steroid 11 beta monooxygenase ([P-450 protein](#))([1.14.15.4](#))}~~(P-450~~  
~~protein)(1.14.15.4)}~~
- C12N 9/0081      • • • • ~~{Cholesterol monooxygenase(cytochrome P-450scc)}~~[{Cholesterol](#)  
[monooxygenase \(cytochrome P 450scc\)](#)([1.14.15.6](#))}
- U C12N 9/10      • Transferases (2.)(ribonucleases [C12N 9/22](#))
- U C12N 9/1048      • • {Glycosyltransferases (2.4)}
- U C12N 9/1051      • • • {Hexosyltransferases (2.4.1)}
- C12N 9/1059      • • • • {Cellulose synthases ([2.4.1.12](#)~~(2.4.1.12; 2.4.1.29)~~; [2.4.1.29](#))}
- U C12N 9/14      • Hydrolases (3)
- U C12N 9/24      • • acting on glycosyl compounds (3.2)
- U C12N 9/2402      • • • {hydrolysing O- and S- glycosyl compounds (3.2.1)}
- U C12N 9/2405      • • • • {Glucanases}
- U C12N 9/2434      • • • • • {acting on beta-1,4-glucosidic bonds}
- C12N 9/2437      • • • • • • {Cellulases ([3.2.1.4](#)~~(3.2.1.4; 3.2.1.74; 3.2.1.91; 3.2.1.150)~~; [3.2.1.74](#);  
[3.2.1.91](#); [3.2.1.150](#))}
- C12N 9/2468      • • • • • {acting on beta-galactose-glycoside bonds, e.g. carrageenases  
~~(3.2.1.83(3.2.1.83; 3.2.1.157); 3.2.1.157)~~; beta-agarase (3.2.1.81)}
- U C12N 9/48      • • acting on peptide bonds (3.4)
- U C12N 9/50      • • • Proteinases{Endopeptidases (3.4.21-3.4.25)}
- U C12N 9/64      • • • • derived from animal tissue
- U C12N 9/6421      • • • • • {from mammals}
- U C12N 9/6424      • • • • • • {Serine endopeptidases (3.4.21)}

- C12N 9/6427 . . . . . {Chymotrypsins (3.4.21.1(3.4.21.1; 3.4.21.2); 3.4.21.2); Trypsin (3.4.21.4)}
- C12N 9/6445 . . . . . {Kallikreins (3.4.21.34(3.4.21.34; 3.4.21.35)); 3.4.21.35)}
- U C12N 9/6472 . . . . . {Cysteine endopeptidases (3.4.22)}
- C12N 9/6475 . . . . . {Interleukin 1-beta convertase-like enzymes (3.4.22.10(3.4.22.10; 3.4.22.36; 3.4.22.63)); 3.4.22.36; 3.4.22.63)}
- U C12N 9/6478 . . . . . {Aspartic endopeptidases (3.4.23)}
- C12N 9/6481 . . . . . {Pepsins (3.4.23.1(3.4.23.1; 3.4.23.2; 3.4.23.3); 3.4.23.2; 3.4.23.3)}
- U C12N 9/6489 . . . . . {Metalloendopeptidases (3.4.24)}
- C12N 9/6491 . . . . . {Matrix metalloproteases (MMP's), e.g. interstitial collagenase (3.4.24.7); Stromelysins (3.4.24.17(3.4.24.17; 3.2.1.22); 3.2.1.22); Matrilysin (3.4.24.23)}
- C12N 9/6497 . . . . . {Endothelin-converting enzyme (3.4.24.71)}(3.4.24.71)}
- U C12N 9/90 . Isomerases (5.)
- C12N 9/92 . . Glucose isomerase{(5.3.1.5(5.3.1.5; 5.3.1.9; 5.3.1.18)); 5.3.1.9; 5.3.1.18)}
- U C12N 15/00 **Mutation or genetic engineering; DNA or RNA concerning genetic engineering, vectors, e.g. plasmids, or their isolation, preparation or purification; Use of hosts therefor( mutants or genetically engineered micro-organisms, per se C12N 1/00 , C12N 5/00 , C12N 7/00 ; new plants per se A01H ; plant reproduction by tissue culture techniques A01H 4/00 ; new animals per se A01K 67/00 ; use of medicinal preparations containing genetic material which is inserted into cells of the living body to treat genetic diseases, gene therapy A61K 48/00 )**
- U C12N 15/09 . Recombinant DNA-technology
- C12N 15/10 . . Processes for the isolation, preparation or purification of DNA or RNA( chemical preparation of DNA or RNA C07H 21/00 ; preparation of non-structural polynucleotides from micro-organisms or with enzymes C12P 19/34 )

**NOTE**

After the symbol C12N 15/10 to C12N 15/1096, and separated therefrom by a + sign, it is desirable to add the indexing codes selected from groups C12Q 2500/00 to C12Q599/00 , relating to relevant technical features of the invention. When more than one indexing code is selected, the different codes are separated by a + sign. Example : C12N 15/1037 + 537/125C12Q537/125 + 521/537C12Q521/537

- U C12N 15/63 . . Introduction of foreign genetic material using vectors; Vectors; Use of hosts therefor; Regulation of expression
- U C12N 15/79 . . Vectors or expression systems specially adapted for eukaryotic hosts

**NOTE**

This group covers the use of eukaryotes as hosts.

- U C12N 15/85 . . . . for animal cells
- C12N 15/86 . . . . Viral vectors

**WARNING**

From March 15, 2012 groups C12N 15/861 - C12N 15/869 and subgroups thereof are no longer used for the classification of new documents. The documents in these (sub)groups are being reclassified to the corresponding codes in the range M12N710 C12N 2710/00-M12N795C12N 2795/00

**U C12N 2501/00 Active agents used in cell culture processes, e.g. differentiation****NOTE**

Whenever possible, indexation is done by signalling pathway and not by chemical structure, e.g. the group of a protein covers not only peptide analogs of it and the corresponding nucleic acids, as in [C07K 14/00](#), but also antibodies, anti-idiotypic antibodies, non-peptide ligands of the receptor, the receptor itself, antibodies against the receptor or inhibitors of the conversion enzyme which processes the protein precursor. Unless otherwise provided for, ligands and substrates take precedence over receptors and enzymes.

- U C12N 2501/10 • Growth factors
- C12N 2501/113 • • Acidic fibroblast growth factor ([aFGF, FGF-1](#))(~~aFGF, FGF-1~~)
- C12N 2501/115 • • Basic fibroblast growth factor ([bFGF, FGF-2](#))(~~bFGF, FGF-2~~)
- C12N 2501/117 • • Keratinocyte growth factors ([KGF-1, i.e. FGF-7](#))(~~KGF-1, i.e. FGF-7; KGF-2, i.e. FGF-12~~); [KGF-2, i.e. FGF-12](#))
- C12N 2501/18 • • Liver cell growth factor ([LCGF, Gly-His-Lys](#))(~~LCGF, Gly-His-Lys~~)
- U C12N 2501/20 • Cytokines; Chemokines
- C12N 2501/22 • • Colony stimulating factors ([G-CSF, GM-CSF](#))(~~G-CSF, GM-CSF~~)
- C12N 2501/26 • • Flt-3 ligand ([CD135L, flk-2 ligand](#))(~~CD135L, flk-2 ligand~~)
- U C12N 2501/70 • Enzymes
- C12N 2501/71 • • Oxidoreductases ([EC 1.](#))(~~EC 1.~~)
- C12N 2501/72 • • Transferases ([EC 2.](#))(~~EC 2.~~)( acetylation of histones [C12N 2501/065](#) )
- C12N 2501/724 • • • Glycosyltransferases ([EC 2.4.](#))(~~EC 2.4.~~)
- C12N 2501/727 • • • Kinases ([EC 2.7.](#))(~~EC 2.7.~~)
- C12N 2501/73 • • Hydrolases ([EC 3.](#))(~~EC 3.~~)
- C12N 2501/734 • • • Proteases ([EC 3.4.](#))(~~EC 3.4.~~)

**U C12N 2502/00 Coculture with; Conditioned medium produced by**

- C12N 2502/99 • genetically modified cells

**NOTE**

Use ~~M12N501~~[C12N 2501/00](#) to index the expressed products.

**C12N 2799/00 Uses of viruses****WARNING**

From March 15, 2012 codes in the range [C12N 2799/00](#) - [C12N 2799/06](#) are no longer used for the classification of new documents. The documents in this range are being reclassified to the corresponding codes in ~~M12N710~~  
[C12N 2710/00](#)-~~M12N795~~[C12N 2795/00](#)

**C12N 2999/00 Further aspects of viruses or vectors not covered by the ~~M12N700~~  
[C12N 2700/00](#) or ~~M12N800~~[C12N 2800/00](#) series****NOTE**

This group is for classification of patent and non-patent literature documents.

When classifying non-patent literature in this group, classification must also be given for the relevant CPC groups, to define the technical area to which they relate.

**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](#) .

C12P 19/14

- ~~produced by the action of a carbohydrase{(EC 3.2.x)}~~*produced by the action of a carbohydrase{(EC 3.2.x)}*, e.g. by alpha-amylase,{e.g. by cellulase, hemicellulase}

**Project: N/A (C12Q)**

**U C12Q 2326/00** Chromogens for determinations of oxidoreductase enzymes

C12Q 2326/30

- 2,2'-Azinobis *(3-ethylbenzothiazoline-6-sulfonic acid), i.e. ABTS* ~~(3-ethylbenzothiazoline-6-sulfonic acid), i.e. ABTS~~

**U C12Q 2525/00** Reactions involving modified oligonucleotides, nucleic acids, or nucleotides

U C12Q 2525/10

- Modifications characterised by

C12Q 2525/185

- incorporating base(s) where the precise position of the base(s) in the nucleic acid string is important *(Not to be used for 3'-end base)* ~~(Not to be used for 3'-end base)~~

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

**U C12Y 101/00** Oxidoreductases acting on the CH-OH group of donors (1.1)

U C12Y 101/01

- with NAD<sup>+</sup> or NADP<sup>+</sup> as acceptor (1.1.1)

C12Y 101/01005

- Acetoin dehydrogenase *(1.1.1.5)* ~~(1.1.1.5)~~ ( [C12Y 101/01303](#) , [C12Y 101/01304](#) takes precedence )

C12Y 101/01051

- ~~3(or 17)3~~ *3 (or 17)*-Beta-hydroxysteroid dehydrogenase (1.1.1.51)

C12Y 101/01053

- ~~3-Alpha(or 20-beta)3~~ *3-Alpha (or 20-beta)*-hydroxysteroid dehydrogenase (1.1.1.53)

C12Y 101/01094

- Glycerol-3-phosphate dehydrogenase *(NAD(P)+)* ~~(1.1.1.94)~~ *(NAD(P)+)* ~~(1.1.1.94)~~

C12Y 101/01117

- D-Arabinose 1-dehydrogenase *(NAD(P)+)* ~~(1.1.1.117)~~ *(NAD(P)+)* ~~(1.1.1.117)~~

C12Y 101/01209

- ~~3(or 17)3~~ *3 (or 17)*-Alpha-hydroxysteroid dehydrogenase (1.1.1.209)

C12Y 101/0121

- ~~3-Beta(or 20-alpha)3~~ *3-Beta (or 20-alpha)*-hydroxysteroid dehydrogenase (1.1.1.210)

C12Y 101/01299

- ~~Malate dehydrogenase(NAD(P)+)~~ *Malate dehydrogenase (NAD(P)+)* ~~(1.1.1.299)~~

C12Y 101/01305

- UDP-glucuronic acid dehydrogenase *(UDP-4-keto-hexauronic acid decarboxylating)* ~~(1.1.1.305)~~ *(UDP-4-keto-hexauronic acid decarboxylating)* ~~(1.1.1.305)~~

U C12Y 101/02

- with a cytochrome as acceptor (1.1.2)

C12Y 101/02005

- D-Lactate dehydrogenase *(cytochrome c-553)* ~~(1.1.2.5)~~ *(cytochrome c-553)* ~~(1.1.2.5)~~

**U C12Y 102/00** Oxidoreductases acting on the aldehyde or oxo group of donors (1.2)

U C12Y 102/01

- with NAD<sup>+</sup> or NADP<sup>+</sup> as acceptor (1.2.1)

C12Y 102/01059

- Glyceraldehyde-3-phosphate dehydrogenase *(NAD(P)+)* ~~(phosphorylating)~~ *(1.2.1.59)* ~~(NAD(P)+)~~ ~~(phosphorylating)~~ ~~(1.2.1.59)~~

C12Y 102/01075	• • Malonyl CoA reductase ( <i>malonate semialdehyde-forming</i> )(1.2.1.75)( <i>malonate semialdehyde-forming</i> )(1.2.1.75)
U C12Y 102/02	• with a cytochrome as acceptor (1.2.2)
C12Y 102/02003	• • <del>Formate dehydrogenase(cytochrome c-553)</del> <i>Formate dehydrogenase (cytochrome c-553)</i> (1.2.2.3)
C12Y 102/02004	• • Carbon-monoxide dehydrogenase ( <i>cytochrome b-561</i> )(1.2.2.4)( <i>cytochrome b-561</i> )(1.2.2.4)
<b>U C12Y 103/00</b>	<b>Oxidoreductases acting on the CH-CH group of donors (1.3)</b>
U C12Y 103/01	• with NAD+ or NADP+ as acceptor (1.3.1)
C12Y 103/0101	• • Enoyl-[acyl-carrier-protein] reductase ( <i>NADPH, B-specific</i> )(1.3.1.10)( <i>NADPH, B-specific</i> )(1.3.1.10)
C12Y 103/01039	• • Enoyl-[acyl-carrier-protein] reductase ( <i>NADPH, A-specific</i> )(1.3.1.39)( <i>NADPH, A-specific</i> )(1.3.1.39)
C12Y 103/01071	• • <del>DELTA24(24(1))</del> <i>DELTA24 (24(1))</i> -sterol reductase (1.3.1.71)
C12Y 103/01079	• • <del>Arogenate dehydrogenase(NAD(P)+)</del> <i>Arogenate dehydrogenase (NAD(P)+)</i> (1.3.1.79)
C12Y 103/01088	• • tRNA-dihydrouridine16/17 synthase ( <i>NAD(P)+</i> )(1.3.1.88)( <i>NAD(P)+</i> )(1.3.1.88)
C12Y 103/01089	• • tRNA-dihydrouridine47 synthase ( <i>NAD(P)+</i> )(1.3.1.89)( <i>NAD(P)+</i> )(1.3.1.89)
C12Y 103/0109	• • tRNA-dihydrouridine20a/20b synthase ( <i>NAD(P)+</i> )(1.3.1.90)( <i>NAD(P)+</i> )(1.3.1.90)
C12Y 103/01091	• • tRNA-dihydrouridine20 synthase ( <i>NAD(P)+</i> )(1.3.1.91)( <i>NAD(P)+</i> )(1.3.1.91)
<b>U C12Y 104/00</b>	<b>Oxidoreductases acting on the CH-NH2 group of donors (1.4)</b>
U C12Y 104/01	• with NAD+ or NADP+ as acceptor (1.4.1)
C12Y 104/01003	• • <del>Glutamate dehydrogenase(NAD(P)+)</del> <i>Glutamate dehydrogenase (NAD(P)+)</i> (1.4.1.3)
U C12Y 104/03	• with oxygen as acceptor (1.4.3)
C12Y 104/03006	• • <del>Amine oxidase(copper-containing)</del> <i>Amine oxidase (copper-containing)</i> (1.4.3.6)( <a href="#">C12Y 104/03021</a> or <a href="#">C12Y 104/03022</a> takes precedence )
<b>U C12Y 105/00</b>	<b>Oxidoreductases acting on the CH-NH group of donors (1.5)</b>
U C12Y 105/01	• with NAD+ or NADP+ as acceptor (1.5.1)
C12Y 105/01007	• • <del>Saccharopine dehydrogenase(NAD+, L-lysine-forming)</del> <i>Saccharopine dehydrogenase (NAD+, L-lysine-forming)</i> (1.5.1.7)
C12Y 105/01008	• • <del>Saccharopine dehydrogenase(NADP+, L-lysine-forming)</del> <i>Saccharopine dehydrogenase (NADP+, L-lysine-forming)</i> (1.5.1.8)
C12Y 105/01009	• • <del>Saccharopine dehydrogenase(NAD+, L-glutamate-forming)</del> <i>Saccharopine dehydrogenase (NAD+, L-glutamate-forming)</i> (1.5.1.9)
C12Y 105/0101	• • <del>Saccharopine dehydrogenase(NADP+, L-glutamate-forming)</del> <i>Saccharopine dehydrogenase (NADP+, L-glutamate-forming)</i> (1.5.1.10)
C12Y 105/01039	• • <del>FMN reductase(NAD(P)H)</del> <i>FMN reductase (NAD(P)H)</i> (1.5.1.39)
C12Y 105/01041	• • <del>Riboflavin reductase(NAD(P)H)</del> <i>Riboflavin reductase (NAD(P)H)</i> (1.5.1.41)
C12Y 105/99	• with other acceptors ( <i>1.5.99</i> )( <i>1.5.99</i> )
<b>U C12Y 107/00</b>	<b>Oxidoreductases acting on other nitrogenous compounds as donors (1.7)</b>
U C12Y 107/01	• with NAD+ or NADP+ as acceptor (1.7.1)
C12Y 107/01014	• • Nitric oxide reductase ( <i>NAD(P), nitrous oxide-forming</i> )(1.7.1.14)( <i>NAD(P), nitrous oxide-forming</i> )(1.7.1.14)
U C12Y 107/02	• with a cytochrome as acceptor (1.7.2)



C12Y 107/02002	<ul style="list-style-type: none"> <li>• <i>Nitrite reductase (cytochrome; ammonia-forming)</i> (<i>Nitrite reductase (cytochrome; ammonia-forming)</i>) (1.7.2.2)</li> </ul>
<b>U C12Y 108/00</b>	<b>Oxidoreductases acting on sulfur groups as donors (1.8)</b>
U C12Y 108/04	<ul style="list-style-type: none"> <li>• with a disulfide as acceptor (1.8.4)</li> </ul>
C12Y 108/04005	<ul style="list-style-type: none"> <li>• Methionine-S-oxide reductase (<i>(1.8.4.5) (1.8.4.5)</i>) (<i>C12Y 108/04013</i> or <i>C12Y 108/04014</i> takes precedence )</li> </ul>
<b>U C12Y 113/00</b>	<b>Oxidoreductases acting on single donors with incorporation of molecular oxygen (oxygenases) (1.13)</b>
U C12Y 113/11	<ul style="list-style-type: none"> <li>• with incorporation of two atoms of oxygen (1.13.11)</li> </ul>
C12Y 113/11054	<ul style="list-style-type: none"> <li>• <i>Acireductone-dioxygenase (Fe(2+)-requiring)</i> (<i>Acireductone dioxygenase (Fe(2+)-requiring)</i>) (1.13.11.54)</li> </ul>
<b>U C12Y 114/00</b>	<b>Oxidoreductases acting on paired donors, with incorporation or reduction of molecular oxygen (1.14)</b>
U C12Y 114/13	<ul style="list-style-type: none"> <li>• with NADH or NADPH as one donor, and incorporation of one atom of oxygen (1.14.13)</li> </ul>
C12Y 114/13033	<ul style="list-style-type: none"> <li>• 4-Hydroxybenzoate 3-monooxygenase (<i>(NAD(P)H) (1.14.13.33) (NAD(P)H) (1.14.13.33)</i>)</li> </ul>
<b>U C12Y 121/00</b>	<b>Oxidoreductases acting on X-H and Y-H to form an X-Y bond (1.21)</b>
U C12Y 121/03	<ul style="list-style-type: none"> <li>• with oxygen as acceptor (1.21.3)</li> </ul>
C12Y 121/03004	<ul style="list-style-type: none"> <li>• <i>Sulochrin-oxidase ((+)-bisdechlorogeodin-forming)</i> (<i>Sulochrin oxidase ((+)-bisdechlorogeodin-forming)</i>) (1.21.3.4)</li> </ul>
C12Y 121/03005	<ul style="list-style-type: none"> <li>• <i>Sulochrin-oxidase ((-)-bisdechlorogeodin-forming)</i> (<i>Sulochrin oxidase ((-)-bisdechlorogeodin-forming)</i>) (1.21.3.5)</li> </ul>
<b>U C12Y 203/00</b>	<b>Acyltransferases (2.3)</b>
U C12Y 203/01	<ul style="list-style-type: none"> <li>• transferring groups other than amino-acyl groups (2.3.1)</li> </ul>
C12Y 203/01045	<ul style="list-style-type: none"> <li>• N-Acetylneuraminate 7-O (<i>or 9-O</i>)-acetyltransferase (<i>(2.3.1.45) (or 9-O)-acetyltransferase (2.3.1.45)</i>)</li> </ul>
<b>U C12Y 205/00</b>	<b>Transferases transferring alkyl or aryl groups, other than methyl groups (2.5)</b>
U C12Y 205/01	<ul style="list-style-type: none"> <li>• transferring alkyl or aryl groups, other than methyl groups (2.5.1)</li> </ul>
C12Y 205/01082	<ul style="list-style-type: none"> <li>• Hexaprenyl diphosphate synthase (<i>(geranylgeranyl-diphosphate specific) (2.5.1.82) (geranylgeranyl-diphosphate specific) (2.5.1.82)</i>)</li> </ul>
C12Y 205/01083	<ul style="list-style-type: none"> <li>• Hexaprenyl-diphosphate synthase (<i>((2E,6E)-farnesyl-diphosphate specific) (2.5.1.83) ((2E,6E)-farnesyl-diphosphate specific) (2.5.1.83)</i>)</li> </ul>
C12Y 205/01084	<ul style="list-style-type: none"> <li>• All-trans-nonaprenyl-diphosphate synthase (<i>(geranyl-diphosphate specific) (2.5.1.84) (geranyl-diphosphate specific) (2.5.1.84)</i>)</li> </ul>
C12Y 205/01085	<ul style="list-style-type: none"> <li>• All-trans-nonaprenyl-diphosphate synthase (<i>(geranylgeranyl-diphosphate specific) (2.5.1.85) (geranylgeranyl-diphosphate specific) (2.5.1.85)</i>)</li> </ul>
C12Y 205/01087	<ul style="list-style-type: none"> <li>• Ditrans, polycis-polyisoprenyl diphosphate synthase (<i>((2E,6E)-farnesyl diphosphate specific) (2.5.1.87) ((2E,6E)-farnesyl diphosphate specific) (2.5.1.87)</i>)</li> </ul>
C12Y 205/01088	<ul style="list-style-type: none"> <li>• Trans, polycis-polyisoprenyl diphosphate synthase (<i>((2Z,6E)-farnesyl diphosphate specific) (2.5.1.88) ((2Z,6E)-farnesyl diphosphate specific) (2.5.1.88)</i>)</li> </ul>
C12Y 205/01089	<ul style="list-style-type: none"> <li>• Tritrans, polycis-undecaprenyl-diphosphate synthase (<i>(geranylgeranyl-diphosphate specific) (2.5.1.89) (geranylgeranyl-diphosphate specific) (2.5.1.89)</i>)</li> </ul>
<b>U C12Y 207/00</b>	<b>Transferases transferring phosphorus-containing groups (2.7)</b>

U	C12Y 207/01	• Phosphotransferases with an alcohol group as acceptor (2.7.1)
	C12Y 207/01037	• • Protein kinase (2.7.1.37)(2.7.1.37)( C12Y 207/11001 , C12Y 207/11008 - C12Y 207/11013 , C12Y 207/11021 , C12Y 207/11022 , C12Y 207/11024 , C12Y 207/11025 , C12Y 207/1103 or C12Y 207/12001 takes precedence )
	C12Y 207/01148	• • 4-(Cytidine 5'-diphospho)4-(Cytidine 5'-diphospho)-2-C-methyl-D-erythritol kinase (2.7.1.148)
<b>U</b>	<b>C12Y 301/00</b>	<b>Hydrolases acting on ester bonds (3.1)</b>
U	C12Y 301/11	• Exodeoxyribonucleases producing 5'-phosphomonoesters (3.1.11)
	C12Y 301/11004	• • Exodeoxyribonuclease(phage SP3-induced)Exodeoxyribonuclease (phage SP3-induced)(3.1.11.4)
U	C12Y 301/21	• Endodeoxyribonucleases producing 5'-phosphomonoesters (3.1.21)
	C12Y 301/21002	• • Deoxyribonuclease IV(phage-T(4)-induced)Deoxyribonuclease IV (phage-T(4)-induced)(3.1.21.2)
U	C12Y 301/26	• Endoribonucleases producing 5'-phosphomonoesters (3.1.26)
	C12Y 301/26009	• • Ribonuclease(poly-(U)-specific)Ribonuclease (poly-(U)-specific)(3.1.26.9)
<b>U</b>	<b>C12Y 302/00</b>	<b>Hydrolases acting on glycosyl compounds, i.e. glycosylases (3.2)</b>
U	C12Y 302/01	• Glycosidases, i.e. enzymes hydrolysing O- and S-glycosyl compounds (3.2.1)
	C12Y 302/01092	• • Peptidoglycan beta-N-acetylmuramidase (3.2.1.92)(3.2.1.92)
<b>U</b>	<b>C12Y 303/00</b>	<b>Hydrolases acting on ether bonds (3.3)</b>
U	C12Y 303/02	• Ether hydrolases (3.3.2)
	C12Y 303/02003	• • Epoxide hydrolase (3.3.2.3)(3.3.2.3)( C12Y 303/02009 or C12Y 303/0201 takes precedence )
<b>U</b>	<b>C12Y 304/00</b>	<b>Hydrolases acting on peptide bonds i.e. peptidases (3.4)</b>
U	C12Y 304/13	• Dipeptidases (3.4.13)
	C12Y 304/13011	• • Dipeptidase (3.4.13.11)(3.4.13.11)( C12Y 304/13018 or C12Y 304/13019 takes precedence )
U	C12Y 304/21	• Serine endopeptidases (3.4.21)
	C12Y 304/21011	• • Elastase (3.4.21.11)(3.4.21.11)( C12Y 304/21036 or C12Y 304/21037 takes precedence )
	C12Y 304/21014	• • Microbial serine proteases (3.4.21.14)(3.4.21.14)( C12Y 304/21062 - C12Y304/67 takes precedence )
	C12Y 304/21031	• • Urokinase (3.4.21.31)(3.4.21.31)( C12Y 304/21068 or C12Y 304/21073 takes precedence )
U	C12Y 304/22	• Cysteine endopeptidases (3.4.22)
	C12Y 304/22004	• • Bromelain (3.4.22.4)(3.4.22.4)( C12Y 304/22032 or C12Y 304/22033 takes precedence )
U	C12Y 304/23	• Aspartic endopeptidases (3.4.23)
	C12Y 304/23006	• • Microbial carboxyl proteinases (3.4.23.6)(3.4.23.6)( C12Y 304/23018 - C12Y 304/23028 or C12Y 304/2303 takes precedence )
U	C12Y 304/24	• Metalloendopeptidases (3.4.24)
	C12Y 304/24004	• • Microbial metalloproteinases (3.4.24.4)(3.4.24.4)( C12Y 304/24025 - C12Y 304/24032 , C12Y 304/24039 or C12Y 304/2404 takes precedence )
<b>U</b>	<b>C12Y 402/00</b>	<b>Carbon-oxygen lyases (4.2)</b>
U	C12Y 402/01	• Hydro-lyases (4.2.1)
	C12Y 402/01117	• • 2-Methylcitrate dehydratase (2-methyl-trans-aconitate forming)(4.2.1.117)(2-methyl-trans-aconitate-forming)(4.2.1.117)

- U C12Y 402/02 • acting on polysaccharides (4.2.2)
- C12Y 402/02004 • • ~~Chondroitin-ABC lyase(4.2.2.4)~~Chondroitin ABC lyase (4.2.2.4), i.e. chondroitinase( C12Y 402/0202 or C12Y 402/02021 takes precedence )
- U C12Y 402/03 • acting on phosphates (4.2.3)
- C12Y 402/0305 • • (+)-Alpha-santalene synthase ((2Z,6Z)-farnesyl diphosphate cyclizing) (4.2.3.50)((2Z,6Z)-farnesyl diphosphate cyclizing)(4.2.3.50)
- C12Y 402/03053 • • (+)-Endo-beta-bergamotene synthase ((2Z,6Z)-farnesyl diphosphate cyclizing)(4.2.3.53)((2Z,6Z)-farnesyl diphosphate cyclizing)(4.2.3.53)
- C12Y 402/03054 • • (-)-Endo-alpha-bergamotene synthase ((2Z,6Z)-farnesyl diphosphate cyclizing)(4.2.3.54)((2Z,6Z)-farnesyl diphosphate cyclizing)(4.2.3.54)
- C12Y 402/03062 • • (-)-Gamma-cadinene synthase ((2Z,6E)-farnesyl diphosphate cyclizing) (4.2.3.62)((2Z,6E)-farnesyl diphosphate cyclizing)(4.2.3.62)
- U C12Y 403/00 Carbon-nitrogen lyases (4.3)**
- U C12Y 403/01 • Ammonia-lyases (4.3.1)
- C12Y 403/01005 • • Phenylalanine ammonia-lyase (4.3.1.5)(4.3.1.5)( C12Y 403/01023 - C12Y 403/01025 takes precedence )
- U C12Y 503/00 Intramolecular oxidoreductases (5.3)**
- U C12Y 503/01 • interconverting aldoses and ketoses (5.3.1)
- C12Y 503/01016 • • 1-(5-Phosphoribosyl)-5-((5-phosphoribosylamino)methylideneamino)imidazole-4-carboxamid (5.3.1.16)((5-phosphoribosylamino)methylideneamino)imidazole-4-carboxamid (5.3.1.16)

**Project: N/A (C22B)**

- U C22B 3/00 Extraction of metal compounds from ores or concentrates by wet processes**
- NOTE
- This group covers methods directed to the extraction of three or more metals. For the recovery of one or two metals, see the other groups of this subclass concerning these metals
- C22B 3/0004 • {Treatment or purification of solutions, e.g. obtained by leaching( C22B 3/04 takes precedence )}{~~WARNING: Not used, see subgroups~~
- ~~WARNING~~  
~~Not used, see subgroups~~
- U C22B 3/0005 • • {by liquid-liquid extraction using organic compounds, e.g. acyclic or carbocyclic compounds, heterocyclic compounds, organo- metallic compounds, alcohols, ethers, or the like( C22B 3/205 takes precedence )}
- U C22B 3/004 • • • {using organo-metallic compounds or organo compounds of boron, silicon, phosphorus, selenium or tellurim}
- U C22B 3/0041 • • • • {using organo-metallic compounds of a single type}
- U C22B 3/0043 • • • • • {using phosphorus-based acid derivatives}
- U C22B 3/0044 • • • • • {of a single type}
- U C22B 3/0045 • • • • • • {Acyclic compounds}
- U C22B 3/0056 • • • • • • • {Mononuclear oxyacids of tervalent phosphorus or their esters(-ite)}
- C22B 3/006 • • • • • • • {Phosphonous (H<sub>2</sub>P(OH)<sub>2</sub>) type}(H<sub>2</sub>P(OH)<sub>2</sub>)type}
- C22B 3/0062 • • • • • • • {Phosphorous (P(OH)<sub>3</sub>) type}(P(OH)<sub>3</sub>)type}

- U C22B 3/0063 . . . . . {Mononuclear oxyacids of pentavalent phosphorus or their esters(-ate)}
- C22B 3/0064 . . . . . {~~Phosphenic~~(HOP(O)2){~~Phosphenic~~ (HOP(O)2) or metaphosphoric type}
- C22B 3/0066 . . . . . {Phosphinic (~~H<sub>2</sub>P(O)(OH)~~) type}{~~H<sub>2</sub>P(O)(OH)~~ type}
- C22B 3/0067 . . . . . {Phosphonic (~~H<sub>2</sub>P(O)(OH)<sub>2</sub>~~) type}{~~H<sub>2</sub>P(O)(OH)<sub>2</sub>~~ type}
- C22B 3/0068 . . . . . {Phosphoric (~~(O)P(OH)<sub>3</sub>~~) type}{~~(O)P(OH)<sub>3</sub>~~ type}
- U C22B 3/0071 . . . . . {Dinuclear or polynuclear oxyacids and their derivatives}
- C22B 3/0075 . . . . . {compounds with (P-Xn-P) bonds (~~n, 0, X: other than P~~), e.g. ~~pyro- or di-~~}{~~n, 0, X: other than P~~}, e.g. ~~pyro- or di-~~}

## Project: N/A (C22C)

- U C22C 1/00 **Making alloys (powder-metallurgical apparatus or processes, not specially modified for making alloys [B22F](#); by electrothermal methods [C22B 4/00](#); by electrolysis [C25C](#))**
- U C22C 1/10 . Alloys containing non-metals ({ [C22C 1/05](#)}, [C22C 1/08](#), { [C22C 47/00](#), [C22C 49/00](#)} take precedence)
- C22C 1/1005 . { Pretreatment of the non-metallic additives (pretreatment of non-metallic fibres [C22C 47/02](#))}~~{ WARNING Groups C22C 1/1005, C22C 1/101 and C22C 1/1015 are not complete, see also C22C 1/10}~~
- WARNING**  
*Groups [C22C 1/1005](#), [C22C 1/101](#) and [C22C 1/1015](#) are not complete, see also [C22C 1/10](#)*
- U C22C 47/00 **Making alloys containing metallic or non-metallic fibres or filaments**
- U C22C 47/02 . Pretreatment of the fibres or filaments
- C22C 47/025 . { Aligning or orienting the fibres }~~{ Warning Not complete, see also [C22C 47/02](#)}~~
- WARNING**  
*Not complete, see also [C22C 47/02](#)*
- U C22C 47/06 . by forming the fibres or filaments into a preformed structure, e.g. using a temporary binder to form a mat-like element
- C22C 47/062 . . { from wires or filaments only }~~{ Warning Groups C22C 47/062, C22C 47/064, C22C 47/066 and C22C 47/068 are not complete, see also [C22C 47/02](#) or [C22C 47/06](#)}~~
- WARNING**  
*Groups [C22C 47/062](#), [C22C 47/064](#), [C22C 47/066](#) and [C22C 47/068](#) are not complete, see also [C22C 47/02](#) or [C22C 47/06](#)*

**Project: N/A (C23C)****C23C**

COATING METALLIC MATERIAL; COATING MATERIAL WITH METALLIC MATERIAL; SURFACE TREATMENT OF METALLIC MATERIAL BY DIFFUSION INTO THE SURFACE, BY CHEMICAL CONVERSION OR SUBSTITUTION; COATING BY VACUUM EVAPORATION, BY SPUTTERING, BY ION IMPLANTATION OR BY CHEMICAL VAPOUR DEPOSITION, IN GENERAL( applying liquids or other fluent materials to surfaces in general [B05](#); making metal-coated products by extrusion [B21C 23/22](#) ; covering with metal by connecting pre-existing layers to articles, see the relevant places, e.g. [B21D 39/00](#) , [B23K](#); working of metal by the action of a high concentration of electric current on a workpiece using an electrode [B23H](#); metallising of glass [C03C](#); metallising mortars, concrete, artificial stone, ceramics or natural stone [C04B 41/00](#) ; paints varnishes, laquers [C09D](#); enamelling of, or applying a vitreous layer to, metals [C23D](#); inhibiting corrosion of metallic material or incrustation in general [C23F](#); single-crystal film growth [C30B](#); manufacture of semiconductor devices [H01L](#); manufacture of printed circuits [H05K](#) )

**NOTE**

In this subclass, an operation is considered as pre-treatment or after-treatment when it is specially adapted for, but quite distinct from, the coating process concerned and constitutes an independent operation. If an operation results in the formation of a permanent sub- or upper layer, it is not considered as pre-treatment or after-treatment and is classified as a multi-coating process.

**WARNING**

1. Groups [C23C 28/30](#) to [C23C 28/44](#) do not correspond to former or current IPC-groups. Concordance CPC : IPC for these groups is as follows - [C23C 28/30](#) - [C23C 28/44](#) : [C23C 28/00](#)

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

[C23C 14/36](#) to [C23C 14/44](#) covered by  
[C23C 14/34](#) + subgr.

The following IPC group is not used in the CPC system. Subject-matter covered by the group is classified in the following CPC groups : [C23C 18/28](#) covered

by [G23C18/20B](#) [C23C 18/2006](#) - [C23C 18/2093](#)

**Project: N/A (D01D)****U D01D 5/00****Formation of filaments, threads, or the like****U D01D 5/08**

• Melt spinning methods {([D01D 5/0023](#) takes precedence)}

**U D01D 5/098**

• • with simultaneous stretching

**D01D 5/0985**

• • • {by means of a flowing gas ([e.g. melt-blowing](#))}{~~e.g. melt-blowing~~}

**Project: N/A (D03D)****U D03D 15/00****Woven fabrics characterised by the material or construction of the yarn or other warp or weft elements used****D03D 15/0077**

• {using fancy or textured threads (~~N: Chenille yarns are in D03D 27/18~~ [Chenille yarns are in D03D 27/18](#))}

**U D03D 49/00**

Details or constructional features not peculiar to looms of a particular type (temples [D03J 1/22](#))

D03D 49/02

- Construction of loom framework ~~{WARNING This group is in the process of being reorganised to its subgroups}~~

WARNING*This group is in the process of being reorganised to its subgroups*

U D03D 51/00

**Driving, starting, or stopping arrangements; Automatic stop motions {(loom control associated with fabric inspection on the loom [D03J 1/007](#))}**

D03D 51/002

- Avoiding starting marks ~~{WARNING Not complete, see D03D 51/00}~~

WARNING*Not complete, see [D03D 51/00](#)***Project: N/A (D06N)**

U D06N 3/00

**Artificial leather, oilcloth or { other } material obtained by covering fibrous webs with macromolecular material, e.g. resins, rubber or derivatives thereof**

U D06N 3/0002

- { characterised by the substrate }

D06N 3/0004

- { using ultra-fine two-component fibres, e.g. island/sea, or ultra-fine one component fibres (*< 1 denier*) } ~~{ < 1 denier }~~

**Project: N/A (D06P)**

U D06P 1/00

**General processes of dyeing or printing textiles, or general processes of dyeing leather, furs, or solid macromolecular substances in any form, classified according to the dyes, pigments, or auxiliary substances employed**

U D06P 1/44

- using insoluble pigments or auxiliary substances, e.g. binders

U D06P 1/64

- • using compositions containing low-molecular-weight organic compounds without sulfate or sulfonate groups

U D06P 1/642

- • • Compounds containing nitrogen

U D06P 1/649

- • • • Compounds containing carbonamide, thiocarbonamide or guanyl groups

D06P 1/6495

- • • • {Compounds containing carbonamide -RCON= (*R=H or hydrocarbons*) } ~~{R=H or hydrocarbons}~~

D06P 1/6498

- • • • • {Compounds containing -CONCO-, e.g. phthalimides, hydantoin; Compounds containing RCONHSO<sub>2</sub>R (*R=H or hydrocarbon*) } ~~{R=H or hydrocarbon}~~

**Project: N/A (D21H)**

D21H 3/00

**Paper or cardboard prepared by adding substances to the pulp or to the formed web on the paper-making machine { and by applying substances to finished paper or cardboard (*on the paper-making machine*), also when the intention is to impregnate at least a part of the paper body } ~~(on the paper-making machine), also when the intention is to impregnate at least a part of the paper body }~~**NOTE

A compound is always classified in the last appropriate place.

U D21H 27/00

**Special paper not otherwise provided for, e.g. made by multi-step processes**NOTES

This group provides for the classification of paper with special properties or applications which are only partially or not at all provided for elsewhere in the



classification. Whenever possible, however, these papers are classified according to the criteria used in the other groups of this subclass.

In this group, it is desirable to classify the individual constituents using Combination Sets with symbols chosen from groups [D21H 11/00](#) to [D21H 25/00](#).

D21H 27/002

- { Tissue paper; Absorbent paper ([D21H 21/22](#), [D21H 27/02](#), [D21H 27/20](#) take precedence; toilet paper [A47K 10/00](#); absorbent pads for physiological fluids [A61L 15/16](#); making on paper-making machines [D21F 11/00](#))} ~~{WARNING Not complete. Documents presently classified elsewhere, mainly in D21F and D21H, need reclassification to this group or its subgroups}~~

**WARNING**

*Not complete. Documents presently classified elsewhere, mainly in [D21F](#) and [D21H](#), need reclassification to this group or its subgroups*

**Project: RP0070 (E01F)**

U E01F 8/00

**Arrangements for absorbing or reflecting air-transmitted noise from road or railway traffic (ground installations for reducing aircraft noise [B64F 1/26](#); general building constructions for absorbing or reflecting noise, noise absorption or reflection for buildings [E04B 1/74](#))**

U E01F 8/0005

- {used in a wall type arrangement}

E01F 8/0023

- {Details, e.g. foundations (~~solar cells specially adapted to be used in motorway sound barriers~~ [H01L 31/0426](#) *solar cells specially adapted to be used in motorway sound barriers* [H02S 20/21](#))}

**Project: N/A (E02B)**

E02B

**HYDRAULIC ENGINEERING (ship-lifting [E02C](#); dredging [E02F](#))**

**WARNING**

**[C12.08]**

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

<a href="#">E02B 15/06</a>	covered by	<a href="#">E02B 15/08</a>
<a href="#">E02B 15/08</a>	covered by	<a href="#">E02B15/04B</a>
<a href="#">E02B 15/10</a>	covered by	<a href="#">E02B15/04C</a> to <a href="#">E02B15/04G</a> <a href="#">E02B 15/043</a>

**Project: N/A (E04B)**

U E04B 1/00

**Constructions in general; Structures which are not restricted either to walls, e.g. partitions, or floors or ceilings or roofs(scaffolds, shutterings [E04G](#); structures specially adapted for buildings for special purposes, general layout of buildings, e.g. modular co-ordination, [E04H](#); the particular parts of buildings, see the relevant groups for those parts)**

U E04B 1/35

- Extraordinary methods of construction, e.g. lift-slab, jack-block ([E04B 1/34](#) takes precedence; falsework, shuttering for shaping walls, floors, ceilings or roofs in situ [E04G 11/04](#); conveying or assembling of building materials [E04G 21/00](#); working measure on existing buildings [E04G 23/00](#))

E04B 2001/3583

- {using permanent tensioning means, e.g. cables or rods, to assemble or rigidify structures (*not pre- or poststressing concrete*), e.g. *by tying them around the structure*} (~~not pre- or poststressing concrete~~), e.g. ~~by tying them around the structure~~}

E04B 1/38

- Connections for building structures in general

NOTE

Connections specially adapted for particular building parts or for particular building structures are classified in the groups for those parts or structures, e.g. in groups [E04B 1/21](#), [E04B 2/00](#), [E04B 5/00](#), [E04B 7/00](#) or [E04B 9/00](#) [E04B 9/00](#). Joints not specially adapted for building construction, or of more general application, are classified in the appropriate subclasses, e.g. [F16B](#).

**Project: N/A (E04D)**

E04D

**ROOF COVERINGS; SKY-LIGHTS; GUTTERS; ROOF-WORKING TOOLS  
(coverings of outer walls by plaster or other porous material [E04F 13/00](#))**
NOTE

In this subclass, the following expression is used with the meaning indicated:

- "roof coverings" includes any similar kind of watertight covering against rain, snow, hail, or the like, for other parts of buildings

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:

<a href="#">E04D 3/3645</a>	covered by	<a href="#">E04D 3/363</a>
<a href="#">E04D 3/367</a>	" "	<a href="#">E04D 3/364</a>
<a href="#">E04D 13/18</a>	" "	<a href="#">F24J 2/00</a> , <a href="#">H01L31/048B</a> <a href="#">H02S 20/23</a>

**Project: N/A (E04H)**

E04H

**BUILDINGS OR LIKE STRUCTURES FOR PARTICULAR PURPOSES;  
SWIMMING OR SPLASH BATHS OR POOLS; MASTS; FENCING; TENTS OR  
CANOPIES, IN GENERAL (foundations [E02D](#))**
NOTES

This subclass deals primarily with the layout of buildings as a whole, but includes details which are peculiar to types of buildings or buildings for special purposes, specified in the groups. The word "buildings" does not exclude engineering structures and other constructions

This subclass provides for canopies in general and for canopies similar in construction to tents. For canopies having special application, see the relevant class, e.g. bed canopies [A47C 29/00](#); protecting chairs against the weather [A47C 7/66](#); sunshades or awnings for buildings [E04F 10/00](#)

In this subclass, the term "tent" means a tent or canopy having a supporting means, e.g. frame and a flexible cover

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:

<a href="#">E04H 4/02</a>	covered by	<a href="#">E04H4/00G</a> <a href="#">E04H 4/0018</a> , <a href="#">E04H4/00D</a> <a href="#">E04H 4/0075</a>
<a href="#">E04H 4/04</a>	covered by	<a href="#">E04H4/00G</a> <a href="#">E04H 4/0018</a> , <a href="#">E04H4/00D</a> <a href="#">E04H 4/0075</a>

E04H 14/00

**Buildings for combinations of different purposes not covered in a single previous group of this subclass, e.g. for double purpose ([E04H3/02](#) [E04H 3/02](#), [E04H 9/06](#) take precedence); Buildings of the drive-in type**

**Project: N/A (E06B)****E06B**

**FIXED OR MOVABLE CLOSURES FOR OPENINGS IN BUILDINGS, VEHICLES, FENCES OR LIKE ENCLOSURES IN GENERAL, e.g. DOORS, WINDOWS, BLINDS, GATES( shades or blinds for greenhouses [A01G 9/22](#) ; curtains [A47H](#); lids for car boots or bonnets [B62D 25/10](#) ; skylights [E04B 7/18](#) ; sunshades, awnings [E04F 10/00](#) )**

NOTES

This subclass does not cover combinations of wings or frames with operating, mounting, latching or locking means of the type found in class [E05](#), which are covered by the relevant subclasses of class [E05](#), except such as are covered by groups [E06B 7/086](#) , [E06B 9/00](#) , or [E06B 11/02](#) of this subclass.

In this subclass, the following terms or expressions are used with the meanings indicated:

- "wing" means a swingable, slidable or otherwise movable member such as a door or window, for closing an opening;
- "wing frame" means the peripheral edge or edges which define the outer border of the wing.

For vehicle door or window arrangements, attention is drawn to Note (1) following the title of subclass [B60J](#).

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:

[E06B 11/06](#) covered by [E05B65/00B](#)[E05B 65/0007](#)

**Project: N/A (E21B)****E21B**

**EARTH DRILLING, e.g. DEEP DRILLING (mining, quarrying [E21C](#); making shafts, driving galleries or tunnels [E21D](#)); OBTAINING OIL, GAS, WATER, SOLUBLE OR MELTABLE MATERIALS OR A SLURRY OF MINERALS FROM WELLS**

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:

[E21B 1/12](#) to [E21B 1/38](#) covered by [E21B 1/00](#)

[E21B 7/08](#) covered by [E21B 7/06](#)

[E21B 11/04](#) covered by [E21B 27/00](#)

[E21B 23/12](#) covered by [E21B23/00D](#)[E21B 23/002](#)

[E21B 31/08](#) covered by [E21B 27/00](#)

[E21B 43/22](#) covered by [C09K 8/58](#)

**Project: N/A (E21D)****E21D**

**SHAFTS; TUNNELS; GALLERIES; LARGE UNDERGROUND CHAMBERS (soil-conditioning or soil-stabilising materials [C09K 17/00](#); drilling or cutting machines for mining or quarrying [E21C](#); safety devices, transport, rescue, ventilation or drainage [E21F](#))**

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:

[E21D 9/01](#) covered by [E21D 9/00](#)

[E21D 9/087](#) covered by [E21D 9/00](#)

[E21D 9/093](#) covered by [E21D 9/00](#)

[E21D 13/02](#) covered by [E21D 13/00](#)

[E21D 13/04](#) covered by [E21D 13/00](#)

E21D 15/582	covered by	<a href="#">E21D 15/58</a>
E21D 15/59	covered by	<a href="#">E21D 15/44</a> , <a href="#">E21D 15/58</a>
E21D 17/022	covered by	<a href="#">E21D 17/02</a>
E21D 17/05	covered by	<del>E21D 17/02H</del> <a href="#">E21D 17/0206</a> ,
<a href="#">E21D 17/04</a>		
E21D 17/054	covered by	<a href="#">E21D 17/04</a>
E21D 19/06	covered by	<a href="#">E21D 19/02</a> , <a href="#">E21D 19/04</a>

#### E21D 23/00

Mine roof supports for step- by- step movement, e.g. in combination with provisions for shifting of conveyers, mining machines, or guides therefor  
~~[(N: transport of mine roof support units E21F 13/008; {transport of mine roof support units E21F 13/008; }]~~shifting of mine conveyers at the working face [E21F 13/08](#)]

#### Project: N/A (F02B)

##### U F02B 19/00

Engines characterised by precombustion chambers( engines with incandescent chambers [F02B 9/08](#) )

##### U F02B 19/10

- with fuel introduced partly into pre-combustion chamber, and partly into cylinder( [F02B 19/02](#) to [F02B 19/08](#) take precedence )

##### F02B 19/1095

- {with more than one pre-combustion chamber *(a stepped form of the main combustion chamber above the piston is to be considered as a pre-combustion chamber if this stepped portion is not a squish area)*}~~(a-stepped form of the main combustion chamber above the piston is to be considered as a pre-combustion chamber if this stepped portion is not a squish area)}~~

#### Project: N/A (F02D)

##### U F02D 41/00

Electrical control of supply of combustible mixture or its constituents([F02D 43/00](#) takes precedence )

##### U F02D 41/02

- Circuit arrangements for generating control signals

##### F02D 41/021

- ~~N: {Introducing corrections for particular conditions exterior to the engine (-conjoint control of vehicle sub-units for propelling the vehicle [B60W 30/18](#)-)}~~

#### Project: N/A (F02M)

##### U F02M 35/00

Combustion-air cleaners, air intakes, intake silencers, or induction systems specially adapted for, or arranged on, internal-combustion engines (air cleaners in general [B01D](#))

##### U F02M 35/10

- Air intakes; Induction systems (using kinetic or wave energy of charge in induction systems for improving quantity of charge {[F02B 27/00](#)})

##### U F02M 35/10209

- { Fluid connections to the air intake system; their arrangement of pipes, valves or the like}

##### F02M 35/10236

- • ~~N: {Overpressure or vacuum relief means; Burst protection}~~

##### F02M 59/00

Pumps specially adapted for fuel-injection and not provided for in groups [F02M 39/00](#) to [F02M 57/00](#), { e.g. rotary cylinder-block type pumps}(general features of pumps [F04](#))

#### NOTE

[  
- in this group the following indexing codes are used: [F02M2700/07G](#), [F02M2700/13E](#), [F02M 2700/1323](#), [F02M 2700/1341](#), [F02M 2700/1352](#), [F02M 2700/1388](#)

**Project: N/A (F02P)****U F02P 3/00****Other installations****U F02P 3/06**

- having capacitive energy storage (piezo-electric or electrostatic ignition [F02P 3/12](#))

**U F02P 3/08**

- • Layout of circuits (for low tension [F02P 3/10](#))

**F02P 3/0876**

- • • { the storage capacitor being charged by means of an energy converter *(DC-DC converter) or of an intermediate storage inductance*} ~~(DC-DC converter) or of an intermediate storage inductance~~

**Project: N/A (F03C)****F03C**

**POSITIVE-DISPLACEMENT ENGINES DRIVEN BY LIQUIDS (positive-displacement engines for liquids and elastic fluids [F01](#); positive-displacement machines for liquids [F04](#); fluid-pressure actuators [F15B](#); fluid gearing [F16H](#))**

**NOTE**

Attention is drawn to the notes preceding class [F01](#), especially as regards the meanings of "positive displacement", "rotary-piston machines", "oscillating-piston machines", "rotary-piston", "co-operating members", "movement of co-operating members", "teeth or tooth-equivalents", and "internal axis".

**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:

<a href="#">F03C 1/253</a>	covered by	<a href="#">F03C</a>
<a href="#">F03C 1/28</a>	" "	<a href="#">F03C 1/0406</a> , <a href="#">F03C 1/0605</a>
<a href="#">F03C 1/30</a>	" "	<a href="#">F03C 1/0409</a> , <a href="#">F03C 1/0631</a> ,
<a href="#">F03C 1/0668</a>		
<a href="#">F03C 1/32</a>	" "	<a href="#">F03C 1/0415</a> , <a href="#">F03C 1/0626</a> ,
<a href="#">F03C 1/0652</a>		
<a href="#">F03C 1/34</a>	" "	<a href="#">F03C 1/0435</a> , <a href="#">F03C 1/0615</a> ,
<a href="#">F03C 1/0655</a>		
<a href="#">F03C 1/36</a>	" "	<a href="#">F03C 1/0435</a> , <a href="#">F03C 1/0615</a> ,
<a href="#">F03C 1/0655</a>		
<a href="#">F03C 1/38</a>	" "	<a href="#">F03C 1/0435</a> , <a href="#">F03C 1/0615</a> ,
<a href="#">F03C 1/0655</a>		
<a href="#">F03C 1/40</a>	" "	<del><a href="#">F03C1/04N</a></del> <a href="#">F03C 1/0447</a> , <del><a href="#">F03C1/06K</a></del> <a href="#">F03C 1/0678</a>

**Project: N/A (F04D)****U F04D 29/00**

**Details, component parts, or accessories( machine elements in general [F16](#) )**

**U F04D 29/04**

- Shafts or bearings, or assemblies thereof( specially adapted for elastic fluid pumps [F04D 29/05](#) )

**F04D 29/0405**

- • {joining shafts, e.g. rigid couplings, quill shafts}~~{WARNING: The group [F04D 29/0405](#) is no longer used for the classification of new documents as from July 1st, 2007. The backlog of this group is being continuously reclassified to [F04D 29/044](#) and [F04D 29/054](#)}~~

**WARNING**

*The group [F04D 29/0405](#) is no longer used for the classification of new documents as from July 1st, 2007. The backlog of this group is being continuously reclassified to [F04D 29/044](#) and [F04D 29/054](#)*

**Project: N/A (F15B)**

- U F15B 15/00 Fluid-actuated devices for displacing a member from one position to another( motors for continuous movement [F01](#) to [F03](#) ); Gearing associated therewith
- U F15B 15/02 • Mechanical lay-out characterised by the means for converting the movement of the fluid-actuated element into movement of the finally-operated member
- U F15B 15/06 • • for mechanically converting rectilinear movement into non- rectilinear movement
- F15B 15/068 • • • ~~N:-~~{the motor being of the helical type}}

**Project: N/A (F16B)**

- U F16B 19/00 Bolts without screw-thread; Pins, including deformable elements (in screwed connections [F16B 29/00](#)); Rivets (means for preventing withdrawal [F16B 21/00](#))
- U F16B 19/04 • Rivets; Spigots or the like fastened by riveting (lead seals [G09F 3/00](#))
- U F16B 19/08 • • Hollow rivets; Multi-part rivets
- F16B 19/10 • • • fastened by expanding mechanically

NOTES

Subject matter relating to hollow or single-part rivets fastened by a pull-through mandrel is classified in ~~19/10B2B~~[F16B 19/1045](#)

Subject matter relating to hollow or single-part rivets fastened by a drive pin is classified in [F16B 19/1081](#)

**Project: N/A (F16C)**

- U F16C 32/00 Bearings not otherwise provided for
- U F16C 32/04 • using magnetic or electric supporting means
- U F16C 32/0406 • • { Magnetic bearings}
- U F16C 32/044 • • • { Active magnetic bearings}
- U F16C 32/0444 • • • • { Details of devices to control the actuation of the electromagnets}
- U F16C 32/0451 • • • • • { Details of controllers, i.e. the units determining the power to be supplied, e.g. comparing elements, feedback arrangements with P.I.D. control}
- F16C 32/0455 • • • • • { including digital signal processing (DSP) and analog/digital conversion ~~(A/D, D/A)~~[\(A/D, D/A\)](#)}

**Project: N/A (F16H)**

- U F16H 37/00 Combinations of mechanical gearings, not hereinbefore provided for(applications of "underdrives" or "overdrives" in motor vehicles, combinations with differential gearings in motor vehicles [B60K](#))
- U F16H 37/12 • Gearings comprising primarily toothed or friction gearing, links or levers, and cams, or members of at least two of these types( [F16H 21/14](#) , [F16H 21/28](#) , [F16H 21/30](#) take precedence; toothed or friction gearing or cam gearing with only an additional lever or link, see the appropriate group for the main gearing )
- F16H 2037/128 • • {Generating reciprocating motion by a planetary gear [\(ratio 2:1\) using endless flexible members](#)}(ratio 2:1)using endless flexible members}
- U F16H 57/00 General details of gearing( of screw-and-nut gearing [F16H 25/00](#) ; of fluid gearing [F16H 39/00](#) - [F16H 43/00](#) )



F16H 57/02

- Gearboxes; Mounting gearing therein

**NOTE**

When classifying in this group, in the absence of an indication to the contrary, classification is made in all appropriate subgroups.

**WARNING**

Subgroups of F16H 57/02 are not complete pending reclassification; see provisionally also respective higher groups

Subgroups of F16H 57/02 are not complete pending reclassification; see provisionally also respective higher groups

F16H 57/04

- Features relating to lubrication or cooling{or heating} ({ in hydrokinetic gearing [F16H 41/30](#) ; } control of lubrication or cooling in hydrostatic gearing [F16H 61/4165](#) )

**WARNING**

Subgroups of F16H 57/04 are not complete pending reclassification; see provisionally also respective higher groups

Subgroups of F16H 57/04 are not complete pending reclassification; see provisionally also respective higher groups

**U F16H 61/00**

**Control functions within{control units of}change-speed- or reversing-gearings for conveying rotary motion;{Control of exclusively fluid gearing, friction gearing, gearings with endless flexible members or other particular types of gearing}**

U F16H 61/04

- Smoothing ratio shift

F16H 2061/0481

- • {during range shift from drive (D) or reverse (R) to neutral ~~(N)~~~~(N)~~}

F16H 2061/0488

- • {during range shift from neutral ~~(N)~~ to drive (D)}~~(N)~~to-drive-(D)}

U F16H 61/26

- Generation or transmission of movements for final actuating mechanisms

**NOTES**

The generation or transmission of movements comprising only the selector apparatus, is classified in group [F16H 59/00](#) .

The generation or transmission of movements, when part of the final output mechanisms, is classified in group [F16H 63/00](#) .

U F16H 61/28

- • with at least one movement of the final actuating mechanism being caused by a non-mechanical force, e.g. power-assisted

U F16H 61/30

- • • Hydraulic{or pneumatic}motors{or related fluid control means}therefor

U F16H 2061/301

- • • • {for power assistance, i.e. servos with follow up action}

F16H 2061/302

- • • • {with variable force amplification, e.g. force is depending on selected gear or on actuator force ~~(non-linear amplification)~~~~(non-linear amplification)~~}

**Project: N/A (F16K)****U F16K 35/00**

**Means to prevent accidental or unauthorised actuation**

U F16K 35/02

- to be locked or disconnected by means of a pushing or pulling action

U F16K 35/022

- • {the locking mechanism being actuated by a separate actuating element}

F16K 35/025

- • • {said actuating element being operated manually ~~(e.g. a push-button located in the valve actuator)~~~~(e.g. a push-button located in the valve actuator)~~}

**Project: N/A (F16L)**

- U F16L 3/00** Supports for pipes, cables or protective tubing, e.g. hangers, holders, clamps, cleats, clips, brackets (anchors for holding pipes on or under the ground [F16L 1/06](#); {sound-damping supports [F16L 55/035](#); supports for insulated pipes [F16L 59/135](#)})
- U F16L 3/08 • substantially surrounding the pipe, cable or protective tubing
- U F16L 3/10 • • divided, i.e. with two {or more} members engaging the pipe, cable or protective tubing
- F16L 3/1075 • • • ~~{N: {~~with two members, the two members being joined with a hinge on one side and fastened together on the other side~~}}~~

**Project: N/A (F16M)**

- U F16M 11/00** Stands or trestles as supports for apparatus or articles placed thereon{Stands for scientific apparatus such as gravitational force meters} ( without heads [F16K 13/00](#) ; easels or stands for blackboard or the like [A47B 97/04](#) ; show-stands [A47F 7/00](#) ; for workmen [E04G 1/32](#) ; { sockets or holders for poles or posts [E04H 12/22](#) } ; supporting, suspending for lighting devices [F21V 21/00](#) ; special modifications for particular apparatus or articles, see the appropriate subclasses )
- U F16M 11/20 • Undercarriages with or without wheels
- U F16M 11/24 • • changeable in height or length of legs, also for transport only,{e.g. by means of tubes screwed into each other}( [F16M 11/42](#) takes precedence )
- U F16M 11/242 • • • {by spreading of the legs( [F16M 11/32](#) takes precedence )}
- WARNING  
This group is not complete pending reclassification; see also group [F16M 11/24](#) or [F16M 11/32](#) ]
- F16M 11/245 • • • • ~~{Members limiting spreading of legs, e.g. "umbrella legs"}~~  
*{Members limiting spreading of legs, e.g. "umbrella legs"}* (-for supports with three or more telescoping legs [F16M 11/34](#)-)}
- WARNING  
this group is not complete pending a reorganisation, see also [F16M 11/24](#) and [F16M 11/34](#)

**Project: N/A (F17C)**

- U F17C 13/00** Details of vessels or of the filling or discharging of vessels
- U F17C 13/04 • Arrangement or mounting of valves (valves per se [F16K](#); {snap-coupling of nipples [F16L 37/00](#)})
- F17C 13/045 • • {Automatic change-over switching assembly for bottled gas systems with two *(or more) gas containers*}~~(or more) gas containers~~
- U F17C 2201/00** Vessel construction, in particular geometry, arrangement or size
- U F17C 2201/05 • Size
- F17C 2201/052 • • large *(>1000 m3)*~~(>1000 m3)~~
- F17C 2201/054 • • medium *(>1 m3)*~~(>1 m3)~~
- F17C 2201/056 • • Small *(<1 m3)*~~(<1 m3)~~
- F17C 2201/058 • • portable *(<30 l)*~~(<30 l)~~
- U F17C 2223/00** Handled fluid before transfer, i.e. state of fluid when stored in the vessel or before transfer from the vessel
- U F17C 2223/03 • characterised by the pressure level

F17C 2223/035

• • High pressure (~~>10 bar~~)(>10 bar)

F17C 2223/036

• • Very high pressure (~~>80 bar~~)(>80 bar)**Project: N/A (F21V)**

F21V

**DETAILS OF LIGHTING DEVICES, OF GENERAL APPLICATION**NOTES

1. Groups [F21V 1/00-F21V 14/00](#) cover details of those parts involved in light emission or distribution. Groups [F21V 15/00-F21V 31/00](#) cover details of those parts not so involved.

2. Details of non-electric lighting devices or systems are classified in groups [F21V 35/00-F21V 37/00](#) only if a special adaptation related to the use of a non-electric light source is of interest.

In this subclass have been included only those lighting device details which were considered to be of a kind applicable to the lighting devices of more than one of the subclasses [F21L](#), **F21M**, **F21P**, **F21Q**, [F21S](#). Inventions concerned with details of the kinds provided for are to be classified in this subclass, even though they are only stated to be applied to a device of a single subclass.

WARNING

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

[F21V 8/00](#) covered by ~~G02B6/00~~[G02B 6/0001](#)

**Project: N/A (F23D)**

F23D 21/00

**Burners not otherwise provided for {~~Note : combinations of spraying or vaporising means covered by sub-groups F23D 5/00 and F23D 21/00 are classified in F23D 11/008~~}**

NOTE

*{ combinations of spraying or vaporising means covered by sub-groups [F23D 5/00](#) and [F23D 21/00](#) are classified in [F23D 11/008](#)}*

**Project: N/A (F23J)**

U F23J 2215/00

**Preventing emissions (solids only [F23J 2217/00](#))**

U F23J 2215/10

• Nitrogen; Compounds thereof

F23J 2215/101

• • Nitrous oxide (~~N<sub>2</sub>O~~)(N<sub>2</sub>O)**Project: N/A (F24J)**

F24J 2/00

Use of solar heat, e.g. solar heat collectors (distillation or evaporation of water using solar energy [C02F 1/14](#); devices for producing mechanical power from solar energy [F03G 6/00](#); semiconductor devices *especially adapted for converting solar energy into electrical energy* ~~H01L 25/00; H01L 31/04~~[H01L 31/00](#); ~~semiconductor devices including arrays of solar cells using heat energy H01L 31/058; generators in which light radiation is directly converted into electrical energy H02N 6/00; photovoltaic [PV] cells including means directly associated with the PV cell to utilise heat energy H01L 31/0525; PV modules including means associated with the PV module to utilise heat energy H02S 40/44~~)

NOTE

*Supporting structures also intended for use with photovoltaic modules should further be classified in the relevant groups of subclass [H02S](#).*

F24J 2/38

- employing tracking means ([F24J 2/02](#), [F24J 2/06](#) take precedence; ~~direction-finders for determining the direction from which electromagnetic waves are being received G01S 3/78 {, e.g. solar tracking systems G01S 3/7861}; control of position or direction G05D 3/00 {, e.g. G05D 3/105}; rotary supports or mountings therefor [F24J 2/54](#); supporting structures of photovoltaic modules for generation of electric power specially adapted for solar tracking systems [H02S 20/32](#))~~

**Project: N/A (F25J)**

U F25J 1/00

Processes or apparatus for liquefying or solidifying gases or gaseous mixtures {(for ammonia in general [C01C 1/00](#); solidification of carbonic acid [C01B 31/22](#); recovering volatile solvents by condensation [B01D 5/00](#); vapor recovery systems combined with filling nozzles [B67D 7/54](#))(not used)}

U F25J 1/02

- requiring the use of refrigeration, e.g. of helium or hydrogen { Details and kind of the refrigeration system used; Integration with other units or processes; Controlling aspects of the process (not used)}

F25J 1/0203

- { using a single-component refrigerant [[SCR](#)] fluid in a closed vapor compression cycle (SCR) fluid in a closed vapor compression cycle ([F25J 1/0211](#) takes precedence)(not used) (not used)}

**Project: N/A (F26B)**

F26B

**DRYING SOLID MATERIALS OR OBJECTS BY REMOVING LIQUID THEREFROM**( racks for drying fruit and vegetables [A01F 25/12](#) ; drying foodstuffs [A23](#); drying hair [A45D 20/00](#) ; body-drying implements [A47K 10/00](#) ; drying household articles [A47L](#), { e.g. drying footwear [A47L 23/20](#) ; } drying gases and vapours [B01D](#); chemical and physical processes for dewatering or like separating liquids from solids [B01D 43/00](#) ; centrifugal apparatus [B04](#); drying ceramics [C04B 33/30](#) ; drying yarns and fabrics in association with some other form of treatment [D06C](#); drying frames for laundry without heating or positive air circulation, domestic and like spin-dryers, wringing and hot pressing laundry [D06F](#); furnaces, kilns, ovens [F27](#); { treatment including a drying step of semiconductor substrates, e.g. wafers, [H01L 21/67028](#) })

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:

<a href="#">F26B 11/06</a>	covered by	<a href="#">F26B 11/0486</a>
<a href="#">F26B 13/02</a>	covered by	<a href="#">F26B 13/10</a>
<a href="#">F26B 13/04</a>	covered by	<a href="#">F26B 13/10</a>
<a href="#">F26B 13/20</a>	covered by	<a href="#">F26B 13/104</a>
<a href="#">F26B 23/08</a>	covered by	<a href="#">F26B 3/34B</a> <a href="#">F26B 3/343</a>
<a href="#">F26B 3/347</a>		

**Project: N/A (F27D)**

U F27D 1/00

**Casings; Linings; Walls; Roofs (refractory materials [C04B](#); firebridges for combustion chambers [F23M 3/00](#))**

F27D 1/10

- Monolithic linings; Supports therefor {~~Note: supports are classified in [F27D 1/14](#)~~}

NOTE

{~~supports are classified in [F27D 1/14](#)~~}

U F27D 1/16

- Making or repairing linings {increasing the durability of linings or breaking away linings}

- U F27D 1/1636      • • {Repairing linings by projecting or spraying refractory materials on the lining}
- U F27D 1/1642      • • • {using a gunning apparatus}
- F27D 1/1647      • • • • {the projected materials being partly melted, e.g. by exothermic reactions of metals *(Al, Si) with oxygen*}~~(Al, Si) with oxygen~~
- U F27D 3/00      **Charging; Discharging; Manipulation of charge (moving charge through a furnace [F27B 9/14](#))**
- U F27D 3/15      • Tapping equipment; Equipment for removing {or retaining} slag
- U F27D 3/1509      • • {Tapping equipment}
- F27D 3/1536      • • • { Devices for plugging tap holes, e.g. plugs stoppers}~~{ Note: the devices fixed permanently to the melt container are classified in F27D 3/1509}~~

**NOTE**

*{ the devices fixed permanently to the melt container are classified in [F27D 3/1509](#)}*

**Project: N/A (F28D)****F28D 21/00**

**Heat-exchange apparatus not covered by any of the groups [F28D 1/00](#) to [F28D 20/00](#) { Note: Particular use of heat exchangers is classified in [F28D 21/00](#) and subgroups, whereas additionally the type of the heat exchangers is classified in the groups [F28D 1/00](#) to [F28D 20/00](#)}**

**NOTE**

*{ Particular use of heat exchangers is classified in [F28D 21/00](#) and subgroups, whereas additionally the type of the heat exchangers is classified in the groups [F28D 1/00](#) to [F28D 20/00](#)}*

**Project: N/A (F41H)**

- U F41H 13/00      **Means of attack or defence not otherwise provided for {(details of radar or sonar systems [G01S 7/00](#))}**
- U F41H 13/0012      • { Electrical discharge weapons, e.g. for stunning, such as tasers}
- F41H 13/0018      • • ~~N~~ {for nearby electrical discharge, i.e. the electrodes being positioned on the device and the device brought manually or otherwise into contact with a nearby target (batons with electric discharge capability [F41B 15/04](#); electric shock devices for animals [A01K 15/02](#))~~}~~}

**Project: N/A (G01C)**

- U G01C 21/00      **Navigation; Navigational instruments not provided for in preceding groups( measuring distance traversed on the ground by a vehicle [G01C 22/00](#) ; measuring linear or angular speed or acceleration [G01P](#) ; control of position, course, altitude or attitude of vehicles [G05D 1/00](#) ; traffic control systems [G08G](#) )**
- U G01C 21/26      • specially adapted for navigation in a road network
- U G01C 21/34      • • Route searching; Route guidance
- U G01C 21/36      • • • Input/output arrangements of navigation systems;{ Input arrangements for transferring data to be processed into a form capable of being handled by the computer, and output arrangements for transferring data from processing unit to output unit, e.g. interface arrangements [G06F 3/00](#) ; pointing devices displaced or positioned by the user, e.g. mice, trackballs, pens or joysticks, and accessories therefor [G06F 3/033](#) ; interaction techniques for graphical user interfaces, e.g. interaction with windows, icons or menus [G06F 3/048](#) ; Manipulating 3D models or images for computer graphics [G06T 19/00](#) }

- U G01C 21/3626
  - • • {Details of the output of route guidance instructions( Traffic control systems for road vehicles involving transmission of navigation instructions to the vehicle [G08G 1/0968](#) )}
- U G01C 21/3635
  - • • • {Guidance using 3D or perspective road maps}
- G01C 21/3638
  - • • • • ~~{including 3D objects and buildings(three dimensional [3D])}~~~~{including 3D objects and buildings (three dimensional [3D])}~~ modelling, e.g. data description of 3D objects [G06T 17/00](#) ; geographic models [G06T 17/05](#) ]
- G01C 21/3688
  - • • • ~~{Systems comprising multiple parts or multiple output devices(not client-server)}~~~~{Systems comprising multiple parts or multiple output devices (not client-server)}~~, e.g. detachable faceplates, key fobs or multiple output screens}

**Project: N/A (G01D)**

- U G01D 5/00
 

**Mechanical means for transferring the output of a sensing member; Means for converting the output of a sensing member to another variable where the form or nature of the sensing member does not constrain the means for converting; Transducers not specially adapted for a specific variable ([G01D 3/00](#) takes precedence; specially adapted for apparatus giving results other than momentary value of variable [G01D 1/00](#); sensing members, see the relevant subclasses, e.g. of [G01](#), [H01](#); for converting a single current or a single voltage into a mechanical displacement [G01R 5/00](#); specially adapted for high-voltage or high-current measuring arrangements [G01R 15/04](#), [G01R 15/14](#); measuring currents or voltages using digital measurement techniques [G01R 19/25](#); transmission systems for measured values, control or similar signals [G08C](#), e.g. electrical signals [G08C 19/00](#))**

NOTE

The subgroups of this main group are distinguished by the means which is of major importance. Thus the mere application of other means for giving a final indication does not affect the classification.

- U G01D 5/12
  - using electric or magnetic means ([G01D 5/06](#) takes precedence)
- U G01D 5/244
  - • influencing characteristics of pulses or pulse trains; generating pulses or pulse trains
- U G01D 5/245
  - • • using a variable number of pulses in a train
- U G01D 5/2451
  - • • • {Incremental encoders ([G01D 5/2454](#) takes precedence)}
- G01D 5/2452
  - • • • • {incorporating two or more tracks having an (*n, n+1, ...*) relationship}~~(*n, n+1, ...*) relationship~~

**Project: N/A (G01F)**

- U G01F 23/00
 

**Indicating or measuring liquid level, or level of fluent solid material, e.g. indicating in terms of volume, indicating by means of an alarm (in wells [E21B 47/04](#); adaptation to, or mounting on, steam boilers [F22B 37/78](#); level regulation [G05D](#); alarm devices [G08B](#); {for accumulators [H01M 10/48](#))}**
- U G01F 23/04
  - by dip members, e.g. dip-sticks
- G01F 23/045
  - • {cleaning means therefor (*e.g. dip-stick wipers*)}~~(*e.g. dip-stick wipers*)}~~

**Project: N/A (G01J)**

- U G01J 1/00
 

**Photometry, e.g. photographic exposure meter (spectrophotometry [G01J 3/00](#); specially adapted for radiation pyrometry [G01J 5/00](#)){exposure meters built in cameras [G03B 17/06](#)}**
- U G01J 1/10
  - by comparison with reference light or electric value {provisionally void}



- U G01J 1/16      • • using electric radiation detectors ([G01J 1/20](#) takes precedence)
- U G01J 2001/161      • • • {Ratio method, i.e.  $I_m/I_r$  }
- G01J 2001/1615      • • • • {Computing a difference/sum ratio, i.e.  $(I_m - I_r) / (I_m + I_r)$  } ~~$(I_m - I_r)/(I_m + I_r)$~~

**Project: N/A (G01N)**

- U G01N 1/00      Sampling; Preparing specimens for investigation**
- U G01N 1/28      • Preparing specimens for investigation{ including physical details of (bio-)chemical methods covered elsewhere, e.g. [G01N 33/50](#) , [C12Q](#) } ( mounting specimens on microscopic slides [G02B 21/34](#) ; means for supporting the objects or the materials to be analysed in electron microscopes [H01J 37/20](#) ; { laboratory gas handling apparatus [B01L 5/00](#) } )
- U G01N 1/36      • • Embedding or analogous mounting of samples
- G01N 2001/368      • • • {Mounting multiple samples in one block, e.g. TMA (*Tissue Micro-arrays*) } ~~$(Tissue Micro-arrays)$~~
- U G01N 15/00      Investigating characteristics of particles; Investigating permeability, pore-volume, or surface-area of porous materials( identification of micro-organisms [C12Q](#) )**
- U G01N 15/10      • Investigating individual particles
- U G01N 15/14      • • Electro-optical investigation, e.g. flow cytometers
- G01N 15/1468      • • • {with spatial resolution of the texture or inner structure of the particle}~~{ Informative Note References listed below indicate CPC places which could also be interest when carrying out a search in respect of the subject matter covered by the preceding group: -counting objects disposed at random with size distinction [G06M 11/04](#) -extraction of features from image for pattern recognition [G06K 9/46](#) -specific image analysis method for the recognition of microscopic objects [G06K 9/00127](#) -image enhancement in general [G06T 5/00](#) -image analysis in general [G06T 7/00](#) }~~

**NOTE**

References listed below indicate CPC places which could also be of interest when carrying out a search in respect of the subject matter covered by the preceding group:

- counting objects disposed at random with size distinction [G06M 11/04](#)
- extraction of features from image for pattern recognition [G06K 9/46](#)
- specific image analysis method for the recognition of microscopic objects* [G06K 9/00127](#)
- *image* enhancement [G06T 5/00](#)
- image analysis [G06T 7/00](#)

**Project: RP0071 (G01N)**

- M G01N 21/00      Investigating or analysing materials by the use of optical means, i.e. using infra-red, visible, or ultra-violet light ( -[G01N 3/00](#) to -[G01N 19/00](#) take precedence; measuring stress in general [G01L 1/00](#) ; optical elements of measuring instruments [G02B](#) )**

**NOTE**

This group does not cover the investigation of spectral properties of light per se, or measurements of the properties of materials where spectral properties of light are sensed and primary emphasis is placed on creating, detecting or analysing the spectrum providing that the properties of the materials to be investigated

are of minor importance (see also Note (4) after the title of class [G01](#)). Those subjects are covered by group [G01J 3/00](#).

- U G01N 21/17 · Systems in which incident light is modified in accordance with the properties of the material investigated( where the material investigated is optically excited causing a change in wavelength of the incident light [G01N 21/63](#) )
- U G01N 21/25 · · Colour; Spectral properties, i.e. comparison of effect of material on the light at two or more different wavelengths or wavelength bands
- U G01N 21/31 · · · Investigating relative effect of material at wavelengths characteristic of specific elements or molecules, e.g. atomic absorption spectrometry({ [G01N 21/72](#) takes precedence )}
- U G01N 21/35 · · · · using infra-red light( [G01N 21/39](#) takes precedence )
- M G01N 21/3504 · · · · {for analysing gases, e.g. ~~multigases~~*multi-gas* analysis}
- M G01N 21/3518 · · · · · { Devices using ~~the~~-gas filter correlation ~~method including the radiometric type, i.e. without instrumental source~~*techniques*; -Devices using gas pressure modulation ~~method~~*techniques*

**NOTE**

*This group also covers devices without instrumental sources, e.g. radiometric-type devices using ambient infra-red light.*

- M G01N 21/3554 · · · · { for determining moisture} *content*
- M G01N 21/3559 · · · · · {in sheets, e.g. in paper}{~~WARNING~~*Not complete, see also G01N 21/3554*}

**WARNING**

*Group [G01N 21/3559](#) is incomplete pending reclassification of documents from group [G01N 21/3554](#).*

*Until reclassification is complete, groups [G01N 21/3559](#) and [G01N 21/3554](#) should be considered in order to perform a complete search.*

- M G01N 21/3563 · · · · {for analysing solids; ~~preparation~~*Preparation* of samples therefor(~~sampling or preparing specimen for investigation in general~~ [G01N 1/00](#))}
- M G01N 21/3577 · · · · { for analysing liquids, e.g. polluted water}

**WARNING**

~~Not complete, see also~~*Group [G01N 21/3577](#) is incomplete pending reclassification of documents from group [G01N 21/35](#).*

*Until reclassification is complete, groups [G01N 21/3577](#) and [G01N 21/35](#) should be considered in order to perform a complete search.*

- M G01N 21/3581 · · · · {using far ~~infrared~~*infra-red light*; -using Terahertz radiation}
- M G01N 21/3586 · · · · · {by Terahertz time domain spectroscopy [THz-TDS]}

**WARNING**

~~Not complete, see also~~*Group [G01N 21/3586](#) is incomplete pending reclassification of documents from group(s) [G01N 21/3581](#).*

*Until reclassification is complete, groups [G01N 21/3586](#) and [G01N 21/3581](#) should be considered in order to perform a complete search.*

- M G01N 21/359 · · · · {using near infra-red light}

- U G01N 21/55      · · Specular reflectivity
- M G01N 21/552    · · · {Attenuated total reflection}

**Project: N/A (G01N)**

- U G01N 21/84      · Systems specially adapted for particular applications
- U G01N 21/88      · · Investigating the presence of flaws or contamination
- U G01N 21/90      · · · in a container or its contents( [G01N 21/91](#) takes precedence )
- U G01N 21/9018    · · · · {Dirt detection in containers}
- G01N 21/9027    · · · · · {in containers after filling}

WARNING

~~Not complete, see also G01N 21/90 , G01N21/90B , G01N21/90C~~

*Not complete, see also [G01N 21/90](#) , [G01N 21/9018](#) , [G01N 21/9036](#)*

- G01N 21/9045    · · · · {Inspection of ornamented or stippled container walls}

WARNING

~~Not complete, see also G01N 21/90 , G01N21/90B , G01N21/90C~~

*Not complete, see also [G01N 21/90](#) , [G01N 21/9018](#) , [G01N 21/9036](#)*

- U **G01N 29/00**      Investigating or analysing materials by the use of ultrasonic, sonic or infrasonic waves; Visualisation of the interior of objects by transmitting ultrasonic or sonic waves through the object( [G01N 3/00](#) to [G01N 27/00](#) take precedence; measuring or indicating of ultrasonic, sonic or infrasonic waves in general [G01H](#); systems using the reflection or reradiation of acoustic waves, e.g. acoustic imaging, [G01S 15/00](#) ; obtaining records by techniques analogous to photography using ultrasonic, sonic or infrasonic waves [G03B 42/06](#) ; { medical diagnosis by ultrasounds [A61B 8/00](#) ; generating or transmitting mechanical or acoustic waves [B06B](#), [G10K](#); seismic or acoustic prospecting or detecting [G01V 1/00](#) } )
- U G01N 29/22      · Details,{e.g. general constructional or apparatus details}
- U G01N 29/24      · · Probes{( transducers for acoustic waves [B06B](#) , [G10K](#) ; for measuring [G01H](#) )}
- G01N 29/2412    · · · {using the magnetostrictive properties of the material to be examined, e.g. electromagnetic acoustic transducers ~~[EMAT](#)~~([EMAT](#)); ( investigating the presence of flaws using eddy currents [G01N 27/90](#) , magnetostrictive transducers [B06B 1/08](#) , measuring magnetostrictive properties [G01R 33/18](#) )}
- U **G01N 33/00**      Investigating or analysing materials by specific methods not covered by the preceding groups
- U G01N 33/48      · biological material, e.g. blood, urine( [G01N 33/02](#) to [G01N 33/14](#) , [G01N 33/26](#) , [G01N 33/44](#) , [G01N 33/46](#) take precedence; determining the germinating capacity of seeds [A01C 1/02](#) ); Haemocytometers( counting blood corpuscles distributed over a surface by scanning the surface [G06M 11/02](#) )

- U G01N 33/50
- • Chemical analysis of biological material, e.g. blood, urine; Testing involving biospecific ligand binding methods; Immunological testing( measuring or testing processes involving enzymes or micro-organisms, compositions or test papers therefor; processes for forming such compositions, condition responsive control in microbiological or enzymological processes [C12Q](#) )
- NOTES**
- The expression "involving", when used in relation to a material includes the testing for the material as well as employing the material as a determinant or reactant in a test for a different material.
- In groups [G01N 33/52](#) to [G01N 33/96](#) , in the absence of an indication to the contrary, an invention is also classified in the last appropriate place.
- Documents relating to new peptides or new DNA or its corresponding mRNA, encoding for the peptides, and their use in measuring or testing processes are classified in subclass [C07K](#) or in group [C12N 9/00](#) according to the peptides, with the appropriate indexing codes relating to their use in diagnostics. However, if the investigating or analysing aspects are of interest, the documents are classified in this group
- U G01N 33/58
- • • involving labelled substances( [G01N 33/53](#) takes precedence; for testing in vivo [A61K 49/00](#) )
- G01N 33/581
- • • {with enzyme label (*including co-enzymes, co-factors, enzyme inhibitors or substrates*)}(including co-enzymes, co-factors, enzyme inhibitors or substrates)}
- U G01N 35/00
- Automatic analysis not limited to methods or materials provided for in any single one of groups [G01N 1/00](#) to [G01N 33/00](#) ; Handling materials therefor**
- U G01N 2035/00178
- {Special arrangements of analysers}
- G01N 2035/00277
- • {Special precautions to avoid contamination (*e.g. enclosures, glove- boxes, sealed sample carriers, disposal of contaminated material*)}(e.g. enclosures, glove-boxes, sealed sample carriers, disposal of contaminated material)}
- U G01N 2333/00
- Assays involving biological materials from specific organisms or of a specific nature**
- NOTE**
- In groups [G01N 2333/47](#) to [G01N 2333/994](#) indexing codes are assigned according to the chemical nature of the materials irrespective of the source organism.
- U G01N 2333/81
- Protease inhibitors
- G01N 2333/8103
- • Exopeptidase (*E.C. 3.4.11-19 inhibitors*)(~~E.C. 3.4.11-19~~)inhibitors
- G01N 2333/8107
- • Endopeptidase (*E.C. 3.4.21-99 inhibitors*)(~~E.C. 3.4.21-99~~)inhibitors
- G01N 2333/811
- • • Serine protease (*E.C. 3.4.21 inhibitors*)(~~E.C. 3.4.21~~)inhibitors
- G01N 2333/8139
- • • ~~Cysteine protease~~(~~E.C. 3.4.22~~) *Cysteine protease (E.C. 3.4.22)* inhibitors, e.g. cystatin
- G01N 2333/8142
- • • ~~Aspartate protease~~(~~E.C. 3.4.23~~) *Aspartate protease (E.C. 3.4.23)* inhibitors, e.g. HIV protease inhibitors
- G01N 2333/8146
- • • ~~Metalloprotease~~(~~E.C. 3.4.24~~) *Metalloprotease (E.C. 3.4.24)* inhibitors, e.g. tissue inhibitor of metallo proteinase, TIMP
- U G01N 2333/90
- Enzymes; Proenzymes
- NOTE**
- Enzymes are generally categorised below according to the "Nomenclature and Classification of Enzymes" of the International Commission on Enzymes.

Where appropriate, this designation appears in the groups below in parenthesis.

- U G01N 2333/902      • • Oxidoreductases (1.)
- U G01N 2333/90245      • • • acting on paired donors with incorporation of molecular oxygen (1.14)
- U G01N 2333/90248      • • • • with NADH or NADPH as one of the donors, and incorporation of one atom of oxygen 1.14.13
- U G01N 2333/90251      • • • • • with a definite EC number (1.14.13.-)
- G01N 2333/90254      • • • • • Nitric-oxide synthase (NOS(NOS; 1.14.13.39); 1.14.13.39)
- U G01N 2333/90258      • • • • with a reduced iron-sulfur protein as one donor (1.14.15) in general
- U G01N 2333/90261      • • • • • with a definite EC number (1.14.15.-)
- G01N 2333/90264      • • • • • Steroid 11 beta monooxygenase (P-450 protein)(1.14.15.4)(P-450 protein)(1.14.15.4)
- G01N 2333/90267      • • • • • [Cholesterol monooxygenase (cytochrome P 450scc)(1.14.15.6)(cytochrome P 450scc)(1.14.15.6)
- G01N 2333/906      • • • acting on nitrogen containing compounds as donors (1.4, 1.5, 1.7)(1.4, 1.5, 1.7)
- U G01N 2333/914      • • Hydrolases (3)
- U G01N 2333/948      • • • acting on peptide bonds (3.4)
- U G01N 2333/95      • • • • Proteinases, i.e. endopeptidases (3.4.21-3.4.99)
- U G01N 2333/964      • • • • • derived from animal tissue
- U G01N 2333/96425      • • • • • from mammals
- U G01N 2333/96427      • • • • • in general(not used)
- U G01N 2333/9643      • • • • • with EC number(not used)
- U G01N 2333/96433      • • • • • Serine endopeptidases (3.4.21)
- U G01N 2333/96441      • • • • • with definite EC number(not used)
- G01N 2333/96455      • • • • • Kallikrein (3.4.21.34(3.4.21.34; 3.4.21.35); 3.4.21.35)
- U G01N 2333/96472      • • • • • Aspartic endopeptidases (3.4.23)
- U G01N 2333/96475      • • • • • with definite EC number(not used)
- G01N 2333/96477      • • • • • Pepsin (3.4.23.1(3.4.23.1; 3.4.23.2; 3.4.23.3); 3.4.23.2; 3.4.23.3)
- U G01N 2333/978      • • • acting on carbon to nitrogen bonds other than peptide bonds (3.5)
- G01N 2333/986      • • • • acting on amide bonds in cyclic amides (3.5.2), e.g. beta-lactamase (penicillinase, 3.5.2.6), creatinine amidohydrolase (creatininase, EC 3.5.2.10), N-methylhydantoinase (3.5.2.6)(penicillinase, 3.5.2.6; creatinine amidohydrolase(creatininase, EC 3.5.2.10); N-methylhydantoinase (3.5.2.6)
- U G01N 2500/00      **Screening for compounds of potential therapeutic value**
- G01N 2500/02      • Screening involving studying the effect of compounds C on the interaction between interacting molecules A and B (e.g. A = enzyme and B = substrate for A, or A = receptor and B = ligand for the receptor)(e.g. A = enzyme and B = substrate for A, or A = receptor and B = ligand for the receptor)

**U G01N 2800/00      Detection or diagnosis of diseases**

NOTE

1. The indexing codes G01N 2800/02 - G01N 2800/44 are based on The Merck Manual of Diagnosis and Therapy (17th. Edition, Mark Beers and Robert Berkow). 2. For diseases caused by micro-organism where the microorganism is detected, which subject matter is classified in G01N 33/569 and subgroups,

[G01N 33/571](#) or [G01N 33/576](#) , the present indexing scheme is not used. 3. For cancers, which subject matter is classified in [G01N 33/574](#) and subgroups, the present indexing scheme is not used. 4. When indexing in the following scheme, the organ takes precedence, e.g. inflammation of the skin is indexed with dermatological disorders and not with immunology or allergic disorders, asthma with pulmonary disorders and not with immunology or allergic disorders. Exception is made for thrombosis which is indexed with haematological disorders.

G01N 2800/26

- Infectious diseases, e.g. generalised sepsis ~~Note: Indexing code G01N 2800/26 is not used for documents already classified in one or more of groups G01N 33/569 and subgroups, G01N 33/571 or G01N 33/576 and subgroups~~

**NOTE**

Indexing code [G01N 2800/26](#) is not used for documents already classified in one or more of groups [G01N 33/569](#) and subgroups, [G01N 33/571](#) or [G01N 33/576](#) and subgroups

**Project: N/A (G01R)**

U G01R 11/00

**Electromechanical arrangements for measuring time integral of electric power{i.e. electric energy}or current, e.g. of consumption({ other arrangements for measuring time integral of electric power or current [G01R 22/00](#) ; Boards, panels, desks for energy meters, [H02B 1/03](#) } ; monitoring electric consumption of electrically-propelled vehicles [B60L 3/00](#) )**

**NOTE**

For the definition of "arrangement" see Note (2) under [G01R](#)

U G01R 11/02

- Constructional details( applicable to electric measuring instruments in general [G01R 1/00](#) )

G01R 11/25

- Arrangements for indicating or signalling faults( seals [G09F 3/03](#) ; preventing tampering with detection circuits in signalling or alarm circuits [G08B 29/046](#) )

**NOTE**

Groups ~~11/48~~[G01R 11/48](#) to ~~11/66~~[G01R 11/66](#) take precedence over groups [G01R 11/30](#) to [G01R 11/46](#) .

U G01R 23/00

**Arrangements for measuring frequencies; Arrangements for analysing frequency spectra( frequency discriminators [H03D](#) ; { high frequency probes [G01R 1/06772](#) } )**

G01R 23/005

- {Circuits for comparing several input signals and for indicating the result of this comparison, e.g. equal, different, greater, smaller (*comparing phase or frequency of 2 mutually independent oscillations in demodulators*) }(~~comparing phase or frequency of 2 mutually independent oscillations in demodulators~~)}

U G01R 27/00

**Arrangements for measuring resistance, reactance, impedance, or electric characteristics derived therefrom{( measuring super-conductive properties [G01R 33/1238](#) )}**

U G01R 27/02

- Measuring real or complex resistance, reactance, impedance, or other two-pole characteristics derived therefrom, e.g. time constant( by measuring phase angle only [G01R 25/00](#) )

**NOTE**

Groups [G01R 27/02](#) to [G01R 27/22](#) cover variables that directly or indirectly can be measured over two poles of a component or a Thevenin two-pole equivalent. Subgroup [G01R 27/26](#) also covers other techniques, e.g. using electro magnetic waves or network analyzers



- U G01R 27/26
  - • Measuring inductance or capacitance; Measuring quality factor, e.g. by using the resonance method; Measuring loss factor; Measuring dielectric constants; {Measuring impedance or related variables}
- U G01R 27/2617
  - • • {Measuring dielectric properties, e.g. constants( testing dielectric strength [G01R 31/12](#) ; detecting insulation faults [G01R 31/025](#) ; [G01R 27/2688](#) takes precedence )}
- U G01R 27/2635
  - • • • {Sample holders, electrodes or excitation arrangements, e.g. sensors or measuring cells}
- U G01R 27/2658
  - • • • • {Cavities, resonators, free space arrangements, reflexion or interference arrangements( [G01R 27/2647](#) takes precedence; optical methods [G01R 27/2682](#) )}
- G01R 27/2664
  - • • • • • {~~Transmission line, wave guide(closed or open-ended)~~{~~Transmission line, wave guide (closed or open-ended) or strip - or microstrip line arrangements~~}
- U G01R 31/00
 

**Arrangements for testing electric properties; Arrangements for locating electric faults; Arrangements for electrical testing characterised by what is being tested not provided for elsewhere( measuring leads, measuring probes [G01R 1/06](#) ; { measuring superconductive properties [G01R 33/1238](#) ; data processing equipment for testing or function monitoring [G06F15/20B](#) } ; indicating electrical condition of switchgear or protective devices [H01H 71/04](#) , [H01H 73/12](#) , [H02B 11/10](#) , [H02H 3/04](#) ; testing or measuring semiconductors or solid state devices during manufacture [H01L 22/00](#) ; testing substation equipment, e.g. mobile phones [H04M 1/24](#) ; testing or monitoring of control systems [G05B 23/02](#) ; { testing or monitoring transmitters or receivers [H04B 17/00](#) } )**
- G01R 31/26
  - Testing of individual semiconductor devices ( ~~measurement of impurity content of materials G01N~~ [testing or measuring during manufacture or treatment H01L 22/00](#) ; [testing of photovoltaic devices H02S 50/10](#) )
- U G01R 31/2601
  - • {Apparatus or methods therefor( [G01R 31/2607](#) , [G01R 31/2642](#) take precedence )}
- D G01R 31/2605
  - • • {for testing individual solar cells}
- U G01R 31/28
  - Testing of electronic circuits, e.g. by signal tracer({ EMC, EMP or similar testing of electronic circuits [G01R 31/002](#) } ; testing for short-circuits, discontinuities, leakage or incorrect line connection [G01R 31/02](#) ; checking computers { or computer components } [G06F 11/00](#) ; checking static stores for correct operation [G11C 29/00](#) ; { testing receivers or transmitters of transmission systems [H04B 17/00](#) } )
- G01R 31/282
  - • {Testing of electronic circuits specially adapted for particular applications not provided for elsewhere( [G01R 31/2801](#) and [G01R 31/2851](#) take precedence )}

#### NOTE

References listed below indicate CPC places which could also be of interest when carrying out a search in respect of the subject matter covered by the preceding group:

- testing of individual LEDs [G01R 31/2635](#)

- testing of lamps [G01R 31/44](#)

- testing of displays and display drivers, e.g. LCDs

~~G09G3/00E~~ [G09G 3/006](#)

- testing of ADCs or DACs

~~H03M1/10T~~

[H03M 1/1071](#)

- G01R 31/2829
- • ~~N~~: {Testing of circuits in sensor or actuator systems (testing of apparatus for measuring electric or magnetic variables [G01R 35/00](#); testing of indicating or recording apparatus [G01D](#); in airbag systems [B60R 21/0173](#); checking gas analysers [G01N 33/007](#); monitoring or fail-safe circuits for electromagnets [H01F 7/1844](#))} }
- G01R 31/317
- • Testing of digital circuits { ~~WARNING: The following subgroups of G01R 31/317 are not complete due to an ongoing reorganisation: G01R 31/31702, G01R 31/31708, G01R 31/31711, G01R 31/31717, G01R 31/31718, G01R 31/31728, G01R 31/31901. See also G01R 31/317 and its other subgroups~~ }
- WARNING

*The following subgroups of G01R 31/317 are not complete due to an ongoing reorganisation : G01R 31/31702 , G01R 31/31708 , G01R 31/31711 , G01R 31/31717 , G01R 31/31718 , G01R 31/31728 , G01R 31/31901 . See also G01R 31/317 and its other subgroups*
- U G01R 31/36
- Apparatus for testing electrical condition of accumulators or electric batteries, e.g. capacity or charge condition( accumulators combined with arrangements for measuring, testing or indicating condition [H01M 10/48](#) ; circuit arrangements for charging, or depolarising batteries or for supplying loads from batteries [H02J 7/00](#) ; { Coulomb meters [G01R 22/00](#) ; indicating the condition of the power supply in clocks or watches [G04C 10/04](#) ; methods for controlling fuel cells [H01M 8/04298](#) } )
- NOTE
- This group covers arrangements for measuring, testing or indicating electrical conditions or variables of accumulators or electric batteries. Accumulators combined with arrangements for measuring, testing or indicating condition, or arrangements for measuring, testing or indicating conditions or variables other than electrical, e.g. level or density of battery electrolyte, are covered by the group [H01M 10/48](#) and subgroups
- U G01R 31/3627
- {Testing, i.e. making a one-time determination of some variables, e.g. testing ampere-hour charge capacity( [G01R 31/3644](#) takes precedence )}
- G01R 31/3634
- • {for determining the ampere-hour charge capacity or state-of-charge ~~(SoC)(SoC)~~( [G01R 31/3631](#) takes precedence )}
- G01R 31/40
- Testing power supplies{ (*testing photovoltaic devices [H02S 50/10](#)*; comparing current or voltage with a reference level in AC or DC supplies [G01R 19/16538](#) )}
- D G01R 31/405
- {Electrical testing of electrical aspects of solar panel power supplies( of individual solar cells G01R 31/2605 )}

## Project: RP0070 (G01R)

- G01R 31/42
- AC power supplies {(~~G01R 31/405 takes precedence~~ *testing photovoltaic modules after manufacture [H02S 50/10](#)*)}

**Project: N/A (G01S)****G01S**

**RADIO DIRECTION-FINDING; RADIO NAVIGATION; DETERMINING DISTANCE OR VELOCITY BY USE OF RADIO WAVES; LOCATING OR PRESENCE-DETECTING BY USE OF THE REFLECTION OR RERADIATION OF RADIO WAVES; ANALOGOUS ARRANGEMENTS USING OTHER WAVES**(for special applications, see the relevant subclasses, e.g. [A61B](#), [G01F](#), [G01N](#), [G02B](#); measuring dimensions or angles of objects [G01B](#); navigation in general [G01C](#); measuring infrasonic, sonic or ultrasonic vibrations in general [G01H](#); measuring infra-red, visible, or ultra-violet radiation in general [G01J](#); transducers per se, see the relevant subclasses, e.g. [G01L](#), [H01L](#), [H04R](#); measuring direction or velocity of flowing fluids by reception or emission of radiowaves or other waves and based on propagation effects caused in the fluid itself [G01P](#); measuring electric or magnetic variables in general [G01R](#); detecting masses or objects by methods not involving reflection or radiation of radio, acoustic or other waves [G01V](#); time-interval measuring [G04F](#); aerials [H01Q](#))

NOTES

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

- "transponder" means an arrangement which reacts to an incoming interrogating or detecting wave by emitting a specific answering or identifying wave.

Attention is drawn to the Notes following the title of class [G01](#) and to Note (1) following the title of subclass [G09B](#).

WARNING

[2012.05]

The following IPC group is not used in the CPC scheme. Subject matter covered by this group is classified in the following CPC groups: - [G01S 7/26](#) covered by [G01S 7/06](#)

**U G01S 13/00**

**Systems using the reflection or reradiation of radio waves, e.g. radar systems; Analogous systems using reflection or reradiation of waves whose nature or wavelength is irrelevant or unspecified( using acoustic waves [G01S 15/00](#) ; using electromagnetic waves other than radio waves [G01S 17/00](#) )**

NOTES

This group covers :

- systems for detecting the presence of an object, e.g. by reflection or reradiation from the object itself, or from a transponder associated with the object, for determining the distance or relative velocity of an object, for providing a co-ordinated display of the distance and direction of an object or for obtaining an image thereof;  
- systems arranged for mounting on a moving craft or vehicle and using the reflection of waves from an extended surface external to the craft, e.g. the surface of the earth, to determine the velocity and direction of motion of the craft

relative to the surface.

This group does not cover :

- systems for determining the direction of an object by means not employing reflection or reradiation, which are covered by groups [G01S 1/00](#) or [G01S 3/00](#) ;
- systems for determining distance or velocity of an object by means not employing reflection or reradiation, which are covered by group [G01S 11/00](#) .

- U G01S 13/88 • Radar or analogous systems specially adapted for specific applications( electromagnetic prospecting or detecting of objects, e.g. near-field detection, [G01V 3/00](#) )
- U G01S 13/89 • • for mapping or imaging
- U G01S 13/90 • • • using synthetic aperture techniques,{e.g. correcting range migration errors( compression in range per se [G01S 13/28](#) ; platform motion compensation for AMTI [G01S 13/5242](#) )}
- U G01S 13/9035 • • • {Particular SAR processing techniques not provided for elsewhere, e.g. squint mode, doppler beam-sharpening mode, spotlight mode, bistatic SAR, inverse SAR}
- G01S 2013/9088 • • • • {circular SAR ([CSAR](#), [C-SAR](#))}(~~[CSAR](#), [C-SAR](#)~~)}
- U G01S 13/93 • • for anti-collision purposes
- U G01S 13/931 • • • {between land vehicles; between land vehicles and fixed obstacles}
- G01S 2013/9335 • • • • {on airport surface ([taxiing](#))}(~~[taxiing](#)~~)}

## Project: N/A (G01T)

- U G01T 3/00 Measuring neutron radiation( [G01T 5/00](#) takes precedence; { tubes therefor [H01J 47/12](#) ; circuits with such tubes [G01T 1/18](#) ; measuring short time intervals [G04F 10/00](#) ; measuring pulse characteristics [G01R 29/02](#) ; neutron choppers [G21K 1/04](#) ; polarimeters [G01T 1/32](#) })
- G01T 3/006 • ~~{using self-powered detectors(for neutrons as well as for Y- or X-rays); e.g. using Compton-effect(Compton diodes)}~~[using self-powered detectors \(for neutrons as well as for Y- or X-rays\) , e.g. using Compton-effect \(Compton diodes\) or](#) photo-emission or a (n,B) nuclear reaction( photovoltaic semiconductors [H01L 31/00](#) ; photo-tubes [H01J 40/00](#) ; thermionic generators [H01J 45/00](#) ; radioisotopic generators [G21H 1/00](#) , e.g. [G21H 1/02](#), [G21H 1/04](#) )}

**Project: N/A (G01V)****G01V**

**GEOPHYSICS; GRAVITATIONAL MEASUREMENTS; DETECTING MASSES OR OBJECTS**( detecting or locating foreign bodies for diagnostic, surgical or person-identification purposes [A61B](#); means for indicating the location of accidentally buried, e.g. snow-buried persons [A63B 29/02](#) ; investigating or analysing earth materials by determining their chemical or physical properties [G01N](#); measuring electric or magnetic variables in general, other than direction or magnitude of the earth's field [G01R](#); electronic or nuclear magnetic resonance arrangements [G01R 33/20](#) ; radar, sonar or analogous methods in general, detecting masses or objects involving these methods [G01S](#) )

NOTES

In this subclass, the geophysical methods apply both to the earth and to other celestial objects, e.g. planets.

Attention is drawn to the Notes following the title of class [G01](#).

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:

[G01V 3/11](#) covered by [G01V3/10B](#)[G01V 3/101](#) ,  
[G01V3/10C](#)[G01V 3/104](#)

**Project: N/A (G02B)****U G02B 5/00**

**Optical elements other than lenses**( light guides [G02B 6/00](#) ; optical logic elements [G02F 3/00](#) )

## U G02B 5/08

• Mirrors{( vehicle mirrors involving special optical features [B60R 1/08](#) )}

## G02B 5/0891

• • {Ultraviolet [\[UV\] mirrors](#)([UV](#))mirrors( apparatus for microlithography exposure [G03F 7/70](#) ; X-ray multilayer structures [G21K 1/06](#) )}

**U G02B 6/00****Light guides**

## U G02B 6/02

• Optical fibre with cladding{with or without a coating}( mechanical structures for providing tensile strength and external protection [G02B 6/44](#) )

## U G02B 6/02214

• • {tailored to obtain the desired dispersion, e.g. dispersion shifted, dispersion flattened}

## G02B 6/02285

• • • {Characterised by the polarisation mode dispersion [\[PMD\] properties, e.g. for minimising PMD](#)([PMD](#))properties, e.g. for minimising PMD( fabrication methods for minimising PMD [C03B 37/02745](#) )}

## U G02B 6/10

• of the optical waveguide type( [G02B 6/02](#) , [G02B 6/24](#) take precedence; devices or arrangements for the control of light by electric, magnetic, electro-magnetic or acoustic means [G02F 1/00](#) ; transferring the modulation of modulated light [G02F 2/00](#) ; optical logic elements [G02F 3/00](#) ; optical analogue/digital converters [G02F 7/00](#) ; stores using opto-electronic devices [G11C 11/42](#) , { using electro-optical elements [G11C 13/047](#) } ; electric waveguides [H01P](#); transmission of information by optical means [H04B 10/00](#) ; multiplex systems [H04J 14/00](#) )

## U G02B 6/12

• • of the integrated circuit kind( production or processing of single crystals [C30B](#) ; electric integrated circuits [H01L 27/00](#) { coupling fibres and integrated optical circuits [G02B 6/30](#) } )

## U G02B 2006/12035

• • • {Materials}

## G02B 2006/12038

• • • • {Glass ([SiO2 based materials](#))}([SiO2-based materials](#))}

## U G02B 6/24

• Coupling light guides( for electric waveguides [H01P 1/00](#) )

## U G02B 6/26

• • Optical coupling means( [G02B 6/36](#) , [G02B 6/42](#) take precedence )

- U G02B 6/35      • • • having switching means( optical switching in general [G02B 26/08](#) ; by changing the optical properties of the medium [G02F 1/00](#) )
- U G02B 6/354      • • • • {Switching arrangements, i.e. number of input/output ports and interconnection types}
- G02B 6/356      • • • • • {in an optical cross-connect device, e.g. routing and switching aspects of interconnecting different paths propagating different wavelengths to ~~(re)configure the various input and output links~~(re)configure the various input and output links( switching polarized beams [G02B 6/3594](#) ; power equalizers [G02B 6/356](#) and [G02B 6/3594](#) ; path selecting means [H04Q 11/0001](#) )}
- U G02B 17/00      **Systems with reflecting surfaces, with or without refracting elements( microscopes [G02B 21/00](#) ; telescopes, periscopes [G02B 23/00](#) ; for beam splitting or combining [G02B 27/10](#) ; for optical projection [G02B 27/18](#) )**
- G02B 17/006      • {Systems in which light light is reflected on a plurality of parallel surfaces, e.g. louvre mirrors, total internal reflection ~~[TIR] lenses~~(TIR)lenses( Fresnel mirrors [G02B 5/09](#) , Fresnel lenses [G02B 3/08](#) )}
- U G02B 27/00      **Other optical systems; Other optical apparatus( means for bringing about special optical effects in shop-windows, show-cases [A47F](#) , e.g. [A47F 11/06](#) ; optical toys [A63H 33/22](#) ; designs or pictures characterised by special light effects [B44F 1/00](#) )**
- G02B 27/0075      • {with means for altering, e.g. increasing, the depth of field or depth of focus}~~{WARNING Not complete, see also G02B 27/00}~~
- WARNING*  
*Not complete, see also [G02B 27/00](#)*
- U G02B 27/42      • Diffraction optics{, i.e. systems including a diffractive element being designed for providing a diffractive effect}( [G02B 27/60](#) takes precedence )
- G02B 27/4272      • • {having plural diffractive elements positioned sequentially along the optical path}
- WARNING*  
*Not complete, see also [G02B5/18E](#)*  
*Not complete, see also [G02B 5/1814](#)*

**Project: N/A (G02F)**

- U G02F 1/00      **Devices or arrangements for the control of the intensity, colour, phase, polarisation or direction of light arriving from an independent light source, e.g. switching, gating, or modulating; Non-linear optics( thermometers using change of colour or translucency [G01K 11/12](#) ; using changes in fluorescence [G01K 11/32](#) ; light guide devices [G02B 6/00](#) ; optical devices or arrangements using movable or deformable elements for controlling light independent of the light source [G02B 26/00](#) ; control of light in general [G05D 25/00](#) ; visible signalling systems [G08B 5/00](#) ; indicating arrangements for variable information by selection or combination of individual elements [G09F 9/00](#) ; control arrangements or circuits for visual indicators other than cathode-ray tubes [G09G 3/00](#) ; control of light sources [H01S 3/10](#) , [H05B 33/08](#) , [H05B 35/00](#) to [H05B 43/00](#) ; { photochromic filters [G02B 5/23](#) ; optical logic elements [G02F 3/00](#) )}**

**NOTE**

This group covers only :

- devices or arrangements, e.g. cells, the optical operation of



which is modified by changing the optical properties of the medium of the devices or arrangements by the influence or control of physical parameters, e.g. electric fields, electric current, magnetic fields, sound or mechanical vibrations, stress or thermal effects;  
- devices or arrangements in which the electric or magnetic field component of the light beams influences the optical properties of the medium, i.e. non-linear optics;  
- control of light by electromagnetic waves, e.g. radio waves, or by electrons or other elementary particles.

- U G02F 1/01
  - for the control of the intensity, phase, polarisation or colour( [G02F 1/29](#) , [G02F 1/35](#) take precedence; polarising elements per se [G02B 5/30](#) ; static storage per se [G11C](#); image tube screens acting as light valves by shutter operation [H01J 29/12](#) ; such screens acting by discoloration [H01J 29/14](#) ; { projection arrangements for television image reproduction, e.g. using eidophor [H04N 5/74](#) ; recording by light [G11B 7/00](#) to [G11B 11/00](#) } )
- U G02F 1/015
  - • based on semiconductor elements with at least one potential jump barrier, e.g. PN, PIN junction( [G02F 1/03](#) takes precedence )
- U G02F 2001/0151
  - • • {modulating the refractive index}
- G02F 2001/0153
  - • • • {by electro-refraction (*Kramers-Kronig relation*)}(*Kramers-Kronig relation*)}
- G02F 2001/0154
  - • • • {by electro-optic effects (*LEO=Pockels, QEO=Kerr*)}(*LEO=Pockels, QEO=Kerr*)}

## Project: N/A (G03B)

G03B 11/00

Filters or other obturators specially adapted for photographic purposes (filters per se [G02B 5/20](#) [G02B 5/20](#))

## Project: N/A (G03F)

- U G03F 9/00
 

Registration or positioning of originals, masks, frames, photographic sheets or textured or patterned surfaces, e.g. automatically( [G03F 7/22](#) takes precedence; preparation of photographic masks [G03F 1/00](#) ; within photographic printing apparatus for making copies [G03B 27/00](#) )
- U G03F 9/70
  - {for microlithography( measuring printed patterns for monitoring overlay [G03F 7/70633](#) or focus [G03F 7/70641](#) ; projection system adjustment [G03F 7/70258](#) ; position control [G03F 7/70775](#) )}
- U G03F 9/7073
  - • {Alignment marks and their environment( marks specific to masks [G03F 1/42](#) ; marks specific to molds or stamps [G03F 7/0002](#) ; overlay marks [G03F7/20T22](#) ; marks applied to semiconductor devices [H01L 23/544](#) )}
- G03F 9/7084
  - • • {~~Position of mark on substrate: i.e. position in(x, y, z)~~{*Position of mark on substrate: i.e. position in (x, y, z) of mark*, e.g. buried or resist covered mark, mark on rearside, at the substrate edge, in the circuit area, latent image mark, marks in plural levels}

## Project: N/A (G03G)

- U G03G 9/00
 

Developers
- U G03G 9/08
  - with toner particles
- U G03G 9/09
  - • Colouring agents for toner particles

- U G03G 9/0906      • • • {Organic dyes}
- G03G 9/0914      • • • • {Acridine; Azine; Oxazine; Thiazine; ~~(Xanthene-)~~(Xanthene-) dyes}

**U G03G 2215/00      Apparatus for electrophotographic processes(not used)**

- U G03G 2215/06      • Developing structures, details
- U G03G 2215/0634      • • Developing device

**NOTE**

Indexing codes of group [G03G 2215/0634](#) and subgroups can be followed by additional symbols preceded by a "," sign and relating to additional characteristics.

- U G03G 2215/0636      • • • Specific type of dry developer device
- G03G 2215/0639      • • • • Without donor member *(i.e. developing housing slides on latent image-carrying member)* ~~(i.e. developing housing slides on latent image-carrying member)~~

**Project: N/A (G04D)**

**U G04D 1/00      Gripping, holding, or supporting devices {stands in general [F16M](#); for instruments [G01D 11/30](#), [B01L](#)}**

- U G04D 1/005      • {for non-automatic assembly, with automatic transport between workbenches}
- G04D 1/0064      • • { Turntables or plates *(carousels)* ~~(carousels)~~(in general [B65G 47/00](#))}

**Project: N/A (G04F)**

**U G04F 10/00      Apparatus for measuring unknown time intervals by electric means { timing devices for clocks or watches for comparing the rate of the oscillating member with a standard [G04D 7/12](#); radar systems, analogous systems [G01S 7/00](#); measuring frequency [G01R 23/00](#); measuring phase angle [G01R 25/00](#)}**

- G04F 10/005      • { Time-to-digital converters [TDC] (analog-to-digital converters with intermediate conversion to time or phase [H03M 1/50](#), [H03M 1/60](#))}

**WARNING**

~~This group is not complete pending reclassification; see also groups G04F 10/04 and G04F 10/06~~

*This group is not complete pending reclassification; see also groups G04F 10/04 and G04F 10/06*

**Project: N/A (G05G)**

**G05G 1/00      Controlling members, e.g. knobs or handles; Assemblies or arrangements thereof; Indicating position of controlling members ({ means for preventing, limiting or returning the movements of parts of a control mechanism [G05G 5/00](#); providing feel, e.g. means to create a counterforce [G05G 5/03](#); specially adapted for programme control [G05G 21/00](#); vibration damping [G05G 25/02](#);} joysticks [G05G 9/04](#); steering wheels for motor vehicles [B62D](#))**

**NOTE**

~~Within this main group the first place priority rule is applied, i.e. at each hierarchical level classification is made in the first appropriate place~~

*Within this main group the first place priority rule is applied, i.e. at each hierarchical level classification is made in the first appropriate place*

**Project: N/A (G06F)**

- U G06F 1/00** Details of data-processing equipment not covered by groups [G06F 3/00](#) to [G06F 13/00](#) , {e.g. cooling, packaging or power supply specially adapted for computer application( security arrangements for protecting computers or computer systems against unauthorised activity [G06F 21/00](#) )}
- U G06F 1/16 · Constructional details or arrangements( instrument details [G12B](#) )
- U G06F 1/18 · · Packaging or power distribution{( for electrical apparatus in general [H05K](#) , [H02J](#) )}
- U G06F 1/181 · · · {Enclosures( for electric apparatus in general [H05K 5/00](#) ; for portable computers [G06F 1/1613](#) )}
- G06F 1/182 · · · · {with special features, e.g. for use in industrial environments; grounding or shielding against radio frequency interference [\[RFI\]](#) or [electromagnetic interference \(EMI\)](#)(~~RFI~~or ~~electromagnetic interference (EMI)~~)( in general [H05K 9/00](#) )}
- U G06F 3/00** Input arrangements for transferring data to be processed into a form capable of being handled by the computer; Output arrangements for transferring data from processing unit to output unit, e.g. interface arrangements( typewriters [B41J](#); conversion of physical variables [F15B 5/00](#) , [G01](#); image acquisition [G06T 1/00](#) , [G06F 9/00](#) ; coding, decoding or code conversion in general [H03M](#) ; transmission of digital information [H04L](#); { in regulating or control systems [G05B](#) )}
- U G06F 3/01 · Input arrangements or combined input and output arrangements for interaction between user and computer( [G06F 3/16](#) takes precedence )
- U G06F 3/03 · · Arrangements for converting the position or the displacement of a member into a coded form
- U G06F 3/041 · · · Digitisers, e.g. for touch screens or touch pads, characterized by the transducing means
- G06F 3/0416 · · · · {Control and interface arrangements for touch screen}{~~WARNING: Not complete, see G06F 3/0488~~}
- [WARNING](#)  
[Not complete, see G06F 3/0488](#)
- U G06F 3/06 · Digital input from or digital output to record carriers,{e.g. RAID, emulated record carriers, networked record carriers( recording or reproducing devices per se [G11B](#); error detection, error correction, monitoring per se regarding storage systems [G06F 11/00](#); accessing or addressing within memory systems or architectures [G06F 12/00](#); information retrieval [G06F 17/30](#) )}
- G06F 3/08 · · from or to individual record carriers, e.g. punched card,{memory card, integrated circuit [\[IC\]](#) card, [smart card](#)(~~IC~~)card, ~~smart card~~( record carriers for use with machines and with at least a part designed to carry digital markings [G06K 19/00](#) ; coded identity card or credit card with a coded signal [G07F 7/10](#) )}
- U G06F 7/00** Methods or arrangements for processing data by operating upon the order or content of the data handled( logic circuits [H03K 19/00](#) )
- U G06F 7/38 · Methods or arrangements for performing computations using exclusively denominational number representation, e.g. using binary, ternary, decimal representation
- U G06F 7/48 · · using non-contact-making devices, e.g. tube, solid state device; using unspecified devices

- G06F 7/499
- • • Denomination or exception handling, e.g. rounding, overflow{ **Note:** documents published before 12-2005 are not systematically classified in the sugroups of G06F 7/499 : See the relevant subgroup of G06F 7/48 and the ICOs G06F 7/499 + }
- NOTE**  
{ documents published before 12-2005 are not systematically classified in the sugroups of G06F 7/499 : See the relevant subgroup of G06F 7/48 and the ICOs G06F 7/499 + }
- U G06F 7/52
- • • Multiplying; Dividing( [G06F 7/483](#) to [G06F 7/491](#) , [G06F 7/544](#) take precedence )
- U G06F 7/535
- • • • Dividing only
- U G06F 7/537
- • • • • Reduction of the number of iteration steps or stages, e.g. using the Sweeny-Robertson-Tocher (SRT) algorithm{ not used, see [G06F 7/535](#) or [G06F 7/5375](#) }
- G06F 7/5375
- • • • • { Non restoring calculation, where each digit is either negative, zero or positive, e.g. SRT; **WARNING: Not complete. Provisionally see G06F 7/535 + G06F 7/5375** }
- WARNING**  
Not complete. Provisionally see [G06F 7/535](#) + [G06F 7/5375](#)
- U G06F 12/00**
- Accessing, addressing or allocating within memory systems or architectures({ digital input or output to record carriers, e.g. to disc storage units [G06F 3/06](#) }; information storage in general [G11](#))**
- U G06F 12/02
- Addressing or allocation; Relocation( programme address sequencing [G06F 9/00](#) ; arrangements for selecting an address in a digital store [G11C 8/00](#) )
- U G06F 12/08
- • in hierarchically structured memory systems, e.g. virtual memory systems
- U G06F 12/0802
- • • {Addressing of a memory level in which the access to the desired data or data block requires associative addressing means, e.g. cache}
- U G06F 12/0806
- • • • {Multiuser, multiprocessor, multiprocessing cache systems}
- U G06F 12/0815
- • • • • {Cache consistency protocols}
- G06F 12/0837
- • • • • {with software control (e.g. non-cacheable data)}(e.g. non-cacheable data)}
- U G06F 17/00**
- Digital computing or data processing equipment or methods, specially adapted for specific functions**
- U G06F 17/20
- Handling natural language data( speech analysis or synthesis [G10L](#) )
- U G06F 17/21
- • Text processing( [G06F 17/27](#) , [G06F 17/28](#) take precedence; systems for composing machines [B41B 27/00](#) )
- U G06F 17/22
- • • Manipulating or registering by use of codes, e.g. in sequence of text characters({ compression [H03M 7/30](#) )}
- G06F 17/2247
- • • • {Tree structured documents; Markup, e.g. Standard Generalized Markup Language [[SGML](#)], [Document Type Definition \(DTD\)](#)([SGML](#)), [Document Type Definition \(DTD\)](#)( validation and parsing [G06F 17/2705](#) ; data retrieval [G06F 17/30](#) ; coding and compression [H03M 7/30](#) )}
- U G06F 17/30
- Information retrieval; Database structures therefor;{File system structures therefor(data processing systems or methods specially adapted for administrative, commercial, financial managerial, supervisory or forecasting purposes [G06Q](#))}

- U G06F 17/30286
- {in structured data stores}
- WARNING  
Not complete pending the completion of a reclassification; see also [G06F 17/30002](#), [G06F 17/30008](#) and [G06F 17/30283](#)
- U G06F 17/30386
- • {Retrieval requests}
- U G06F 17/30424
- • • {Query processing}
- U G06F 17/30522
- • • • {Query processing with adaptation to user needs}
- G06F 17/30525
- • • • • {using data annotations (*user-defined metadata*)}(*user-defined metadata*)}
- U G06F 2207/00** **Indexing scheme relating to methods or arrangements for processing data by operating upon the order or content of the data handled**
- U G06F 2207/491
- Indexing scheme relating to groups [G06F 7/491](#) - [G06F 7/4917](#)
- G06F 2207/4917
- • Using 5321 or 543210 code, i.e. binary coded decimal representation with digit weight of 5, (*4*), *3*, *2*, *1 (and 0) respectively*(*4*),*3*, *2*, *1 (and 0) respectively*
- U G06F 2207/72
- Indexing scheme relating to groups [G06F 7/72](#) - [G06F 7/729](#)
- G06F 2207/7209
- • Calculation via subfield, i.e. the subfield being GF(q) with q a prime power, e.g. GF (*((2\*\*m)\*\*n) via GF(2\*\*m)((2\*\*m)\*\*n)via GF(2\*\*m)*)

**Project: N/A (G06K)**

- U G06K 9/00** **Methods or arrangements for reading or recognising printed or written characters or for recognising patterns, e.g. fingerprints( processing or analysis of tracks of nuclear particles [G01T 5/02](#) ; { information retrieval [G06F 17/30](#) ; medical diagnosis [G06F 19/34](#) ; recognition of molecular sequences [G06F 19/70](#) ; radio frequency identification [G06K 7/00](#) ; recognition of barcodes and similar code images [G06K 7/10](#) ; computer systems based on specific computational models [G06N](#); image analysis, inspection, positioning or tracking [G06T 7/00](#) ; recognition of acoustic speech signals [G10L 15/00](#) ; acoustic speaker identification [G10L 17/00](#) } )**
- NOTE
1. In this group, the following term is used with the meaning indicated:  
- "recognising" includes several functions such as extracting features, clustering, classifying or matching.
  2. IPC subgroups [G06K 9/20](#) , [G06K 9/36](#) , [G06K 9/62](#) and [G06K 9/74](#) refer to methods or arrangements that can be applied to a pattern independently of its nature or to that are applied to specific patterns not included in the subgroups in the range [G06K 9/00006](#) to [G06K 9/00852](#) . The CPC subgroups in the range [G06K 9/00006](#) to [G06K 9/00852](#) refer to the same methods or arrangements when applied or specially adapted to the specific patterns to which these subgroups relate.
  3. The present group does not cover the use of recognised patterns in specific applications, e.g. the use of traced gestures recognised as commands to be input to a computer is covered by the groups under [G06F 3/00](#)
- U G06K 9/62
- Methods or arrangements for recognition using electronic means( learning machines [G06F 15/18](#) ; digital correlation [G06F 17/15](#) ; analogue correlation [G06G 7/19](#) )
- U G06K 9/6217
- {Design or setup of recognition systems and techniques; Extraction of features in feature space; Clustering techniques; Blind source separation( regression analysis [G06F 17/18](#) )}
- U G06K 9/6256
- • {Obtaining sets of training patterns; Bootstrap methods, e.g. bagging, boosting}

- G06K 9/6259
  - • • ~~[N:]~~{characterised by the incorporation of unlabelled data, e.g. multiple instance learning [MIL], semi-supervised techniques using expectation-maximisation [EM] or na?ve labelling( EM techniques [G06K 9/6226](#); validation with "oracles" [G06K 9/6263](#)-)}
- U G06K 9/68
  - • using sequential comparisons of the image signals with a plurality of references{in which the sequence of the image signals or the references is relevant}, e.g. addressable memory
- U G06K 9/685
  - • • {Involving plural approaches, e.g. verification by template match; resolving confusion among similar patterns, e.g. O & Q( [G06K 9/6807](#) takes precedence )}
- G06K 9/6857
  - • • ~~[N:]~~{Coarse/fine approaches, e.g. resolution of ambiguities, multiscale approaches}

**Project: N/A (G06T)**

- U **G06T 11/00** **2D [Two Dimensional] image generation**
  - G06T 11/003
    - {Reconstruction from projections, e.g. tomography}

WARNING

~~As from 06.2011 documents of this group are being continuously reclassified to its subgroups~~

*As from 06.2011 documents of this group are being continuously reclassified to its subgroups*
  - G06T 11/005
    - • {Specific pre-processing for tomographic reconstruction, e.g. calibration, source positioning, rebinning, scatter correction, retrospective gating}

WARNING

~~Not complete pending the completion of a reclassification; see also **G11/00T**~~

*Not complete pending the completion of a reclassification; see also **G11/00T***
  - G06T 11/006
    - • {Inverse problem, transformation from projection-space into object-space, e.g. transform methods, back-projection, algebraic methods}

WARNING

~~Not complete pending the completion of a reclassification; see also **G06T11/00T**~~

*Not complete pending the completion of a reclassification; see also [G06T 11/003](#)*
  - G06T 11/008
    - • {Specific post-processing after tomographic reconstruction, e.g. voxelisation, metal artifact correction}

WARNING

~~Not complete pending the completion of a reclassification; see also **G06T11/00T**~~

*Not complete pending the completion of a reclassification; see also [G06T 11/003](#)*

**Project: N/A (G07D)****G07D 9/00**

**Counting coins (in combination with coin-sorting [G07D 3/16](#)); Handling of coins not provided for in the other groups of this subclass**

NOTE~~Informative references~~*Informative references*



- handling of paper currency [G07D 11/0021](#) - counting paper currency  
~~G07D 11/00K~~ [G07D 11/0084](#)

**U G07D 11/00**

Devices accepting coins or { accepting or dispensing} paper currency, e.g. depositing machines (apparatus freed or actuated by coins or the like [G07F](#); apparatus freed or actuated by paper currency [G07F 7/04](#); complete banking systems [G07F 19/00](#); { arrangements actuated by a coded-card for receiving or dispensing monies or the like and posting such transactions to existing accounts, e.g. automatic teller machines [ATMs] [G07F 19/20](#))

**NOTES**

This group covers constructional or functioning aspects of devices handling paper currency, including of so-called Automatic Teller Machines [ATMs]; other aspects of ATMs, e.g. posting transactions to existing accounts or aspects related to the interaction with users, are covered by group [G07F 19/20](#)

Informative reference:

- devices dispensing coins [G07D 1/00](#)

**U G07D 11/0003  
G07D 11/0021**

- { Mechanical details}
- • { Handling paper currency, e.g. banknotes (handling paper sheets in general [B65H](#))}

**NOTE**

~~Informative reference~~

~~Informative reference~~ - handling paper sheets in general [B65H](#)

**Project: N/A (G09G)**

**U G09G 5/00**

Control arrangements or circuits for visual indicators common to cathode-ray tube indicators and other visual indicators (image data processing or generation, in general [G06T](#))

**U G09G 5/36**

- characterised by the display of a graphic pattern, e.g. using an all-points-addressable (APA) memory

**U G09G 5/39**

- • Control of the bit-mapped memory

**U G09G 5/395**

- • • Arrangements specially adapted for transferring the contents of the bit-mapped memory to the screen ([G09G 5/399](#) takes precedence)

**G09G 5/397**

- • • • Arrangements specially adapted for transferring the contents of two or more bit-mapped memories to the screen simultaneously, e.g. for mixing or overlay ([G09G 5/02](#) takes precedence){ ~~Warning Not complete. See also G09G 5/395, G09G 5/399~~}

**WARNING**

~~Not complete. See also G09G 5/395, G09G 5/399~~

**Project: N/A (G10H)**

**U G10H 2220/00**

Input/output interfacing specifically adapted for electrophonic musical tools or instruments

**U G10H 2220/155**

- User input interfaces for electrophonic musical instruments (graphical user interfaces specifically adapted for electrophonic musical instruments [G10H 2220/091](#); input means in general [G06F 3/00](#))

**G10H 2220/401**

- • 3D sensing, i.e. three-dimensional (*x, y, z*) *position or movement sensing*. (~~x, y, z~~) ~~position or movement sensing~~. (movement pattern or gesture sensing [G10H 2220/201](#); geolocation sensing [G10H 2220/355](#), 3D sensing with accelerometer [G10H 2220/395](#))

**Project: N/A (G11B)**

- U G11B 7/00** Recording or reproducing by optical means, e.g. recording using a thermal beam of optical radiation{by modifying optical properties or the physical structure}, reproducing using an optical beam at lower power{by sensing optical properties}; Record carriers therefor;( [G11B 11/00](#) , [G11B 13/00](#) take precedence )
- U G11B 7/007** • Arrangement of the information on the record carrier, e.g. form of tracks, {actual track shape, e.g. wobbled, or cross-section, e.g. v-shaped; Sequential information structures, e.g. sectoring or header formats within a track}
- G11B 7/00736** • {Auxiliary data, e.g. lead-in, lead-out, Power Calibration Area [[PCA](#)], [Burst Cutting Area \(BCA\)](#), [control information \(PCA\)](#), ~~Burst Cutting Area (BCA); control information~~ ( sector headers or addresses in prepits [G11B 7/00745](#); address data in track wobble [G11B7/007T](#))}  
WARNING  
Not complete, see also [G11B 7/007](#) and [G11B 7/00745](#)
- U G11B 7/08** • Disposition or mounting of heads or light sources relatively to record carriers
- U G11B 7/09** • • with provision for moving the light beam or focus plane for the purpose of maintaining alignment of the light beam relative to the record carrier during transducing operation, e.g. to compensate for surface irregularities of the latter or for track following
- U G11B 7/0908** • • • {for focusing only( [G11B 7/0925](#) , [G11B 7/094](#) , [G11B 7/0941](#) , [G11B 7/0943](#) , [G11B 7/0945](#) , [G11B 7/0946](#) , [G11B 7/0948](#) take precedence )}
- U G11B 7/0917** • • • • { Focus-error methods other than those covered by [G11B 7/0909](#) to [G11B 7/0916](#) }
- G11B 2007/0924** • • • • {Skewed beams methods ([using an angled beam, i.e. a beam which is reflected from the disc at an angle different from 90°](#))}~~(using an angled beam, i.e. a beam which is reflected from the disc at an angle different from 90°)~~
- U G11B 20/00** **Signal processing not specific to the method of recording or reproducing; Circuits therefor**
- U G11B 20/10** • Digital recording or reproducing( digital computers in which at least part of the computation is effected electrically, arrangements for handling digital data [G06F](#) ; transmission of digital information [H04L](#) )
- U G11B 20/10009** • • {Improvement or modification of read or write signals}
- U G11B 20/10046** • • • {filtering or equalising, e.g. setting the tap weights of an FIR filter}
- U G11B 20/10055** • • • • {using partial response filtering when writing the signal to the medium or reading it therefrom}
- G11B 20/10185** • • • • • {PR5 or PR(-1,0,2,0,-1), i.e. partial response class 5, polynomial  $-((1+D)^2)*((1-D)^2)=-1+2D^2-D^4$ } ~~$((1+D)^2)*((1-D)^2)=-1+2D^2-D^4$~~

**Project: N/A (G11C)**

- U G11C 11/00** **Digital stores characterised by the use of particular electric or magnetic storage elements; Storage elements therefor( [G11C 14/00](#) to [G11C 21/00](#) take precedence )**
- U G11C 11/02** • using magnetic elements{( using multibit magnetic storage elements [G11C 11/5607](#) ; counters with magnetic elements [H03K 23/76](#) ; pulse generators, static switches, logic circuits with such elements [H03K 3/45](#) , [H03K 17/80](#) , [H03K 19/16](#) ; measurement of magnetic variables [G01R 33/00](#) )}
- U G11C 11/06** • • using single-aperture storage elements, e.g. ring core; using multi-aperture plates in which each individual aperture forms a storage element

- U G11C 11/06007 . . . {using a single aperture or single magnetic closed circuit}
- NOTE  
Provisionally contains the following details; control write -, read -, address circuitry (pulse generators in general [H03K 5/00](#) , [H03K 17/00](#) ); arrangements for temperature compensation; checking of the correct functioning and repair arrangements (checking methods in general [G06F 11/00](#) , [G06F 11/28](#) ; testing magnetic elements per se [G01R 33/00](#) ); magnetic properties, choice of materials or the like (materials per se [H01F 1/00](#) )
- U G11C 11/06014 . . . . {using one such element pro bit}
- U G11C 11/0605 . . . . . {with non-destructive read-out}
- U G11C 11/06057 . . . . . {Matrixes}
- G11C 11/06064 . . . . . {"bit"-organised ([2 1/2D, 3D or similar organisation](#))}(~~2 1/2D, 3D or similar organisation~~)}
- G11C 11/06071 . . . . . {"word"-organised ([2D organisation or linear selection](#))}(~~2D organisation or linear selection~~)}
- U G11C 11/21 . using electric elements
- U G11C 11/34 . . using semiconductor devices{( processes or apparatus for the manufacture or treatment of semiconductor or solid state devices [H01L 21/00](#) ; integrated circuit devices [H01L 27/00](#) ; generating electric pulses, e.g. bistable devices using semiconductor devices [H03K 3/00](#) )}
- G11C 11/36 . . . using diodes, e.g. as threshold elements,{i.e. diodes assuming a stable ON-stage when driven above their threshold ([S- or N-characteristic](#))}(~~S- or N-characteristic~~)}
- U G11C 29/00 Checking stores for correct operation;{Subsequent repair}; Testing stores during standby or offline operation{( testing of electronic circuits in general [G01R 31/28](#) ; error detection or error correction in computer memories during normal operation [G06F 11/1008](#) , [G06F 11/1666](#) ; testing of computers during standby [G06F 11/22](#) )}**
- WARNING  
Groups [G11C 29/70](#) to [G11C 29/886](#) do not correspond to former or current IPC groups.  
Concordance CPC : IPC for these groups is the following: - [G11C 29/70](#) - [G11C 29/886](#) : [G11C 29/00](#)
- U G11C 29/04 . Detection or location of defective memory elements,{e.g. cell construction details, timing of test signals}
- U G11C 29/08 . . Functional testing, e.g. testing during refresh, power-on self testing (POST) or distributed testing
- G11C 29/48 . . . Arrangements in static stores specially adapted for testing by means external to the store, e.g. using direct memory access [[DMA](#)] or using [auxiliary access paths](#)(~~DMA~~)or ~~using auxiliary access paths~~( external testing equipment [G11C 29/56](#) )

**Project: N/A (H01B)****H01B**

**CABLES; CONDUCTORS; INSULATORS; SELECTION OF MATERIALS FOR THEIR CONDUCTIVE, INSULATING OR DIELECTRIC PROPERTIES (selection for magnetic properties [H01F 1/00](#); waveguides [H01P](#); installations of cables or lines [H02G](#); { printed circuits [H05K](#)})**

**NOTE**

Group [H01B 12/00](#) takes precedence over groups [H01B 5/00](#) to [H01B 11/00](#).

**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:

[H01B 7/17](#) to [H01B 7/295](#) covered by [H01B 7/18](#) to ~~[H01B7/28D](#)~~[H01B 7/2813](#), ~~[H01B7/34](#)~~ to ~~[H01B7/34B3](#)~~

**Project: N/A (H01F)****U H01F 1/00**

**Magnets or magnetic bodies characterised by the magnetic materials therefor; Selection of materials for their magnetic properties**

- U H01F 1/01
  - of inorganic materials( [H01F 1/44](#) takes precedence )
- U H01F 1/03
  - • characterised by their coercivity{( [H01F 1/40](#) takes precedence )}
- U H01F 1/12
  - • • of soft-magnetic materials
- U H01F 1/34
  - • • • Non-metallic substances, e.g. ferrites
- U H01F 1/342
  - • • • • {Oxides( [H01F 1/36](#) and [H01F 1/38](#) take precedence )}
- U H01F 1/344
  - • • • • {Ferrites, e.g. having a cubic spinel structure (X<sub>2</sub>O)(Y<sub>23</sub>O<sub>3</sub>); e.g. magnetite Fe<sub>3</sub>O<sub>4</sub>}
- H01F 1/346
  - • • • • • {~~Garnets, e.g. having a cubic nesosilicates-based structure~~ [X<sub>2</sub>+3Y<sub>3</sub>+2]{(TO<sub>4</sub>)}[(TO<sub>4</sub>)<sup>3</sup>] with T= Si, Al, Fe, Ga( [H01F 10/24](#) takes precedence; Faraday rotators [G02F 1/09](#) )}

**U H01F 7/00**

**Magnets( superconducting magnets [H01F 6/00](#) ; for separation of solid materials or fluids [B03C 1/00](#) ; for bench or like work-holders [B23B 31/28](#) , [B23Q 3/00](#) ; work-holding devices [B25B 11/00](#) ; lifting magnets [B66C 1/00](#) ; { operating or controlling locks using permanent magnets [E05B 47/0038](#) ; devices for holding a wing, e.g. door or window, by magnetic or electromagnetic attraction [E05C 19/16](#) ; relieving load or bearings using magnetic means [F16C 39/06](#) } ; for electric meters [G01R](#) ; for relays [H01H](#) ; { for electric discharge tubes [H01J](#) , e.g. [H01J 3/24](#) , [H01J 23/10](#) , [H01J 29/68](#) } ; for dynamo-electric machines [H02K](#) )**

- H01F 7/06
  - Electromagnets; Actuators including electromagnets{( electric coils [H01F 5/00](#) ; devices for holding workpieces using electric force [B23Q 3/15](#) ; load-engaging elements for lifting articles electromagnetically [B66C 1/06](#) ; electromagnetic couplings [F16D 27/00](#) ; magnetic brakes [F16D 63/002](#) ; electromagnetically operated valves [F16K 11/24](#) , [F16K 31/00](#) ; magnetically locked mine lamps [F21L 11/00](#) ; analysing materials by magnetic means [G01N 27/72](#) , [G01N 27/80](#) ; electromagnets for winding mechanical clocks [G04C 1/02](#) ; electromagnetic relays [H01H 51/00](#) ; windings for salient poles of dynamo-electric machines [H02K 3/18](#) ; electromagnets for telegraphic communication [H04L](#) ; for arc lamps [H05B 31/28](#) )}

**U H01F 10/00**

**Thin magnetic films, e.g. of one-domain structure( magnetic record carriers [G11B 5/00](#) ; thin-film magnetic stores [G11C](#) )**

- U H01F 10/08
  - characterised by magnetic layers({ [H01F 10/32](#) takes precedence } ; applying thin magnetic films to substrates [H01F 41/14](#) )
- U H01F 10/10
  - • characterised by the composition

- U H01F 10/18
  - • • being compounds
- U H01F 10/20
  - • • • Ferrites
- H01F 10/22
  - • • • Orthoferrites{e.g.  $\text{RFeO}_3$  (*R= rare earth element*) with orthorhombic structure}~~(R= rare earth element)with orthorhombic structure~~}
- U H01F 10/32
  - Spin-exchange-coupled multilayers, e.g. nanostructured superlattices{( applying spin-exchange-coupled multilayers to substrates [H01F 41/302](#) )}
- U H01F 10/3227
  - • {Exchange coupling via one or more magnetisable ultrathin or granular films}
- U H01F 10/3231
  - • • {via a non-magnetic spacer}
- H01F 10/3236
  - • • • {made of a noble metal, e.g. *(Co/Pt) n multilayers having perpendicular anisotropy*~~(Co/Pt)n-multilayers having perpendicular anisotropy~~ ([H01F 10/3286](#) takes precedence )}

**Project: N/A (H01G)**

- U H01G 2/00
    - Details of capacitors not covered by a single one of groups [H01G 4/00-H01G 11/00](#)
  - H01G 2/10
    - Housing; Encapsulation ~~{WARNING: Not complete, see also H01G 4/224}~~
- WARNING*  
*Not complete, see also [H01G 4/224](#)*

**Project: N/A (H01H)**

- U H01H 1/00
    - Contacts (liquid contacts [H01H 29/04](#))
  - H01H 1/0036
    - { Switches making use of microelectromechanical systems *[MEMS] (MEMS)*; (for electrostatic relays [H01H 59/0009](#), for electromagnetic relays [H01H 50/005](#); MEMS manufacturing processes [B81C](#))}
  - U H01H 1/02
    - characterised by the material thereof {(containing gas-evolving material [H01H 33/765](#))}
  - H01H 1/021
    - • Composite materials
- NOTE
- In this group, the following expression is used with the meaning indicated :
- "composite material" is a material made of two or more different materials, e.g. coated material, layered materials or carbon fibres in a copper base or matrix
- Subject matter classifiable in more than one of the groups ~~1/023~~*H01H 1/023* to ~~1/029~~*H01H 1/029* should be classified in all relevant groups.

**Project: N/A (H01J)**

- H01J 2211/00
    - Plasma display panels with alternate current induction of the discharge, e.g. AC-PDPs~~(plasma display panels making use of direct current T01J217~~  
*plasma display panels making use of direct current [H01J 2217/00](#))*
  - H01J 2237/00
    - Discharge tubes exposing object to beam, e.g. for analysis treatment, etching, imaging
- NOTES
- For features of general interest which may be found in other types of discharge tubes, an indexing code corresponding to general schemes ~~T01J201~~

[H01J 2201/00](#) to ~~T01J207~~ [T01J207/00](#) is given, e.g. for cathodes, vessels, cooling means or the like

Same rules apply for manufacturing procedures (~~T01J209~~ [H01J 2209/00](#)), unless really specific to the tube concerned.

The codes in this main group are grouped according to the following principle: details common to gas or plasma discharge of the above mentioned tubes:

[H01J 2237/00](#) to ~~T01J237~~ [T01J237/248D2](#)

Imaging or analysing: [H01J 2237/25](#) to [H01J 2237/2857](#)

particle beam processing: [H01J 2237/30](#) to [H01J 2237/31798](#)

plasma processing: [H01J 2237/32](#) to [H01J 2237/339](#)

- U H01J 2237/244      • Detection characterized by the detecting means
- U H01J 2237/2441      • • Semiconductor detectors, e.g. diodes
- U H01J 2237/24415      • • • X-ray
- H01J 2237/2442      • • • • Energy-dispersive [\(Si-Li type\) spectrometer](#) ~~(Si-Li type)spectrometer~~
- U H01J 2237/26      • Electron or ion microscopes
- U H01J 2237/285      • • Emission microscopes
- H01J 2237/2852      • • • Auto-emission [\(i.e. field-emission\)](#) ~~(i.e. field-emission)~~
- U H01J 2237/30      • Electron or ion beam tubes for processing objects
- U H01J 2237/317      • • Processing objects on a micro-scale
- H01J 2237/31715      • • • Particle-beam lithography, e.g. electron beam ~~lithography~~ **WARNING**  
     This group and subgroups thereof are not complete, see provisionally  
     H01J 2237/3175 and subgroups [lithography](#)

**WARNING**

*This group and subgroups thereof are not complete, see provisionally  
H01J 2237/3175 and subgroups*

**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 21/02104      • • {Forming layers (deposition in general [C23C](#); crystal growth in general [C30B](#))}
- WARNING**  
     Group [H01L 21/02104](#) and subgroups are not complete pending reorganisation. See also groups [H01L 21/20](#) , [H01L 21/36](#) , [H01L 21/06](#) , [H01L 21/16](#) and subgroups
- U H01L 21/02107      • • • {Forming insulating materials on a substrate}
- WARNING**  
     This group and subgroups are not complete pending the completion of a reclassification; see also [H01L 21/312](#) , [H01L 21/314](#) , [H01L 21/316](#) , and [H01L 21/318](#) and subgroups thereof



- U H01L 21/02109 . . . {characterised by the type of layer, e.g. type of material, porous/non-porous, pre-cursors, mixtures or laminates}
- U H01L 21/02112 . . . {characterised by the material of the layer}
- NOTE  
Layers comprising sublayers, i.e. multi-layers, are additionally classified in [H01L 21/022](#) ; porous layers are additionally classified in [H01L 21/02203](#)
- U H01L 21/02118 . . . {carbon based polymeric organic or inorganic material, e.g. polyimides, poly cyclobutene or PVC(polymers per se [C08G](#), photoresist per se [G03F](#))}
- H01L 21/0212 . . . {the material being fluoro carbon compounds, e.g.  $(CF_x)_n$ ,  $(CH_xF_y)_n$  or polytetrafluoroethylene  $(CF_x)_n$ ,  $(CH_xF_y)_n$  or polytetrafluoroethylene}
- 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](#) )}
- U H01L 21/0405 . . {the devices having semiconductor bodies comprising semiconducting carbon, e.g. diamond, diamond-like carbon( multistep processes for the manufacture of said devices [H01L 29/66015](#) )}
- NOTE  
This group covers passivation
- H01L 21/042 . . . ~~N~~: {Changing their shape, e.g. forming recesses (etching of the semiconductor body [H01L 21/302](#))}
- U H01L 21/18 . . the devices having semiconductor bodies comprising elements of the fourth group of the Periodic System or IIIIV 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 IIIIV compounds, even if the material used is not explicitly specified.
- 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 )
- H01L 21/265 . . . producing ion implantation( ion beam tubes for localised treatment [H01J 37/30](#) )
- WARNING  
The groups ~~H10L21/26566~~[H01L 21/26566](#), [H01L 21/2658](#) and [H01L 21/26593](#) are not complete, see provisionally also [H01L 21/26506](#) and [H01L 21/2654](#) and their subgroups
- 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 21/28008 . . . {Making conductor-insulator-semiconductor electrodes}

- U H01L 21/28017 . . . . . {the insulator being formed after the semiconductor body, the semiconductor being silicon}
- NOTE  
This group covers deposition of the insulators, including epitaxial insulators, and the conductors within the same process or chamber
- U H01L 21/28158 . . . . . {Making the insulator}
- U H01L 21/28167 . . . . . {on single crystalline silicon, e.g. using a liquid, i.e. chemical oxidation}
- H01L 21/28211 . . . . . {in a gaseous ambient using an oxygen or a water vapour, e.g. RTO, possibly through a layer( [H01L 21/28194](#) and [H01L 21/28202](#) take precedence )}{~~Note: thin oxidation layers used as a barrier layer or as a buffer layer, e.g. before the formation of a high-k insulator, are classified here only if important per se~~}
- NOTE  
*thin oxidation layers used as a barrier layer or as a buffer layer, e.g. before the formation of a high-k insulator, are classified here only if important per se*
- 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 21/324 . . . . Thermal treatment for modifying the properties of semiconductor bodies, e.g. annealing, sintering( [H01L 21/20](#) to [H01L 21/288](#) and [H01L 21/302](#) to [H01L 21/322](#) take precedence )
- H01L 21/3247 . . . . . {for altering the shape, e.g. smoothing the surface}{~~Warning: Not complete, see provisionally also H01L 21/324~~}
- WARNING  
*Not complete, see provisionally also H01L 21/324*
- U H01L 21/70 . Manufacture or treatment of devices consisting of a plurality of solid state components formed in or on a common substrate or of parts thereof; Manufacture of integrated circuit devices or of parts thereof({ multistep manufacturing processes of assemblies consisting of a plurality of individual semiconductor or other solid state devices [H01L 25/00](#) }, manufacture of assemblies consisting or preformed electrical components [H05K 3/00](#) , [H05K 13/00](#) )
- U H01L 21/71 . . Manufacture of specific parts of devices defined in group [H01L 21/70](#) ({ [H01L 21/0405](#) , [H01L 21/0445](#) }, [H01L 21/28](#) , [H01L 21/44](#) , [H01L 21/48](#) take precedence )
- H01L 21/768 . . . Applying interconnections to be used for carrying current between separate components within a device{comprising conductors and dielectrics}
- NOTE  
Groups [H01L 21/768](#) to [H01L 21/76898](#) cover multi-step processes for manufacturing interconnections.  
Information peculiar to single-step processes should also be classified in the corresponding group, e.g.  
- cleaning ~~H02L 21/02041~~ [H01L 21/02041](#)  
- etching [H01L 21/311](#) , [H01L 21/3213](#)  
- masking [H01L 21/027](#) , [H01L 21/033](#) , [H01L 21/31144](#) , [H01L 21/32139](#)  
- planarizing [H01L 21/3105](#) , [H01L 21/321](#)
- U H01L 21/76801 . . . . {characterised by the formation and the after-treatment of the dielectrics, e.g. smoothing}

- U H01L 21/76802 . . . . {by forming openings in dielectrics}
- H01L 21/76816 . . . . . ~~ÜN-~~ {Aspects relating to the layout of the pattern or to the size of vias or trenches (layout of the interconnections per se [H01L 23/528](#); CAD of ICs [G06F 17/50](#)-)}
- H01L 21/76822 . . . . . {Modification of the material of dielectric layers, e.g. grading, after-treatment to improve the stability of the layers, to increase their density etc.} ~~{WARNING: Groups H01L 21/76822 - H01L 21/76837 are not complete; see provisionally H01L 21/76801}~~
- WARNING  
Groups [H01L 21/76822](#) - [H01L 21/76837](#) are not complete; see provisionally [H01L 21/76801](#)
- H01L 25/00** Assemblies consisting of a plurality of individual semiconductor or other solid state devices{; Multistep manufacturing processes thereof} (~~{lead frames with assemblies of semiconductor devices thereon [H01L 23/49575](#); assembling semiconductor devices using processes or apparatus not provided for in a single one of the subgroups [H01L 21/06](#) to [H01L 21/326](#), e.g. sealing of a cap to a base of a container, [H01L 21/50](#)};~~ devices consisting of a plurality of solid state components formed in or on a common substrate [H01L 27/00](#); ~~assemblies of photoelectric cells [H01L 31/042](#), { [H01G 9/20](#) }; generators using solar cells or solar panels{[H02S](#)}; details of complete circuit assemblies for which provision exists in another subclass, e.g. details of television receivers, see the relevant subclass, e.g. [H04N](#); details of assemblies of electrical components in general [H05K](#); photovoltaic modules or arrays of photovoltaic cells [H01L 31/042](#) {, [H01G 9/20](#)}~~)
- U H01L 25/03 . all the devices being of a type provided for in the same subgroup of groups [H01L 27/00](#) to [H01L 51/00](#), e.g. assemblies of rectifier diodes
- U H01L 25/04 . . the devices not having separate containers
- U H01L 25/041 . . . { the devices being of a type provided for in group [H01L 31/00](#) }
- U H01L 25/043 . . . . {Stacked arrangements of devices}
- D H01L 25/045 . . . . . {the devices being solar cells}
- 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 27/10 . . . including a plurality of individual components in a repetitive configuration

- U H01L 27/105
  - • • including field-effect components
  - WARNING  
In this group and its subgroups classification is made in any appropriate place
- U H01L 27/112
  - • • • Read-only memory structures{[ROM]and multistep manufacturing processes therefor}
- U H01L 27/115
  - • • • • Electrically programmable read-only memories{and multistep manufacturing processes therefor}
- U H01L 27/11517
  - • • • • {with floating gate}
  - WARNING  
Group [H01L 27/11517](#) and subgroups are not complete pending reorganisation. See also [H01L 27/115](#)
- H01L 27/1156
  - • • • • • ~~N-~~{the floating gate being an electrode shared by a plurality of components}]}
- 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](#) )
- H01L 27/142
  - • Energy conversion devices (*photovoltaic modules or arrays of single photovoltaic cells comprising bypass diodes integrated or directly associated with the devices [H01L 31/0443](#); photovoltaic modules composed of a plurality of thin film solar cells deposited on the same substrate [H01L 31/046](#)*)
- D H01L 27/1422
  - • • {in a repetitive configuration, e.g. planar multijunction solar cells}
- D H01L 27/1423
  - • • • {comprising only thin film solar cells deposited on a substrate, e.g. thin film(a-Si, CIS, CdTe)solar modules}
- D H01L 27/1425
  - • • • {characterized by special patterning methods to connect the cells in a module, e.g. laser cutting of the conductive and/or active layers}
- D H01L 27/1426
  - • • • {comprising particular structures for the electrical interconnection of adjacent solar cells in the module}
- D H01L 27/1427
  - • • • {comprising specific means for obtaining a partial light transmission of the module, e.g. partially transparent thin film solar modules for windows}
- D H01L 27/1428
  - • • • {comprising multiple vertical junction or V-groove junction solar cells formed in a semiconductor substrate}

- 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 29/06** • • characterised by their shape; characterised by the shapes, relative sizes, or dispositions of the semiconductor regions; {characterised by the concentration or distribution of impurities within semiconductor regions}
- U H01L 29/08** • • • with semiconductor regions connected to an electrode carrying current to be rectified, amplified or switched and such electrode being part of a semiconductor device which comprises three or more electrodes
- U H01L 29/0843** • • • • {Source or drain regions of field-effect devices}
- U H01L 29/0847** • • • • • {of field-effect transistors with insulated gate ( [H01L 29/0653](#) takes precedence; with a passive supplementary region between source or drain and substrate related to punch-through, capacity or isolation phenomena [H01L 29/1079](#) ; with LDD or DDD structure [H01L 29/7833](#) ; for thin film transistors [H01L 29/78618](#) )}
- H01L 29/0852** • • • • • {of DMOS transistors} { **WARNING: This group and subgroups thereof are not complete, see provisionally also H01L 29/0847 and H01L 29/7801 and subgroups thereof** }

**WARNING**

*This group and subgroups thereof are not complete, see provisionally also [H01L 29/0847](#) and [H01L 29/7801](#) and subgroups thereof*

- U H01L 29/40** • Electrodes; {Multistep manufacturing processes therefor}
- U H01L 29/41** • • characterised by their shape, relative sizes or dispositions
- U H01L 29/423** • • • not carrying the current to be rectified, amplified or switched
- U H01L 29/42312** • • • • {Gate electrodes for field effect devices}
- U H01L 29/42316** • • • • • {for field-effect transistors}
- U H01L 29/4232** • • • • • • {with insulated gate}

H01L 29/42356	<ul style="list-style-type: none"> <li>• • • • • {Disposition, e.g. buried gate electrode( <a href="#">H01L 29/42324</a> and <a href="#">H01L 29/4234</a> take precedence )}{<del>WARNING: This group and subgroup thereof are not complete, see provisionally also H01L 29/78 , H01L 29/7801 and subgroups thereof, H01L 29/7827 and H01L 29/7834 }</del></li> </ul> <p><u>WARNING</u> This group and subgroup thereof are not complete, see provisionally also <a href="#">H01L 29/78</a> , <a href="#">H01L 29/7801</a> and subgroups thereof, <a href="#">H01L 29/7827</a> and <a href="#">H01L 29/7834</a></p>
U H01L 29/43	<ul style="list-style-type: none"> <li>• • characterised by the materials of which they are formed</li> </ul>
U H01L 29/49	<ul style="list-style-type: none"> <li>• • • Metal-insulator-semiconductor electrodes,{e.g. gates of MOSFET( <a href="#">H01L 29/435</a> takes precedence )}</li> </ul> <p><u>NOTE</u> This group covers also devices using any other conductor material in place of metal</p>
U H01L 29/4983	<ul style="list-style-type: none"> <li>• • • • {with a lateral structure, e.g. a Polysilicon gate with a lateral doping variation or with a lateral composition variation or characterised by the sidewalls being composed of conductive, resistive or dielectric material}</li> </ul>
H01L 29/4991	<ul style="list-style-type: none"> <li>• • • • {comprising an air gap}{<del>Warning: Not complete, see provisionally also H01L 29/4983 }</del></li> </ul> <p><u>WARNING</u> Not complete, see provisionally also <a href="#">H01L 29/4983</a></p>
U H01L 29/66	<ul style="list-style-type: none"> <li>• Types of semiconductor device;{Multistep manufacturing processes therefor}</li> </ul>
U H01L 29/68	<ul style="list-style-type: none"> <li>• • controllable by only the electric current supplied, or only the electric potential applied, to an electrode which does not carry the current to be rectified, amplified or switched</li> </ul>
U H01L 29/76	<ul style="list-style-type: none"> <li>• • • Unipolar devices,{e.g. field effect transistors}</li> </ul>
U H01L 29/778	<ul style="list-style-type: none"> <li>• • • • with two-dimensional charge carrier gas channel, e.g. HEMT;{with two-dimensional charge-carrier layer formed at a heterojunction interface( <a href="#">H01L 29/803</a> takes precedence )}</li> </ul>
U H01L 29/78	<ul style="list-style-type: none"> <li>• • • • • with field effect produced by an insulated gate{( <a href="#">H01L 29/7725</a> , <a href="#">H01L 29/775</a> , <a href="#">H01L 29/778</a> take precedence )}</li> </ul>
U H01L 29/7801	<ul style="list-style-type: none"> <li>• • • • • {DMOS transistors, i.e. MISFETs with a channel accommodating body or base region adjoining a drain drift region( lateral high-voltage MISFETs with channel well and drain offset region <a href="#">H01L 29/7835</a> )}</li> </ul>
U H01L 29/7802	<ul style="list-style-type: none"> <li>• • • • • {Vertical DMOS transistors, i.e. VDMOS transistors}</li> </ul>
H01L 29/7803	<ul style="list-style-type: none"> <li>• • • • • {structurally associated with at least one other device( assemblies <a href="#">H01L 25/00</a> ; integrated circuits <a href="#">H01L 27/00</a> )}{<del>WARNING: This group and subgroups thereof are not complete, see provisionally also H01L 29/7802 }</del></li> </ul> <p><u>WARNING</u> This group and subgroups thereof are not complete, see provisionally also <a href="#">H01L 29/7802</a></p>



- H01L 29/7811 . . . . . {with an edge termination structure( guard regions per se [H01L 29/0619](#) ; field plates per se [H01L 29/402](#) )}{~~WARNING: This group is not complete, see provionally also H01L 29/7802 , H01L 29/7809 and H01L 29/7813~~}
- WARNING  
*This group is not complete, see provionally also [H01L 29/7802](#) , [H01L 29/7809](#) and [H01L 29/7813](#)*
- H01L 29/7815 . . . . . {with voltage or current sensing structure, e.g. emulator section, overcurrent sensing cell}{ ~~WARNING: This group is not complete, see provisionally also H01L 29/7802 , H01L 29/7809 and H01L 29/7813~~ }
- WARNING  
*This group is not complete, see provisionally also [H01L 29/7802](#) , [H01L 29/7809](#) and [H01L 29/7813](#)*
- H01L 29/7816 . . . . . {Lateral DMOS transistors, i.e. LDMOS transistors}{~~WARNING: This group and subgroups thereof are not complete, see provisionally also H01L 29/7801~~ }
- WARNING  
*This group and subgroups thereof are not complete, see provisionally also [H01L 29/7801](#)*
- U H01L 29/7827 . . . . . {Vertical transistors( [H01L 29/7802](#) , [H01L 29/78642](#) take precedence )}
- H01L 29/7828 . . . . . {without inversion channel, e.g. vertical ACCUFETs, normally-on vertical MISFETs}{~~WARNING: This group is not complete, see provisionally also H01L 29/7827~~ }
- WARNING  
*This group is not complete, see provisionally also [H01L 29/7827](#)*
- H01L 29/7842 . . . . . {means for exerting mechanical stress on the crystal lattice of the channel region, e.g. using a flexible substrate( variation of the composition of the channel [H01L 29/1054](#) )}{~~Warning: The groups H01L 29/7843 to H01L 29/7849 are not complete, see provisionally also H01L 29/7842~~ }
- WARNING  
*The groups [H01L 29/7843](#) to [H01L 29/7849](#) are not complete, see provisionally also [H01L 29/7842](#)*
- 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 31/02	• Details
U	H01L 31/02016	• • {Circuit arrangements of general character for the devices}
U	H01L 31/02019	• • • {for devices characterised by at least one potential jump barrier or surface barrier}
	H01L 31/02021	• • • • {for solar cells ( <i>Electrical connection means, e.g. junction boxes, specially adapted for structural association with photovoltaic modules H02S 40/34</i> )}
	H01L 31/0203	• • Containers; Encapsulations {, { e.g. encapsulation of photodiodes } ( <i>encapsulation or housing for solar cells H01L 31/048 for photovoltaic devices H01L 31/048; for organic photosensitive devices H01L 51/44</i> ) }
	H01L 31/0216	• • Coatings ( <i>H01L 31/041 takes precedence</i> )
	H01L 31/0232	• • Optical elements or arrangements associated with the device { ( <i>optical elements or arrangements for solar cells H01L 31/052 H01L 31/0236 takes precedence; for photovoltaic cells H01L 31/054; for photovoltaic modules H02S 40/20</i> ) }
	H01L 31/024	• • Arrangements for cooling, heating, ventilating or temperature compensation { ( <i>cooling arrangements for solar cells H01L 31/052 for photovoltaic devices H01L 31/052</i> ) }
	H01L 31/04	• adapted as <i>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)</i>
D	H01L 31/0406	• • {Thermophotovoltaic systems}
N	H01L 31/041	• • Provisions for preventing damage caused by corpuscular radiation, e.g. for space applications
D	H01L 31/0413	• • {specially adapted for preventing damage caused by radiation, { H01L 31/0216 takes precedence } }
	H01L 31/042	• • <i>including a panel PV modules or array arrays of photoelectric cells, e.g. solar cells single PV cells (supporting structures for PV modules H02S 20/00)</i>
D	H01L 31/0422	• • • {characterised by the supporting structure or by the frame structure { H01L 31/045 takes precedence } }
D	H01L 31/0424	• • • • {characterised by the frame structure of the solar panel}
D	H01L 31/0426	• • • {specially adapted to be used in motorway sound barriers}
D	H01L 31/0428	• • • {comprising DC/AC inverter means associated with the panel itself, e.g. AC module { DC/AC inverters per se H02M } }
N	H01L 31/043	• • • Mechanically stacked PV cells
N	H01L 31/044	• • • including bypass diodes ( <i>bypass diodes in the junction box H02S 40/34</i> )
N	H01L 31/0443	• • • • comprising bypass diodes integrated or directly associated with the devices, e.g. bypass diodes integrated or formed in or on the same substrate as the photovoltaic cells
N	H01L 31/0445	• • • including thin film solar cells, e.g. single thin film a-Si, CIS or CdTe solar cells
D	H01L 31/045	• • • collapsible or foldable
N	H01L 31/046	• • • • PV modules composed of a plurality of thin film solar cells deposited on the same substrate
N	H01L 31/0463	• • • • characterised by special patterning methods to connect the PV cells in a module, e.g. laser cutting of the conductive or active layers
N	H01L 31/0465	• • • • comprising particular structures for the electrical interconnection of adjacent PV cells in the module ( <i>H01L 31/0463 takes precedence</i> )

- N H01L 31/0468 . . . . comprising specific means for obtaining partial light transmission through the module, e.g. partially transparent thin film solar modules for windows
- N H01L 31/047 . . . PV cell arrays including PV cells having multiple vertical junctions or multiple V-groove junctions formed in a semiconductor substrate
- N H01L 31/0475 . . . PV cell arrays made by cells in a planar, e.g. repetitive, configuration on a single semiconductor substrate; PV cell microarrays (PV modules composed of a plurality of thin film solar cells deposited on the same substrate [H01L 31/046](#))
- H01L 31/048 . . . ~~encapsulated or with housing~~ *Encapsulation of modules*
- D H01L 31/0482 . . . . {specially adapted for house roof structures, e.g. roof tile elements}
- D H01L 31/0483 . . . . {Roof tile elements}
- D H01L 31/0484 . . . . {specially adapted for flat roofs}
- D H01L 31/0485 . . . . {comprising specially adapted electrical connection means to the solar panel, e.g. junction boxes}
- D H01L 31/0486 . . . . {with cooling means associated with the electrical connection means, e.g. cooling means associated with or applied to the junction box (cooling means for solar cells or solar cell modules [H01L 31/052](#))}
- D H01L 31/0487 . . . . {Protective back-sheets}
- N H01L 31/049 . . . . *Protective back sheets*
- H01L 31/05 . . . . ~~characterised by special interconnection means; {comprising~~ *Electrical interconnection means for series or parallel connection of solar between PV cells in a inside the PV module, or for electrical interconnection e.g. series connection of two or more solar cell modules} PV cells (electrodes [H01L 31/0224](#); electrical interconnection of thin film solar cells formed on a common substrate [H01L 31/046](#); particular structures for electrical interconnecting of adjacent thin film solar cells in the module [H01L 31/0465](#); electrical interconnection means specially adapted for electrically connecting two or more PV modules [H02S 40/36](#))*
- H01L 31/052 . . . . ~~with cooling, light-reflecting~~ *Cooling means directly associated or light-concentrating means {integrated with passive cooling means the PV cell, e.g. heatsinks} integrated Peltier elements for active cooling or heat sinks directly associated with the PV cells (cooling means in combination with the PV module [H02S 40/42](#))*
- H01L 31/0521 . . . . {using a gaseous or a liquid coolant, e.g. air flow ventilation, water circulation}
- D H01L 31/0522 . . . . {light reflecting or light concentrating means for solar cells or solar cells modules}
- D H01L 31/0524 . . . . {comprising light concentrating means of the refractive type, e.g. lenses}
- H01L 31/0525 . . . . ~~{comprising light concentrating~~ *including means of to utilise heat energy directly associated with the reflecting type PV cell, e.g. parabolic mirrors, concentrators using total internal reflection} integrated Seebeck elements*
- D H01L 31/0527 . . . . {comprising light reflecting layers integrated to the solar cell, e.g. of the back surface reflector [BSR] type}
- D H01L 31/0528 . . . . {comprising spectrum splitting means, e.g. dichroic mirrors}
- N H01L 31/053 . . . Energy storage means directly associated or integrated with the PV cell, e.g. a capacitor integrated with a PV cell (energy storage means associated with the PV module [H02S 40/38](#))
- N H01L 31/054 . . . Optical elements directly associated or integrated with the PV cell, e.g. light-reflecting means or light-concentrating means

- N H01L 31/0543 . . . {comprising light concentrating means of the refractive type, e.g. lenses}
- N H01L 31/0547 . . . {comprising light concentrating means of the reflecting type, e.g. parabolic mirrors, concentrators using total internal reflection}
- N H01L 31/0549 . . . {comprising spectrum splitting means, e.g. dichroic mirrors}
- H01L 31/055 . . . where light is absorbed and re-emitted at a different wavelength by the **concentrator optical element directly associated or integrated with the PV cell**, e.g. by using luminescent material, **fluorescent concentrators or up-conversion arrangements**
- N H01L 31/056 . . . the light-reflecting means being of the back surface reflector [BSR] type
- D H01L 31/058 . . . including means to utilise heat energy, e.g. hybrid systems, or a supplementary source of electric energy (using solar heat per se F24J 2/00); {Photovoltaic systems comprising special energy storage means}
- D H01L 31/0583 . . . {using a supplementary source of electric energy, e.g. hybrid wind-photovoltaic, thermoelectric-photovoltaic or diesel-photovoltaic energy systems}
- D H01L 31/0586 . . . {comprising special energy storage means}
- H01L 31/06 . . . characterised by at least one potential-jump barrier or surface barrier

NOTE

Groups [H01L 31/061](#) to ~~31/078~~[H01L 31/078](#) are based on IPC2012.01]

- U H01L 41/00 Piezo-electric devices in general; Electrostrictive devices in general; Magnetostrictive devices in general; Processes or apparatus specially adapted for 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](#) )**

WARNING

1. Groups [H01L 41/22](#) - [H01L 41/47](#) correspond to IPC2013.01. Concordance CPC : IPC for these groups is as follows: - [H01L 41/22](#) - [H01L 41/37](#) : [H01L 41/22](#) - [H01L 41/39](#) - [H01L 41/43](#) : [H01L 41/24](#) - [H01L 41/45](#) : [H01L 41/26](#) - [H01L 41/47](#) : [H01L 41/22](#) 2. Pending reorganisation, the groups [H01L 41/23](#) to [H01L 41/47](#) are not complete; see provisionally also [H01L 41/22](#)

- U H01L 41/08 . Piezo-electric or electrostrictive devices

WARNING

Pending reorganisation, the groups [H01L 41/0805](#), [H01L 41/082](#), and [H01L 41/0825](#) are not complete, see provisionally also [H01L 41/08](#)

- U H01L 41/09 . . {with electrical input and mechanical output e.g. actuators, vibrators} (in frequency selective networks [H03H 9/00](#))
- U H01L 41/0926 . . . {using bending displacement, e.g. unimorph, bimorph or multimorph cantilever or membrane benders}

WARNING

Pending reorganisation, the groups [H01L 41/0933](#) to [H01L 41/098](#) are not complete, see provisionally also [H01L 41/0926](#)

- U H01L 41/0973 . . . {Membrane type}
- H01L 41/098 . . . ~~N~~ {with non-planar shape}

- U H01L 51/00** Solid state devices using organic materials as the active part, or using a combination of organic materials with other materials as the active part; Processes or apparatus specially adapted for the manufacture or treatment of such devices, or of parts thereof ( devices consisting of a plurality of components formed in or on a common substrate [H01L 27/28](#) ; thermoelectric devices using organic material [H01L 35/00](#) , [H01L 37/00](#) ; piezoelectric, electrostrictive or magnetostrictive elements using organic material [H01L 41/00](#) )
- H01L 51/50 • specially adapted for light emission, e.g. organic light emitting diodes [[OLED](#)] or [polymer light emitting devices \(PLED\)](#) (~~OLED~~) or ~~polymer light emitting devices (PLED)~~; ~~{Multistep processes for their manufacture}~~ ( organic semiconductor lasers [H01S 5/36](#) ; { circuit arrangements for OLED or PLED [H05B 33/0896](#) ; control arrangements for organic electroluminescent displays [G09G 3/3208](#) } )
- U H01L 2224/00** Indexing scheme for arrangements for connecting or disconnecting semiconductor or solid-state bodies and methods related thereto as covered by [H01L 24/00](#)
- U H01L 2224/80 • Methods for connecting semiconductor or other solid state bodies using means for bonding being attached to, or being formed on, the surface to be connected
- U H01L 2224/84 • • using a strap connector
- U H01L 2224/84053 • • • Bonding environment
- H01L 2224/84085 • • • • being a liquid ([e.g. for fluidic self-assembly](#)) (~~e.g. for fluidic self-assembly~~)
- U H01L 2924/00** Indexing scheme for arrangements or methods for connecting or disconnecting semiconductor or solid-state bodies as covered by [H01L 24/00](#)
- U H01L 2924/0001 • Technical content checked by a classifier
- NOTE  
Codes [H01L 2924/0001](#) to [H01L 2924/0002](#) are used to describe the status of reclassification; they do not relate to technical features as such
- H01L 2924/0002 • • Not covered by any one of groups [H01L 24/00](#), ~~T01L24~~[H01L 24/00](#) and ~~T01L224~~[H01L 2224/00](#)

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

- U H01M 6/00** **Primary cells; Manufacture thereof**
- NOTE  
In this group, primary cells are electrochemical generators in which the cell energy is present in chemical form and is not regenerated.
- U H01M 6/14 • Cells with non-aqueous electrolyte {[H01M 10/05](#) takes precedence}
- U H01M 6/18 • • with solid electrolyte
- H01M 6/181 • • • ~~{N:}~~ {with polymeric electrolytes (organic polymers electrolytes [H01M 2300/0082](#))}
- 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 10/42 • Methods or arrangements for servicing or maintenance of secondary cells or secondary half-cells
- U H01M 10/50 • • Heating or cooling or regulating temperature (control of temperature in general [G05D 23/00](#))

H01M 10/5002

- • { Types of temperature regulation}

WARNING

Groups ~~H01M 10/5002 to H01M 10/5097~~ are not complete, pending reclassification. See also ~~H01M 10/50~~, **H01M10/50B**, ~~H01M 2200/10-H01M 2200/108~~

*Groups H01M 10/5002 to H01M 10/5097 are not complete, pending reclassification. See also H01M 10/50, **H01M10/50B**, H01M 2200/10-H01M 2200/108*

**Project: N/A (H01P)**

U H01P 3/00

**Waveguides; Transmission lines of the waveguide type**

U H01P 3/12

- Hollow waveguides ([H01P 3/20](#) takes precedence)

H01P 3/122

- { Dielectric loaded (*not air*)}~~{not air}~~

**Project: N/A (H01R)**

U H01R 9/00

Connectors and connecting arrangements providing a plurality of mutually insulated connections; Terminals or binding posts mounted upon a base or in a case; Terminal strips; Terminal blocks (details of direct connections or connections using contact members penetrating insulation [H01R 4/00](#); { individual connecting parts [H01R 11/00](#);} specially adapted for printed circuits, flat or ribbon cables, or like generally planar structures [H01R 12/00](#); coupling devices [H01R 12/70](#), [H01R 24/00-H01R 33/00](#); flexible or turnable line connectors [H01R 35/00](#))

U H01R 9/03

- Connectors arranged to contact a plurality of the conductors of a multiconductor cable, {e.g. tapping connections}

H01R 9/07

- • for flat or ribbon cables { or flexible printed circuits}

WARNING

~~This group and it subgroups is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and it subgroups is being continuously reclassified to H01R 12/00, H01R 12/50 and their respective subgroups.~~

*This group and it subgroups is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and it subgroups is being continuously reclassified to H01R 12/00, H01R 12/50 and their respective subgroups.*

H01R 9/09

- Connectors for printed circuits (printed connections to or between printed circuits [H05K](#)); { Terminals, terminal strips, terminal blocks or bases for printed circuits}

WARNING

~~This group and it subgroups is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and it subgroups is being continuously reclassified to H01R 12/00, H01R 12/50 and their respective subgroups.~~

*This group and it subgroups is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and it subgroups is being continuously reclassified to H01R 12/00, H01R 12/50 and their respective subgroups.*



**H01R 12/00**

**Structural associations of a plurality of mutually-insulated electrical connecting elements, specially adapted for printed circuits, e.g. printed circuit boards [PCBs], flat or ribbon cables, or like generally planar structures, e.g. terminal strips, terminal blocks; Coupling devices specially adapted for printed circuits, flat or ribbon cables, or like generally planar structures; Terminals specially adapted for contact with, or insertion into, printed circuits, flat or ribbon cables, or like generally planar structures (printed connections to, or between, printed circuits [H05K 1/11](#))**

**WARNING**

**Not complete pending completion of a reclassification; see also groups H01R 9/07, H01R 9/09, H01R 23/66, H01R 23/68, H01R 23/70, H01R 23/72 and their respective subgroups**

*Not complete pending completion of a reclassification; see also groups [H01R 9/07](#), [H01R 9/09](#), [H01R 23/66](#), [H01R 23/68](#), [H01R 23/70](#), [H01R 23/72](#) and their respective subgroups*

**H01R 12/50**

- Fixed connections

**WARNING**

**This group and its subgroups are not complete pending completion of a reclassification; see also groups H01R 9/07, H01R 9/09 and their respective subgroups**

*This group and its subgroups are not complete pending completion of a reclassification; see also groups [H01R 9/07](#), [H01R 9/09](#) and their respective subgroups*

**H01R 12/70**

- Coupling devices

**WARNING**

**This group and its subgroups are not complete pending completion of a reclassification; see also groups H01R 23/66, H01R 23/68, H01R 23/70, H01R 23/72 and their respective subgroups**

*This group and its subgroups are not complete pending completion of a reclassification; see also groups [H01R 23/66](#), [H01R 23/68](#), [H01R 23/70](#), [H01R 23/72](#) and their respective subgroups*

**H01R 23/00**

**Two-part coupling devices having four or more poles, with or without additional protective earth connection; Separate parts thereof**

**WARNING**

**This group is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group is being continuously reclassified to H01R 24/00 and its subgroups. See also **H01R107/00** as part of the indexing scheme associated with group H01R 24/00 and its subgroups, relating to the number of poles in a two-part coupling device.**

*This group is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group is being continuously reclassified to [H01R 24/00](#) and its subgroups. See also **H01R107/00** as part of the indexing scheme associated with group [H01R 24/00](#) and its subgroups, relating to the number of poles in a two-part coupling device.*

**H01R 23/02**

- having parallelly-arranged contacts for sliding engagement with their counter-contacts

**WARNING**

**This group and its subgroups is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and its**

subgroups is being continuously reclassified to H01R 24/00 and its subgroups. See also **H01R107/00** as part of the indexing scheme associated with group H01R 24/00 and its subgroups, relating to the number of poles in a two-part coupling device.

*This group and its subgroups is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and its subgroups is being continuously reclassified to H01R 24/00 and its subgroups. See also **H01R107/00** as part of the indexing scheme associated with group H01R 24/00 and its subgroups, relating to the number of poles in a two-part coupling device.*

H01R 23/26

- having concentrically or coaxially arranged contacts

WARNING

This group is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group is being continuously reclassified to H01R 24/38 and its subgroups. See also **H01R107/00** as part of the indexing scheme associated with group H01R 24/00 and its subgroups, relating to the number of poles in a two-part coupling device.

*This group is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group is being continuously reclassified to H01R 24/38 and its subgroups. See also **H01R107/00** as part of the indexing scheme associated with group H01R 24/00 and its subgroups, relating to the number of poles in a two-part coupling device.*

H01R 23/27

- Hermaphroditic coupling devices {(hermaphroditic contact members [H01R 13/28](#))}

WARNING

This group is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group is being continuously reclassified to H01R 24/84

*This group is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group is being continuously reclassified to H01R 24/84*

H01R 23/66

- for connection to or between flat or ribbon cables

WARNING

This group and its subgroups is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and its subgroups is being continuously reclassified to H01R 12/00, H01R 12/70 and their respective subgroups.

*This group and its subgroups is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and its subgroups is being continuously reclassified to H01R 12/00, H01R 12/70 and their respective subgroups.*

H01R 23/68

- for connection to or between printed circuits; { Non printed connecting arrangements of printed circuit boards (**PCB's**) (~~PCB's~~)([H01R 23/668](#) takes precedence)}

WARNING

This group and its subgroups is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and its subgroups is being continuously reclassified to H01R 12/00, H01R 12/70 and their respective subgroups.

*This group and its subgroups is no longer used for the classification of new documents as from January 01, 2011. The backlog of this group and its*

*subgroups is being continuously reclassified to H01R 12/00, H01R 12/70 and their respective subgroups.*

**Project: N/A (H02G)**

**H02G**

**INSTALLATION OF ELECTRIC CABLES OR LINES, OR OF COMBINED OPTICAL AND ELECTRIC CABLES OR LINES( distribution points incorporating switches [H02B](#); guiding telephone cords [H04M 1/15](#) ; cable ducts or mountings for telephone or telegraph exchange installations [H04Q 1/06](#) )**

NOTES

1. This subclass covers installation of communication cables or lines, including those comprising a combination of optical and electrical conductors, or of lightning conductors as well as installation of power cables or lines.

2. This subclass does not cover installation of purely optical cables, which is covered by groups { ~~G02B6/44C~~ [G02B 6/4401](#) } , [G02B 6/46](#) .

3. In this subclass, the following expression is used with the meaning indicated:

- "electric cable" includes cables comprising optical conductors, e.g. fibres, in combination with electrical conductors.

In this subclass it is desirable to add indexing codes of group [H02G 2200/00](#) whenever appropriate

**Project: N/A (H02K)**

**U H02K 16/00**

**Machines with more than one rotor or stator {(machines for transmitting mechanical power from a driving shaft to a driven shaft and comprising structurally interrelated motor and generator parts [H02K 51/00](#); permanent magnet machines with multiple rotors or stators relatively rotated for vectorially combining the excitation fields or the armature voltages [H02K 21/029](#))}**

**H02K 16/04**

• Machines with one rotor and stators

NOTE

Group ~~16/00~~ [H02K 16/00](#) takes precedence over groups [H02K 17/00](#) to [H02K 53/00](#).

**Project: N/A (H02M)**

**U H02M 7/00**

**Conversion of ac power input into dc power output; Conversion of dc power input into ac power output**

**U H02M 7/42**

• Conversion of dc power input into ac power output without possibility of reversal

**U H02M 7/44**

• • by static converters

**U H02M 7/48**

• • • using discharge tubes with control electrode or semiconductor devices with control electrode

**U H02M 7/53**

• • • • using devices of a triode or transistor type requiring continuous application of a control signal {([H02M 7/4807](#), [H02M 7/493](#) and [H02M 7/4826](#) take precedence)}

**U H02M 7/537**

• • • • • using semiconductor devices only, e.g. single switched pulse inverters

- U H02M 7/5383 . . . . . in a self-oscillating arrangement ([H02M 7/538](#) takes precedence)
- H02M 7/53846 . . . . . Control circuits {~~WARNING Group H02M 7/53846 and subgroups is not complete, see provisionally also H02M 7/5383 and subgroups~~}

WARNING

*Group H02M 7/53846 and subgroups is not complete, see provisionally also H02M 7/5383 and subgroups*

- U H02M 7/5387 . . . . . in a bridge configuration
- H02M 7/5388 . . . . . with asymmetrical configuration of switches {~~WARNING Group H02M 7/5388 is not complete, see provisionally also H02M 7/5387 and subgroups~~}

WARNING

*Group H02M 7/5388 is not complete, see provisionally also H02M 7/5387 and subgroups*

**Project: N/A (H02N)**

- D H02N 6/00 **Generators in which light radiation is directly converted into electrical energy (solar cells or assemblies thereof H01L 25/00, H01L 31/00)**

**Project: N/A (H02P)**

- H02P 21/00 **Arrangements or methods for the control of electric machines by vector control, e.g. by control of field orientation**

NOTES

1. Groups [H02P 21/06](#) to [H02P 21/12](#) cover vector control arrangements or methods involving the use of rotor position or speed sensors.
2. Vector control arrangements or methods not involving the use of rotor position or speed sensors are classified in groups [H02P 21/0039](#) and subgroups

When classifying in this group, it is desirable to also classify in groups ~~25/00~~[H02P 25/00](#) to ~~27/00~~[H02P 27/00](#) if the kind of AC motor, structural details, or the kind of supply voltage are of interest.

- H02P 23/00 **Arrangements or methods for the control of AC motors characterised by a control method other than vector control (starting [H02P 1/00](#); stopping or slowing [H02P 3/00](#); of two or more motors [H02P 5/00](#); of synchronous motors with electronic commutators [H02P 6/00](#); of DC motors [H02P 7/00](#); of stepping motors [H02P 8/00](#))**

NOTE

When classifying in this group, it is desirable to also classify in groups ~~25/00~~[H02P 25/00](#) to ~~27/00~~[H02P 27/00](#) if the kind of AC motor, structural details, or the kind of supply voltage are of interest.

**Project: N/A (H02S)****H02S**

**GENERATION OF ELECTRIC POWER BY CONVERSION OF INFRA-RED RADIATION, VISIBLE LIGHT OR ULTRAVIOLET LIGHT, e.g. USING PHOTOVOLTAIC [PV] MODULES** (light sensitive inorganic semiconductor devices [H01L 31/00](#); thermoelectric devices [H01L 35/00](#); pyroelectric devices [H01L 37/00](#); light sensitive organic semiconductor devices [H01L 51/00](#); obtaining electrical energy from radioactive sources [G21H 1/12](#); solar heat collectors [F24J 2/00](#))

**WARNING**

Subclass H02S corresponds to IPC2014.01. Concordance CPC : IPC for the groups is as follows: - H02S 10/00 : H01L 31/04 - H02S 20/00 : H01L 31/042 - H02S 30/00 : H01L 31/042 - H02S 40/00 : H01L 31/042 - H02S 50/00 : G01R 31/40 - H02S 99/00 : H02N 6/00 }

**H02S 10/00**

**PV power plants; Combinations of PV energy systems with other systems for the generation of electric power**

**WARNING**

Groups [H02S 10/10](#) - [H02S 10/40](#) are incomplete pending reclassification of documents from group [H02S 10/00](#).

Until reclassification is complete, groups [H02S 10/00](#) should be considered in order to perform a complete search.

- N [H02S 10/10](#)
  - including a supplementary source of electric power, e.g. hybrid diesel-PV energy systems (combinations with gas-turbine plants [F02C 6/00](#))
- N [H02S 10/12](#)
  - • Hybrid wind-PV energy systems
- N [H02S 10/20](#)
  - Systems characterised by their energy storage means ([H02S 40/38](#) takes precedence)
- N [H02S 10/30](#)
  - Thermophotovoltaic systems (photovoltaic cells specially adapted for conversion or sensing of infra-red [IR] radiation [H01L 31/00](#); thermoelectric devices [H01L 35/00](#))
- N [H02S 10/40](#)
  - Mobile PV generator systems

**H02S 20/00**

**Supporting structures for PV modules**

**NOTE**

Supporting structures also intended for use with solar heat collectors should also be classified in groups [F24J 2/38](#) or [F24J 2/52](#)

**WARNING**

Groups [H02S 20/10](#) - [H02S 20/32](#) are incomplete pending reclassification of documents from groups [H02S 20/00](#), [F24J 2/00](#), [F24J 2/38](#), and [H01L 31/048](#).

Until reclassification is complete, groups [H02S 20/00](#), [F24J 2/00](#), [F24J 2/38](#), and [H01L 31/048](#) should be considered in order to perform a complete search.

- N [H02S 20/10](#)
  - Supporting structures directly fixed to the ground ([H02S 20/30](#) takes precedence)
- N [H02S 20/20](#)
  - Supporting structures directly fixed to an immovable object ([H02S 20/30](#) takes precedence)
- N [H02S 20/21](#)
  - • specially adapted for motorways, e.g. integrated with sound barriers
- N [H02S 20/22](#)
  - • specially adapted for buildings
- N [H02S 20/23](#)
  - • • specially adapted for roof structures
- N [H02S 20/24](#)
  - • • specially adapted for flat roofs

- N H02S 20/25      • • • Roof tile elements
- N H02S 20/26      • • • Building materials integrated with PV modules, e.g. façade elements  
(H02S 20/25 takes precedence)
- N H02S 20/30      • Supporting structures being movable or adjustable, e.g. for angle adjustment
- N H02S 20/32      • • specially adapted for solar tracking

**H02S 30/00**

Structural details of PV modules **not involving other than those related to light conversion** (**semiconductor device aspects of inorganic PV modules H01L 31/00, of organic PV modules H01L 51/00, of modules of electrolytic light sensitive devices H01G 9/20** **semiconductor device aspects of modules of electrolytic light sensitive devices H01G 9/20, of inorganic PV modules H01L 31/00, of organic PV modules H01L 51/42**)

**WARNING**

Groups H02S 30/10 and H02S 30/20 are incomplete pending reclassification of documents from group H02S 30/00.

Until reclassification is complete, group H02S 30/00 should be considered in order to perform a complete search.

- N H02S 30/10      • Frame structures
- N H02S 30/20      • Collapsible or foldable PV modules

**H02S 40/00**

**Components or accessories specially adapted for 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.

- N H02S 40/10      • Cleaning arrangements
- N H02S 40/12      • • Means for removing snow
- N H02S 40/20      • Optical components
- N H02S 40/22      • • Light-reflecting or light-concentrating means (directly associated with the PV cell or integrated with the PV cell H01L 31/054)
- N H02S 40/30      • Electrical components
- N H02S 40/32      • • comprising DC/AC inverter means associated with the PV module itself, e.g. AC modules
- N H02S 40/34      • • comprising specially adapted electrical connection means to be structurally associated with the PV module, e.g. junction boxes
- N H02S 40/345      • • {with cooling means associated with the electrical connection means, e.g. cooling means associated with or applied to the junction box (cooling means for PV cells H01L 31/052, for PV modules H02S 40/42 )}
- N H02S 40/36      • • characterised by special electrical interconnection means between two or more PV modules, e.g. electrical module-to-module connection
- N H02S 40/38      • • Energy storage means, e.g. batteries, structurally associated with PV modules
- N H02S 40/40      • Thermal components (H02S 10/30 takes precedence)
- N H02S 40/42      • • Cooling means (cooling means directly associated or integrated with the PV cell H01L 31/052)



- N H02S 40/425
- • {using a gaseous or a liquid coolant, e.g. air flow ventilation, water circulation}
- N H02S 40/44
- • Means to utilise heat energy, e.g. hybrid systems producing warm water and electricity at the same time (directly associated with the PV cell or integrated with the PV cell [H01L 31/0525](#))

### H02S 50/00 **Monitoring or testing of PV systems, e.g. load balancing or fault identification**

#### WARNING

Groups H02S 50/10 - H02S 50/15 are incomplete pending reclassification of documents from group H02S 50/00.

Until reclassification is complete, group H02S 50/00 should be considered in order to perform a complete search.

- N H02S 50/10
- Testing of PV devices, e.g. of PV modules or single PV cells (testing of semiconductor devices during manufacturing {[H01L 22/00](#)})
- N H02S 50/15
- • using optical means, e.g. using electroluminescence

### Project: N/A (H03F)

- U H03F 2203/00 **Indexing scheme relating to amplifiers with only discharge tubes or only semiconductor devices as amplifying elements covered by [H03F 3/00](#)**
- U H03F 2203/72
- Indexing scheme relating to gated amplifiers, i.e. amplifiers which are rendered operative or inoperative by means of a control signal
- H03F 2203/7236
- • the gated amplifier being switched on or off by putting into parallel or not, by choosing between amplifiers by [\(a \) switch\(es\)](#) ~~(a ) switch(es)~~

### Project: N/A (H03K)

- U H03K 19/00 **Logic circuits, i.e. having at least two inputs acting on one output; Inverting circuits {(inverting circuits used as delay elements [H03K 5/13](#))}**
- U H03K 19/02
- using specified components ({[H03K 19/0005](#) to [H03K 19/0021](#)}, [H03K 19/003](#) to [H03K 19/0175](#) take precedence)
- U H03K 19/08
- • using semiconductor devices ([H03K 19/173](#) takes precedence; wherein the semiconductor devices are only diode rectifiers [H03K 19/12](#))
- H03K 19/0806
- • {using charge transfer devices [\(DTC, CCD\)](#)}~~(DTC, CCD)~~

### Project: N/A (H03M)

- U H03M 13/00 **Coding, decoding or code conversion, for error detection or error correction; Coding theory basic assumptions; Coding bounds; Error probability evaluation methods; Channel models; Simulation or testing of codes( error detection or error correction for analogue/digital, digital/ analogue or code conversion [H03M 1/00](#) to [H03M 11/00](#) ; specially adapted for digital computers [G06F 11/08](#) , for information storage based on relative movement between record carrier and transducer [G11B](#), e.g. [G11B 20/18](#) , for static stores [G11C](#); { use of error detection or error correction in transmission systems [H04L 1/004](#) , in television systems [H04N 7/0357](#) }**
- U H03M 13/65
- {Purpose and implementation aspects}
- H03M 13/6572
- • {Implementations using a tree structure, e.g. implementations in which the complexity is reduced by a tree structure from O(n) to O([log\(n\)](#))}~~(log(n))~~

**Project: N/A (H04B)**

U H04B 1/00 Details of transmission systems, not covered by a single one of groups [H04B 3/00](#) to [H04B 13/00](#) ; Details of transmission systems not characterised by the medium used for transmission(tuning resonant circuits [H03J](#))

NOTE

In this group, group [H04B 1/0003](#) takes precedence over groups [H04B 1/005](#) to [H04B 1/76](#)

- U H04B 1/06
  - Receivers( control of amplification [H03G](#) ; television receivers [H04N 5/44](#) , [H04N 5/64](#) )
- U H04B 1/10
  - • Means associated with receiver for limiting or suppressing noise or interference(induced by transmission( interference reduction in spread spectrum systems [H04B 1/7097](#) ; equalising on HF or IF [H04B 7/005](#) ; diversity systems [H04B 7/02](#) ; elimination of image frequencies [H03D 7/18](#) ; noise suppression by control of amplification [H03G 3/00](#) , [H03G 5/00](#) , [H03G 7/00](#) ; squelching [H03G 3/26](#) , [H03G 3/34](#) )}
- H04B 1/1018
  - • {noise filters connected between the power supply and the receiver( suppression or limitation of noise from electric apparatus [H04B 15/00](#) ; demodulation [H03D](#); ripple filters [H02M 1/14](#) ; ~~filters in general 95G, H03H~~; *filters in general 95G , H03H*; power supplies [H04B 1/1607](#) )}
- U H04B 1/16
  - • Circuits{( demodulators [H03D](#) )}
- H04B 1/1607
  - • {Supply circuits(~~converters 92P, 92Q, H02M~~; *converters 92P , 92Q , H02M*; filters therefor [H02M 1/14](#) ; voltage stabilisers [G05F 1/46](#) )}
- U H04B 1/69
  - Spread spectrum techniques
- H04B 1/692
  - • Hybrid techniques using combinations of two or more spread spectrum techniques

WARNING

~~Not complete pending the completion of reclassification; see also group H04B-1/69~~

*Not complete pending the completion of reclassification; see also group H04B 1/69*

- H04B 1/7163
  - • using impulse radio

WARNING

As from 01/04/2011 documents relating to pulse-related aspects are classified in [H04B 1/717](#) and the backlog for such documents is continuously being reclassified from [H04B 1/7163](#)

- H04B 1/717
  - • Pulse-related aspects

WARNING

~~Not complete pending the completion of reclassification; see also group H04B-1/7163~~

*Not complete pending the completion of reclassification; see also group H04B 1/7163*

- U H04B 10/00** **Transmission systems employing electromagnetic waves other than radio-waves, e.g. infrared, visible or ultraviolet light, or employing corpuscular radiation, e.g. quantum communication**

NOTE

Groups [H04B 10/03](#) , [H04B 10/07](#) , [H04B 10/11](#) , [H04B 10/25](#) , [H04B 10/27](#) , [H04B 10/29](#) and [H04B 10/40](#) to [H04B 10/90](#) , and their subgroups are based on IPC2013.01

WARNING

Group [H04B 10/2572](#) does not correspond to former or current IPC groups. Concordance CPC:IPC for this group is as follows: - [H04B 10/2572](#) : [H04B 10/2507](#)

H04B 10/70

- Photonic quantum communication

WARNING~~N12021~~

This group is not complete pending reclassification; see also [H04B 10/30](#)

**Project: N/A (H04H)**

- U H04H 20/00** **Arrangements for broadcast or for distribution combined with broadcast**
- U H04H 20/86
- H04H 20/95
- Arrangements characterised by the broadcast information itself
  - • characterised by a specific format, e.g. MP3 ([MPEG-1 Audio Layer 3](#))~~(MPEG-1 Audio Layer 3)~~

**Project: N/A (H04J)**

- U H04J 3/00** **Time-division multiplex systems( [H04J 14/00](#) takes precedence; relay systems [H04B 7/14](#) ; selecting techniques [H04Q](#) )**
- U H04J 3/16
- in which the time allocation to individual channels within a transmission cycle is variable, e.g. to accommodate varying complexity of signals, to vary number of channels transmitted( [H04J 3/17](#) , [H04J 3/24](#) take precedence )
- U H04J 3/1605
- H04J 3/1611
- • {Fixed allocated frame structures}
  - • • {Synchronous digital hierarchy [[SDH](#)] or [SONET](#) (~~SDH~~) or ~~SONET~~ ([H04J 3/1664](#) takes precedence for interactions with OTN )}
- U H04J 11/00** **Orthogonal multiplex systems,{e.g. using WALSH codes}( [H04J 13/00](#) takes precedence )**
- H04J 11/0023
- {Interference mitigation or co-ordination( traffic scheduling [H04W 72/082](#) , [H04W 72/1226](#) ; power management [H04W 52/00](#) ; allocation criteria for ingress interference avoidance [H04L 5/0062](#) ; frequency allocation criteria for requirements on out-of-channel emissions [H04L 5/0066](#) ; peak power aspects in multicarrier modulation [H04L 27/2614](#) ; arrangements for removing intersymbol interference or baseband equalisers [H04L 25/03006](#) ; direct sequence spread spectrum (~~DSSS~~) systems [H04B 1/7097](#) ; frequency hopping [H04B 1/713](#) )}
- U H04J 14/00** **Optical multiplex systems( optical coupling, mixing or splitting, per se [G02B](#) )**
- U H04J 14/02
- Wavelength-division multiplex systems
- U H04J 14/0287
- • {Protection in WDM systems}
- U H04J 14/0289
- • • {Optical multiplex section protection}
- H04J 14/0291
- • • • {Shared protection at the optical multiplex section ([1:1, n:m](#))}~~{1:1, n:m}~~
- U H04J 14/0293
- • • {Optical channel protection}

H04J 14/0295

- • • {Shared protection at the optical channel ~~(1:1, n:m)~~(1:1, n:m)}

U H04J 2211/00

**Orthogonal indexing scheme relating to orthogonal multiplex systems**

U H04J 2211/003

- within particular systems or standards

H04J 2211/006

- • Single carrier frequency division multiple access ~~(SC FDMA)~~(SC-FDMA)

**Project: N/A (H04L)**

U H04L 9/00

**{Cryptographic mechanisms or cryptographic}arrangements for secret or secure communication{( network architectures or network communication protocols for network security [H04L 63/00](#) or for wireless network security [H04W 12/00](#) ; security arrangements for protecting computers or computer systems against unauthorized activity [G06F 21/00](#) )}**

**NOTE**

1. This group covers: 1.1 Cryptographic mechanisms including cryptographic protocols and cryptographic algorithms, whereby a cryptographic protocol is a distributed cryptographic algorithm defined by a sequence of steps precisely specifying the actions required of two or more entities to achieve specific security objectives (e.g. cryptographic protocol for key agreement), and whereby a cryptographic algorithm is specifying the steps followed by a single entity to achieve specific security objectives (e.g. cryptographic algorithm for symmetric key encryption). 1.2 [H04L 9/00](#) focuses on cryptographic mechanisms such as encryption schemes, digital signatures, hash functions, random number generation, key management, said cryptographic mechanisms providing information security such as privacy or confidentiality, data integrity, message authentication, entity authentication, authorization, validation, certification, time-stamping, anonymity, revocation, non-repudiation. 1.3 [H04L 9/00](#) covers also countermeasures against attacks on cryptographic mechanisms. 2. This group does not cover: 2.1 Networking architectures or network communication protocols for securing the traffic flowing through data packet networks and providing secure exchanges among applications communicating through data packet networks, which are covered by [H04L 63/00](#) . Attention is drawn to the Note 1. after group [H04L 63/00](#) 2.2 Security arrangements for protecting computers or computer systems against unauthorised activity, which are covered by [G06F 21/00](#)

U H04L 9/08

- Key distribution{or management, e.g. generation, sharing or updating, of cryptographic keys or passwords( network architectures or network communication protocols for supporting key management in a packet data network [H04L 63/06](#) )}

**WARNING**

The former subgroup [H04L 9/08](#) was a 2-dot subgroup placed under [H04L 9/06](#) . However since the former subgroup [H04L 9/08](#) comprises both symmetric and asymmetric key distribution the subgroup [H04L 9/08](#) was promoted to one-dot-level, unlike the corresponding IPC subgroup

U H04L 9/0816

- • {Key establishment, i.e. cryptographic processes or cryptographic protocols whereby a shared secret becomes available to two or more parties, for subsequent use}

U H04L 9/0819

- • • {Key transport or distribution, i.e. key establishment techniques where one party creates or otherwise obtains a secret value, and securely transfers it to the other(s)( network architectures or network communication protocols for key distribution in a packet data network [H04L 63/062](#) )}

- H04L 9/0827
- • • ~~[N:]~~ {involving distinctive intermediate devices or communication paths (network architectures or network communication protocols using different networks [H04L 63/18](#))}
- U H04L 12/00** **Data switching networks( interconnection of, or transfer of information or other signals between, memories, input/output devices or central processing units [G06F 13/00](#) )**
- U H04L 12/02
- Details
- U H04L 12/24
- • Arrangements for maintenance or administration
- WARNING
- This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to subgroups of [H04L 41/00](#)
- U H04L 12/2464
- • • {Network service management, ensuring proper service fulfilment according to an agreement or contract between two parties, e.g. between an IT-provider and a customer}
- WARNING
- This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to subgroups of [H04L 41/50](#)
- H04L 12/2484
- • • • {Service discovery by the Service Manager( automatically determining the actual topology of a network [H04L 12/2416](#) ; topology discovery in routers [H04L 45/02](#) ; arrangements for service discovery, e.g. Service Location Protocol (~~[SLP]~~) [H04L 29/08648](#) )}
- WARNING
- This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to [H04L 41/5058](#)
- U H04L 12/28
- characterised by path configuration, e.g. local area networks (LAN), wide area networks (WAN)
- U H04L 12/40
- • Bus networks
- U H04L 12/40169
- • • {Flexible bus arrangements( arrangements for maintenance or administration involving management of faults; events, alarms [H04L 12/2419](#) ; automatic restoration of network faults [H04L 12/2422](#) )}
- U H04L 12/40176
- • • • {involving redundancy( error detection or correction of the data by redundancy in hardware using active fault-masking in interconnections [G06F 11/2002](#) ; error detection or correction of the data by redundancy in hardware using active fault-masking in storage systems using spares or by reconfiguring [G06F 11/2053](#) )}
- H04L 12/40202
- • • • ~~[N:]~~ {by using a plurality of master stations}
- U H04L 12/46
- • Interconnection of networks
- H04L 12/4641
- • • {Virtual LANs, VLANs, e.g. virtual private networks [VPN] ( virtual private networks for security [H04L 29/06612](#) ; routing of packets [H04L 12/5689](#) ; encapsulation techniques [H04L 12/4633](#) ; LAN interconnection over a bridge based backbone [H04L 12/462](#) ; packet switches [H04L 12/5696](#) )}

NOTE

(1) This group covers: -- a group of hosts with a common set of requirements that communicate as if they were attached to the same broadcast domain, regardless of their physical location. (2) This group does not cover: -- group multicasting, which is covered by H04L 12/18 -- configuration of switches supporting VLANs, which is covered by

H04L 12/2424 - multiprotocol label switching [MPLS], which is covered by H04L 12/5689 - spanning tree protocol [STP], which is covered by H04L 12/462 - arrangements for network security, which is covered by H04L 29/06612 - encapsulation techniques, which is covered by H04L 12/4633 - access arrangements, which is covered by H04L 12/2856 (3) In this group the following terms or expressions are used with the meaning indicated: - B-Tag means Backbone VLAN Tag - C-Tag means Customer VLAN Tag - GARP means Generic Attribute Registration Protocol - GVRP means GARP VLAN Registration Protocol - I-SID means Service Instance Identifier - MVRP means Multiple VLAN Registration Protocol - PBB means Provider Backbone Bridges - S-Tag means Service VLAN Tag - VLAN means Virtual Local Area Network - VPN means Virtual Private Network - VTP means VLAN Trunking Protocol]

(1) This group covers: - a group of hosts with a common set of requirements that communicate as if they were attached to the same broadcast domain, regardless of their physical location. (2) This group does not cover: - group multicasting, which is covered by H04L 12/18 - configuration of switches supporting VLANs, which is covered by H04L 12/2424 - multiprotocol label switching [MPLS], which is covered by H04L 12/5689 - spanning tree protocol [STP], which is covered by H04L 12/462 - arrangements for network security, which is covered by H04L 29/06612 - encapsulation techniques, which is covered by H04L 12/4633 - access arrangements, which is covered by H04L 12/2856 (3) In this group the following terms or expressions are used with the meaning indicated: - B-Tag means Backbone VLAN Tag - C-Tag means Customer VLAN Tag - GARP means Generic Attribute Registration Protocol - GVRP means GARP VLAN Registration Protocol - I-SID means Service Instance Identifier - MVRP means Multiple VLAN Registration Protocol - PBB means Provider Backbone Bridges - S-Tag means Service VLAN Tag - VLAN means Virtual Local Area Network - VPN means Virtual Private Network - VTP means VLAN Trunking Protocol]

- U H04L 29/00 Arrangements, apparatus, circuits or systems, not covered by a single one of groups [H04L 1/00](#) to [H04L 27/00](#) ( interconnection of, or transfer of information or other signals between, memories, input/output devices or central processing units [G06F 13/00](#) ){contains provisionally no documents}
- U H04L 29/02 • Communication control( in satellite networks [H04B 7/185](#) ); Communication processing( [H04L 29/12](#) , [H04L 29/14](#) take precedence ){contains provisionally no documents}
- U H04L 29/06 • • characterised by a protocol
- H04L 29/06061 • • {Notations for structuring of protocol data, e.g. Abstract Syntax Notation One ([ASN 1](#))}{[ASN 1](#)}
- U H04L 29/06176 • • {Arrangements for real-time multimedia communications( data switching systems for broadcast or conference [H04L 12/18](#) ; message switching systems [H04L 12/58](#) ; television systems [H04N 7/00](#) ; interconnection arrangements between switching centres for working between exchanges having different types of switching equipment where the types of switching equipment comprise PSTN/ISDN equipment and equipment of networks other than PSTN/ISDN [H04M 7/1205](#) ; systems providing special services to telephonic subscribers [H04M 3/42](#) ; network applications in general [H04L 29/08081](#) )}

#### NOTE

[N: Notes (1) This group covers: • only communications which fulfil the following two conditions: 1. they are based on packet data; 2. there is real-time or pseudo-real-time temporal association between source and



destination, or source and network, or destination and network; • provided that the above two conditions are met, this group covers arrangements relating to 1. the transmission of the multimedia data itself, 2. the user-to-user, user-to-network, inter-network or intra-network signalling supporting: a. the establishment of a session for the subsequent transmission of the multimedia data, or b. the maintenance of the session or c. the application services available to the user during the session (unless explicitly excluded in certain cases). (2) This group does not cover: • non-real-time multimedia file transfer, which is covered by [H04L 29/08117](#) . • multimedia store or forward messaging as in e-mail, MMS or the like, which is covered by [H04L 12/58](#) • analogue multimedia streaming, as in analogue television systems, which is covered by [H04N 7/00](#) and [H04N 5/00](#) • bit streaming, i.e. not packet-based, as in ISDN which is covered by [H04Q 11/04](#) • instant messaging, which is covered by [H04L 12/581](#) • any other multimodal data communications which do not meet the conditions of being packet-based and real-time or pseudo-real-time. (3) In this group the following terms or expressions are used with the meaning indicated: • H.323 means International Telecommunication Union Recommendation no. 323, series H, entitled "Packet-based multimedia communications systems" • IP means Internet Protocol • IMS means IP Multimedia Subsystem • ISDN means Integrated Services Digital Network • MGC means Media Gateway Control/Controller • MGCP means Media Gateway Control Protocol • MMS means Multimedia Messaging Service • PBX means Private Branch Exchange • PSTN means Public Switched Telephone Network • QoS means Quality of Service • RTP means Real Time Protocol • RTCP means Real Time Control Protocol • SIP means Session Initiation Protocol • SPAM means unsolicited electronic mail • SPIT means SPAM Prevention in IP Telephony] [N: WARNING [Group [H04L 29/06176](#) or subgroups are not complete pending reorganisation. See also [H04L 29/06027](#) ]

- H04L 29/06523
  - . . . {Quality of Service (QoS) aspects (QoS) aspects (arrangements for scheduling or organising the servicing of requests whereby quality of service or priority requirements are taken into account [H04L 29/08954](#) ; adaptation for terminals and/or networks with limited resources or for terminal portability [H04L 29/08108](#) ; data reduction and/or adaptation [H04L 29/08792](#) ; network application is adapted for the location of the user terminal [H04L 29/08657](#) )}
- U H04L 29/08
  - . . . Transmission control procedure, e.g. data link level control procedure
- U H04L 29/08009
  - . . . {Open systems interconnection (OSI) architecture, e.g. layering, entities, standards; Interface between layers; Software aspects}
- H04L 29/08072
  - . . . {Application layer, i.e. layer seven(not used)}  
~~{WARNING: from 01.01.2006 onwards, documents relating to the application layer, and in particular to protocols for network applications are classified in H04L 29/08081 and subgroups. All documents previously classified in H04L 29/08072 are reclassified in these groups }~~  
**WARNING**  
*from 01.01.2006 onwards, documents relating to the application layer, and in particular to protocols for network applications are classified in [H04L 29/08081](#) and subgroups. All documents previously classified in [H04L 29/08072](#) are reclassified in these groups*
- U H04L 29/08081
  - . . . {Protocols for network applications( message switching systems [H04L 12/58](#) ; protocols for multimedia communication [H04L 29/06027](#) ; protocols for telewriting [H04L 29/06034](#) )}

- H04L 29/08108 . . . . {adapted for terminals or networks with limited resources and for terminal portability, e.g. Wireless Application Protocol ~~[WAP]~~(WAP) ( services or facilities specially adapted for wireless communication networks [H04W 4/00](#) )}
- U H04L 29/08576 . . . . {Arrangements for session management( real-time session management for multimedia connections [H04L 29/06176](#) ; negotiation of communication capabilities [H04L 29/06537](#) ; packet switching or routing [H04L 12/56](#) ; connection management in wireless networks, e.g. connection set-up, manipulation or release [H04W 76/00](#) ; session management for telephonic communication and services [H04M 7/00](#) ; intertask communications in multiprogramming arrangements [G06F 9/54](#) )}
- NOTE  
This group covers session signaling at higher OSI layers to support networked applications.
- U H04L 29/08603 . . . . . {provided for session termination, e.g., event controlled end of session}
- H04L 29/08612 . . . . . {provided for avoiding end of session (*e.g. keep-alive, heartbeats, resumption message, wake-up for inactive or interrupted session*)}(~~e.g. keep-alive, heartbeats, resumption message, wake-up for inactive or interrupted session~~)}
- H04L 29/08648 . . . . {Arrangements for service discovery, e.g. Service Location Protocol ~~[SLP]~~(SLP) ( address allocation to terminals or nodes connected to a network [H04L 29/12009](#) )}
- U H04L 29/12 . . . . . {characterised by the data terminal{contains provisionally no documents}}
- U H04L 29/12009 . . . . {Arrangements for addressing and naming in data networks}
- NOTE  
(1) [H04L 61/00](#) covers aspects of data networks, excluding pure telephone solutions ( [H04M 7/00](#) ) or addressing within a device, e.g. process, memory etc. ( [G06F 13/42](#) or [G06F 12/00](#) ) . (2) Aspects relating to switching and routing are classified in [H04L 12/56](#) . (3) Main aspects covered by this groups are: address resolution; directories and name-to-address resolution; allocation of addresses; conversion of addresses; logical names and non-standard use of addresses
- WARNING  
This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to [H04L 61/00](#)
- U H04L 29/12207 . . . {Address allocation}
- WARNING  
This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to [H04L 61/20](#)
- H04L 29/12254 . . . . {for local use, e.g. on Local Area Networks ~~[LAN]~~ or on Universal Serial Bus (USB) networks(LAN)or on Universal Serial Bus (USB) networks( bus addresses inside a computer [G06F 13/42](#) )}
- WARNING  
This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to [H04L 61/2038](#)

- U H04L 29/12792      • • • {Details}
- WARNING  
This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to [H04L 61/60](#)
- U H04L 29/1283      • • • • {about address types}
- WARNING  
This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to [H04L 61/6018](#)
- H04L 29/12849      • • • • {Control Area Network *[CAN] identifiers*(CAN)identifiers( vehicle networks [B60R 16/0315](#) )}
- WARNING  
This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to [H04L 61/6027](#)
- H04L 41/00**      **{Arrangements for maintenance or administration or management of packet switching networks}{ ~~WARNING~~Groups H04L 41/00 - H04L 41/5096 do not correspond to former or current IPC groups.Concordance CPC : IPC for these groups is as follows:- H04L 41/00 - H04L 41/5096 : H04L 12/24 }**
- WARNING  
*Groups H04L 41/00 - H04L 41/5096 do not correspond to former or current IPC groups.Concordance CPC : IPC for these groups is as follows:- H04L 41/00 - H04L 41/5096 : H04L 12/24*
- U H04L 41/02      • {involving integration or standardization}
- U H04L 41/0246      • • {exchanging or transporting network management information using Internet , e.g. aspects relating to embedding network management web servers in network elements, web service for network management purposes, aspects related to Internet applications or services or web-based protocols, simple object access protocol [SOAP]( web-based network application protocols [H04L 67/02](#) ; web-based network application protocols for remote control of end-devices or monitoring of remote application data [H04L 67/025](#) ; proprietary application protocols for remote control of end-devices in special networking environments [H04L 67/125](#) ; retrieval from the Internet [G06F 17/30861](#) )}
- H04L 41/0273      • • • [~~N~~:{involving the use of web services for network management, e.g. SOAP}]
- U H04L 41/50      • {Network service management, i.e. ensuring proper service fulfillment according to an agreement or contract between two parties, e.g. between an IT-provider and a customer}
- U H04L 41/5041      • • {Service implementation}
- H04L 41/5054      • • • [~~N~~:{Automatic provisioning of the service triggered by the service manager, e.g. concrete service implementation by automatic configuration of network components( for initializing configuration, i.e. provisioning of network or devices [H04L 41/0806](#)-)}]

**H04L 43/00** {Arrangements for monitoring or testing packet switching networks( networking arrangements or communications protocols for supporting networked applications for tracking the activity of the application user [H04L 67/22](#) ; monitoring of computing systems [G06F 11/30](#) ; monitoring of computer activity [G06F 11/34](#) )}{~~WARNING~~Groups [H04L 43/00](#) - [H04L 43/50](#) do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows:- [H04L 43/00](#) - [H04L 43/50](#) : [H04L 12/26](#) }

WARNING

Groups [H04L 43/00](#) - [H04L 43/50](#) do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows:- [H04L 43/00](#) - [H04L 43/50](#) : [H04L 12/26](#)

**H04L 45/00** {Routing or path finding of packets in data switching networks( specially adapted for wireless routing [H04W 40/00](#) )}{~~WARNING~~Groups [H04L 45/00](#) - [H04L 45/74](#) do not correspond to former or current IPC groups. Concordance CPC : IPC for this groups is as follows:- [H04L 45/00](#) - [H04L 45/74](#) : [H04L 12/56](#) }

WARNING

Groups [H04L 45/00](#) - [H04L 45/74](#) do not correspond to former or current IPC groups. Concordance CPC : IPC for this groups is as follows:- [H04L 45/00](#) - [H04L 45/74](#) : [H04L 12/56](#)

- U [H04L 45/12](#)      • {Shortest path evaluation}
- [H04L 45/121](#)      • • ~~[N:-]~~{Minimizing delay}

**H04L 47/00** {Traffic regulation in packet switching networks( arrangements for detecting or correcting errors in the information received [H04L 1/00](#) )}

NOTE

This group covers:1. Flow control or congestion control  
2. Queue scheduling 3. Admission control or resource allocation

WARNING

Groups [H04L 47/00](#) - ~~47/82J~~[H04L 47/829](#) do not correspond to former or current IPC groups.  
Concordance CPC : IPC for this groups is as follows:  
- [H04L 47/00](#) - [H04L 47/829](#) : [H04L 12/56](#)

U **H04L 51/00** {Arrangements for user-to-user messaging in packet-switching networks, e.g. e-mail or instant messages}

WARNING

Groups [H04L 51/00](#) - [H04L 51/38](#) do not correspond to former or current IPC groups.  
Concordance CPC : IPC for these groups is as follows:  
- [H04L 51/00](#) - [H04L 51/38](#) : [H04L 12/58](#)

- U [H04L 51/04](#)      • {Real-time or near real-time messaging, e.g. instant messaging [IM]( network arrangements or protocols for real-time communications [H04L 65/00](#) )}
- [H04L 51/043](#)      • • ~~[N:-]~~{use or manipulation of presence information in messaging}{(-presence management [H04L 67/24](#)-)}
- [H04L 51/20](#)      • ~~[N:-]~~{Messaging using geographical location information( protocols for adapting network applications to user terminal location [H04L 67/18](#)-; services specially adapted for wireless communication networks making use of the location of users or terminals [H04W 4/02](#)-)}

H04L 51/36

- ~~[N:]~~ {Unified messaging, e.g. interactions between instant messaging, e-mail or other types of messages such as converged IP messaging [CPM]}

H04L 61/00

**{Network arrangements or network protocols for addressing or naming}**NOTE

This group does not cover:

Aspects relating to switching or routing which are classified in [H04L 12/56](#). Aspects relating to configuration management of data networks or network elements in general which are classified in [H04L 12/2424](#). Aspects of addressing in telephony which are classified in [H04M 7/00](#). Aspects of addressing within devices, e.g. process or memory, which are classified in [G06F 13/42](#) or [G06F 12/00](#).

WARNING

Groups [H04L 61/00](#) - [H04L 61/6095](#) do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows:

- [H04L 61/00](#) - ~~61/60L~~ [H04L 61/6095](#)  
: ~~H04L 61/60L~~ [H04L 61/6095](#) - ~~61/60L~~ [H04L 61/6095](#) :  
[H04L 29/12](#)

U H04L 67/00

**{Network-specific arrangements or communication protocols supporting networked applications( message switching systems [H04L 51/00](#) ; network management protocols [H04L 41/00](#) ; routing or path finding of packets in data switching networks [H04L 45/00](#) ; protocols for real-time multimedia communication [H04L 65/00](#) ; information retrieval [G06F 17/30](#) ; services or facilities specially adapted for wireless communication networks [H04W 4/00](#) ; network structures or processes for video distribution between server and client or between remote clients [H04N 21/00](#) ; exchange systems providing special services or facilities to subscribers involving telephonic communications [H04M 3/42](#) ; distributed information systems [G06F 9/00](#) , [G06F 17/00](#) ; lower layer network functionalities which support application layer provisions [H04L 12/00](#) )}**

NOTE

This group covers: (1) Networking arrangements or communication protocols to support networked applications which occur at the abstract network layers 5 to 7 of the OSI layer model. The higher layers constitute the interface between the network and the computer applications that use the network to communicate.

(2) Network-specific aspects of client-server applications as well as of networking arrangements supporting networked/ distributed applications, e.g. data transport, scheduling. This group also covers specific networked application layer protocols, e.g. FTP, WAP, HTTP. This group does not cover:

(1) Distributed applications which are network-agnostic, i.e. distributed information systems for which the network functions are transparent. These field are covered, e.g. by [G06F 9/00](#) , [G06F 17/00](#) . Data switching network provisions in general and the lower layer network functionalities which support application layer provisions are covered by [H04L 12/00](#) ]

WARNING

Groups [H04L 67/00](#) - [H04L 67/42](#) do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - [H04L 67/00](#) - [H04L 67/36](#) : [H04L 29/08](#) - [H04L 67/38](#) - [H04L 67/42](#) : [H04L 29/06](#) ]

U H04L 67/10

- {in which an application is distributed across nodes in the network( multiprogramming arrangements [G06F 9/46](#) )}

H04L 67/1002

- ~~[N:]~~ {for accessing one among a plurality of replicated servers, e.g. load balancing (-arrangements or protocols for peer-to-peer networking [H04L 67/104](#); protocols for client-server architectures [H04L 67/42](#); allocation of processing resources to service requests in a distributed system [G06F 9/5027](#); rebalancing the processing load in a distributed system [G06F 9/5083](#); wireless network traffic load balancing [H04W 28/08](#); network load balancing, traffic engineering [H04L 47/125](#); video servers using load balancing strategies [H04N 21/23103](#); error detection or correction of the data by redundancy in hardware [G06F 11/16](#))};

**Project: N/A (H04M)**

U H04M 1/00

**Substation equipment, e.g. for use by subscribers; Analogous equipment at exchanges (prepayment telephone coin boxes [H04M 17/00](#); current supply arrangements [H04M 19/00](#); {telephone sets particularly adapted for data transmission [H04M 11/066](#); network interface devices [H04Q 1/028](#)})**

U H04M 1/253

- Telephone sets using digital voice transmission (simultaneous speech and data transmission [H04M 11/06](#); {ISDN terminal access circuits [H04Q 11/0471](#)})

H04M 1/2535

- { adapted for voice communication over an Internet Protocol [\[IP\]](#) ~~network (IP) network~~ (Voice over Internet Protocol (VoIP) network equipment and services [H04M 7/006](#); internet protocols [H04L 29/06095](#))}

U H04M 7/00

**Interconnection arrangements between switching centres (transmission arrangements in general [H04B](#); { interconnection arrangements between PSTN/ISDN switching centres [H04Q 3/00](#)})**

H04M 7/006

- { Networks other than PSTN/ISDN providing telephone service, e.g. Voice over Internet Protocol ([VoIP](#)) , *including next generation networks with a packet-switched transport layer (VoIP)*, ~~including next generation networks with a packet-switched transport layer~~ ([H04L 65/00](#) takes precedence; aspects not specific to the type of network [H04M 3/00](#); special services in those networks [H04M 3/42](#))}

**Project: N/A (H04N)**

H04N

**PICTORIAL COMMUNICATION, e.g. TELEVISION (measuring, testing [G01](#); systems for autographic writing, e.g. writing telegraphy, which involve following an outline{ [G08C 21/00](#) }; information storage based on relative movement between record carrier and transducer [G11B](#); coding, decoding or code conversion, in general [H03M](#); broadcast distribution or the recording of use made thereof [H04H](#))**

NOTE

1. This subclass covers :

{generation, recording or} transmission of pictures or their transient or permanent reproduction either locally or remotely {and the corresponding electronic image capture and reproduction process employing image representative electric signals,} by methods or arrangements {involving at least one of} the following steps:

- step (a): the {electronic acquisition or} scanning of a picture {or scene} , i.e. resolving the whole picture-containing area into individual picture-elements and the derivation of picture-representative electric signals related thereto, simultaneously or in sequence {, e.g. by reading an electronic solid-state image sensor [SSIS] pickup device (e.g. CCD or CMOS image sensor) as electronic image sensor converting optical image information into said electrical signals;]
- step (b): the reproduction of the whole picture-containing area {or scene} by the reproduction of individual picture-elements into which the picture is resolved by means of picture representative electric signals derived therefrom, simultaneously or in sequence by



converting an electric image signal into light e.g. with an electronic spatial light modulator;

concerning cameras or projectors:

- video cameras or TV cameras, e.g. in studios, CCTV cameras, surveillance cameras, camcorders; constructional or mechanical details related to such cameras even when not peculiar to the presence of an electronic image sensor [EIS] e.g. housings; arrangements or methods for image capture using an EIS or image projection using an electronic spatial light modulator [ESLM], i.e.
  - (i) sensor read-out;
  - (ii) processing of electrical image signals from the EIS or provided to the ESLM for the generation of respective camera or projector control signals,
    - for controlling the EIS or its read-out for e.g. exposure, scene selection for auto focussing, or electronic image enhancement or processing of the image signals captured by the EIS, e.g. white balance, electronic motion blur correction, noise suppression [H04N 5/00](#) ,
    - for controlling the ESLM, e.g. control of the light source based on electronic image signal, light conditioning specially adapted for the ESLM, or
    - for controlling other camera functions, e.g. exposure, shaking by influencing optical parts of the camera (generation of control signals for focussing for optical elements [G02B 7/28](#) ; using such signals to control focus of particular apparatus, see the subclasses for the apparatus, e.g. [G03B](#), [G03F](#), [H04N](#));
- electronic image data storage (data storage in general [G11B](#), [G11C](#));
- in-camera image processing e.g. correction of lens distortion, defect pixel correction, noise suppression, removal of motion blur, improving of the dynamic range of the image, in-projector image processing, electronic image data manipulation, e.g. during display or projection (image processing per se [G06T](#));
- electronic viewfinders e.g. control of image pickup devices based on information indicated by the electronic viewfinder displaying an image signal generated by the EIS ;
- electrical or mechanical aspects of camera modules using electronic image sensors, as well as related constructional details as in webcams or mobile phones (see [H04M 1/0264](#) for mounting structure in mobile phones);
- details of projectors peculiar to the use of an ESLM, e.g. dichroic or polarizing arrangements specially adapted for the ESLM (dichroic or polarizing arrangements in general [G02B](#), [G03B](#));
- remote control of cameras or projectors peculiar to the EIS or the ESLM, e.g. affecting their operation, or based on a generated image signal;
- adaptations peculiar to the use of a EIS or ESLM and/or the display, the transmission, recording or other use of electrical image data and related circuitry, e.g. mounting of EIS or ESLM, integrated cleaning system for the EIS, dust mapping, cooling of the EIS, controlling the operation of the EIS by external input signals;
- systems or apparatus wherein the inventive contribution lies in the interaction between features covered in Notes 1 above, concerning cameras and projectors, when interacting with those covered in Note 1 of [G03B](#), e.g. switch-over between electronic motion-blur correction of electronic viewfinder during focussing and optical motion-blur correction of the lens during exposure, electronic motion blur correction of the electronic image sensor based on output signals

of additional sensor, or interaction between mechanical shutter and electronic control of the charge accumulation period of the EIS;]  
(in group [H04N 1/00](#) ) systems for the transmission or the reproduction of arbitrarily composed pictures or patterns in which the local light variations composing a picture are not subject to variation with time, e.g. documents (both written and printed), maps, charts, photographs (other than cinematograph films);  
circuits specially designed for dealing with pictorial communication signals, e.g. television signals, as distinct from merely signals of a particular frequency range.

2. This subclass does not cover :

circuits or other parts of systems which form the subject of other subclasses, which are covered by the corresponding subclasses, e.g. [H03C](#), [H03F](#), [H03J](#), [H04B](#), [H04H](#);  
systems in which legible alphanumeric or like character forms are analysed according to step (a) of Note (1) to derive an electric signal from which the character is recognised by comparison with stored information, which are covered by subclass [G06K](#);  
systems for the direct photographic copying of an original picture in which an electric signal representative of the picture is derived according to the said step (a) of and employed to modify the operation of the system, e.g. to control exposure, which are covered by class [G03](#);  
systems for the reproduction according to step (b) of Note (1) of pictures comprising alphanumeric or like character forms but involving the production of the equivalent of a signal which would be derived according to the abovementioned step (a), e.g. by cams, punched card or tape, coded control signal, or other means, which are covered by the subclass for the application, e.g. [G01D](#), [G06T](#), [H04L](#);  
systems for the reproduction to the above-mentioned step (b) of pictures comprising alphanumeric or like character forms and involving the generation according to the abovementioned step (a) of picture-representative electric signals from a pre-arranged assembly of such characters, or records thereof, forming an integral part of the systems, which are covered by the subclass for the application, e.g. [B41B](#), [G06K](#), subject to those applications which are covered by this subclass;  
printing, duplication or marking methods, or materials or processes therefor, which are covered by the relevant subclasses, e.g. [B41C](#), [B41M](#), [G03C](#), [G03F](#), [G03G](#);  
apparatus or methods for taking photographs using light sensitive film for image capture, apparatus/methods for printing, for projecting or viewing images using film stock, photographic film or slides by optical means, e.g. mounting of optical elements, flashes, and their related controls, e.g. exposure, focus, (opto-)mechanical motion blur (anti-shake), cooling, beam shaping;  
aspects of apparatus or methods for taking photographs using an electronic image sensor [EIS] for image capture, insofar as they correspond to those of said apparatus methods for taking photographs using light sensitive film, i.e. insofar as not peculiar to the presence of the EIS, e.g. mounting of optical elements or flashes not peculiar to the presence of the EIS, and their related controls insofar as they are not peculiar to the presence or use of the EIS, e.g. exposure, focus, (opto-)mechanical motion blur (anti-shake);  
aspects of apparatus or methods for projecting or viewing images using an electronic spatial light modulator [ESLM], insofar as they correspond to those of said apparatus/ methods for projecting or viewing images using film stock, photographic film or slides, i.e. insofar as not peculiar to the presence of the ESLM, e.g. mounting of optical elements not peculiar to the presence of the ESLM, and their related controls not peculiar to

the presence of the ESLM, e.g. cooling, beam shaping, optical keystone correction;  
(opto-)mechanical image enhancement in printers or projectors, e.g. keystone correction;  
optical viewfinders;  
remote control of cameras and projectors insofar not peculiar to the EIS or ESLM, e.g. not affecting their operation, or being based on a generated image signal;  
optical aspects of camera modules using electronic image sensors and related constructional details (optical elements or arrangements associated with solid state imager structures [H01L 27/14625](#) );  
constructional aspects of projectors, e.g. cooling, beam shaping, light integrating means not peculiar to the ESLM;]

3. In this subclass, the following expression is used with the meaning indicated: "television systems" means those systems for the {electronic generation} , transmission and reproduction of arbitrarily composed pictures in which the local light variations composing a picture may change with time, e.g. natural "live" scenes, {electronic} recordings of such scenes such as cinematograph films].

4. In this subclass, as in subclass [G03B](#), the following terms are used with the meaning indicated:

"camera": a device capturing image information represented by light patterns reflected or emitted from objects, and exposing a light sensitive film or a main electronic image sensor during a timed exposure, usually through a photographic lens, and producing an image on a light sensitive film or an electrical image information signal respectively;

"projector": a device displaying image information by projection of light patterns, usually through an optical lens, wherein the light patterns are generated by illuminating an image, e.g. film or slide, or by converting an electric image signal into an optical signal using an electronic spatial light modulator;

"electronic image sensor [EIS]": optoelectronic transducer, converting optical image information into an electrical signal susceptible of being processed, stored, transmitted or displayed;

"additional sensor": a sensor, other than the main electronic image sensor, used for controlling a camera;

"electronic spatial light modulator [ESLM]": optoelectronic transducer converting electric signals representing image information into optical image information.]

#### 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 :

- [H04N 5/31](#) covered by [G01S 7/52](#), [G01S 15/89](#)
- [H04N 5/761](#) covered by [H04N 5/782](#)
- [H04N 5/7613](#) covered by [H04N 5/782](#)
- [H04N 5/7617](#) covered by [H04N 5/782](#)
- [H04N 5/922](#) covered by [H04N 5/92](#)
- [H04N 5/924](#) covered by [H04N 5/92](#)
- [H04N 7/40](#) covered by [H04N 19/00](#)
- [H04N 7/42](#) covered by [H04B 14/06](#)
- [H04N 7/44](#) covered by [H04B 14/06](#)
- [H04N 9/815](#) covered by [H04N 9/81](#)
  
- [H04N 11/24](#) covered by [H04N 11/002](#)
  
- [H04N 15/00](#) covered by [H04N 13/00](#)

- U H04N 3/10 • by means not exclusively optical-mechanical( [H04N 3/36](#) takes precedence; electro-, magneto- or acousto-optical modulation or deflection of light beams [G02F 1/00](#) )
- H04N 3/14 • • by means of electrically scanned solid-state devices( for picture generation [H04N 5/335](#) )
- WARNING  
Constructional details [97DP12C2B](#)[97DP12C2B](#)
- U H04N 5/00 **Details of television systems( scanning details or combination thereof with generation of supply voltages [H04N 3/00](#) ; specially adapted for colour television [H04N 9/00](#) ; { servers specially adapted for the distribution of content [H04N 21/20](#) ; client devices specially adapted for the reception of or interaction with content [H04N 21/40](#) } )**
- NOTE  
Groups [H04N 5/341](#) to [H04N 5/378](#) are based on IPC2012.01
- U H04N 5/44 • Receiver circuitry( [H04N 5/14](#) takes precedence )
- H04N 5/4403 • • {~~User interfaces for controlling a television receiver or set top box(STB)~~{*User interfaces for controlling a television receiver or set top box [STB]*} through a remote control device, e.g. graphical user interfaces (GUI); Remote control devices therefor( user interfaces for controlling a tuning device of a television receiver through a remote control [H03J 9/00](#) ; constructive details of casings for the remote control device [H01H 9/0235](#) ; remote control of peripheral devices connected to a television receiver through the remote control device of the television receiver [H04B 1/205](#) ; remote control devices in general [G08C](#) )}
- U H04N 9/00 **Details of colour television systems**
- U H04N 9/12 • Picture reproducers( devices or arrangements for the electro-, magneto- or acousto-optical modulation or deflection of light beams [G02F](#) )
- H04N 9/31 • • Projection devices for colour picture display{e.g. using electronic spatial light modulators [~~ESLM~~](*ESLM*)}( projection devices using film stock, photographic film or slides, [G03B 21/00](#) and subgroups )}
- H04N 21/00 **Selective content distribution, e.g. interactive television, VOD [Video On Demand]( broadcast communication [H04H](#) ; arrangements, apparatus, circuits or systems for communication control or processing being characterised by a protocol [H04L 29/06](#) ; { broadcast or conference over packet-switching networks [H04L 12/18](#) , } real-time bi-directional transmission of motion video data [H04N 7/14](#) )**

NOTE

1. This group covers : • ~~interactive video distribution processes, systems, or elements thereof, which are characterised by point-to-multipoint system configurations, and which are mainly used for motion video data unidirectional distribution or delivery resulting from interactions between systems operators, e.g. access or service providers, or users e.g. subscribers, and system elements.~~ • such systems include dedicated communication systems, such as television distribution systems, which primarily distribute or deliver motion video data in the manner indicated, which may, in addition, provide a framework for further, diverse data communications or services in either unidirectional or bi-directional form. However, video will occupy most of the downlink bandwidth in the distribution process. • typically, system operators interface with transmitter-side elements or users' interface with receiver-side elements in order to facilitate, through interaction with such elements, the dynamic control of data processing or data flow at various points in the system. This interaction is typically occasional

or intermittent in nature. • processes, systems or elements thereof specially adapted to the generation, distribution and processing of data, which is either associated with video content, e.g. metadata, ratings, or related to the user or his environment and which has been actively or passively gathered. This data is either used to facilitate interaction or to alter or target the content. 2. In this main group, at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place 3. In this main group, the following terms and expressions are used with the meaning indicated:-

additional data – designates still pictures, textual, graphical or executable data such as software. It is used to convey supplemental information and can be generated prior to or during the distribution process itself, e.g. metadata, keys. content designates video or audio streams, which may be combined with additional data. Video data will always be present and occupy most of the downlink bandwidth in the distribution process-

server – designates an apparatus designed for adapting the content received from the content provider to the distribution network. It also manages the distribution to client devices or intermediate components over a network. Further servers may also be present for gathering or generating additional data, e.g. rights management server-

additional data server – designates a server, which sole purpose is the distribution or management of additional data. It is not in charge of the distribution of video or audio data-

client – designates an apparatus such as a TV receiver, a set-top-box, a PC-TV, a mobile appliance (e.g. mobile phone or receiver in a vehicle), for receiving video, audio and possibly additional data from one or several servers or intermediate components via a network for further processing, storing or displaying. It can also transmit this data on a home-based local network to further devices, e.g. a home server transmitting video to PCs and set-top-boxes within a home.-

local network – pertains to a restricted area, e.g. a home or a vehicle, and designates the link between a client and its peripheral devices-

network – is to be distinguished from "local network": "network" designates the link between the server and the clients, or between the server and the intermediate components, or between the intermediate components and the clients, or between remotely located clients-

distribution – encompasses broadcasting, multicasting and unicasting techniques for transmitting content from one or more sources to one or more receiving stations. The distribution follows a request by a receiving station to the source, e.g. VOD or from a customization of the content by the source, e.g. targeting advertisements to a demographic group in a unidirectional or bidirectional system. Additionally, distribution encompasses techniques where the client acts as a source and another client acts as a receiving station, e.g. a peer-to-peer system for sharing video among client devices-

end-user – designates a physical person, e.g. a TV viewer, who consumes the content using the client device. He is the final recipient of the content distributed by the server-

interaction – covers actions occurring between or among two or more objects that have an effect upon one another, wherein objects comprise users, system operators, system elements, or content. The user may interact with content locally at the client device, e.g. for requesting additional data stored within the client device. The user may interact with content remotely through a server e.g. for VOD playback control or for uploading video to a server. The client device may interact with the content e.g. selecting content based upon the user profile. The client device may interact with a server using a return channel, e.g. for authenticating client or uploading client hardware capabilities. The server may interact with a client device, e.g. to force a client to tune to an advertisement channel-



*upstream* – designates the direction of data flow towards the source, e.g. a server receiving a request via a mobile phone network  
*downstream* – designates the direction of data flow towards a client, e.g. a client receiving data originating from a server  
*elementary stream* (ES) as defined by the MPEG system layer designates the output of an audio or video encoder

1. This group covers : • interactive video distribution processes, systems, or elements thereof, which are characterised by point-to-multipoint system configurations, and which are mainly used for motion video data unidirectional distribution or delivery resulting from interactions between systems operators, e.g. access or service providers, or users e.g. subscribers, and system elements. • such systems include dedicated communication systems, such as television distribution systems, which primarily distribute or deliver motion video data in the manner indicated, which may, in addition, provide a framework for further, diverse data communications or services in either unidirectional or bi-directional form. However, video will occupy most of the downlink bandwidth in the distribution process. • typically, system operators interface with transmitter-side elements or users' interface with receiver-side elements in order to facilitate, through interaction with such elements, the dynamic control of data processing or data flow at various points in the system. This interaction is typically occasional or intermittent in nature. • processes, systems or elements thereof specially adapted to the generation, distribution and processing of data, which is either associated with video content, e.g. metadata, ratings, or related to the user or his environment and which has been actively or passively gathered. This data is either used to facilitate interaction or to alter or target the content. 2. In this main group, at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place 3. In this main group, the following terms and expressions are used with the meaning indicated:

*additional data* - designates still pictures, textual, graphical or executable data such as software. It is used to convey supplemental information and can be generated prior to or during the distribution process itself, e.g. metadata, keys.  
*content* designates video or audio streams, which may be combined with additional data. Video data will always be present and occupy most of the downlink bandwidth in the distribution process

*server* - designates an apparatus designed for adapting the content received from the content provider to the distribution network. It also manages the distribution to client devices or intermediate components over a network. Further servers may also be present for gathering or generating additional data, e.g. rights management server

*additional data server* - designates a server, which sole purpose is the distribution or management of additional data. It is not in charge of the distribution of video or audio data

*client* - designates an apparatus such as a TV receiver, a set-top-box, a PC-TV, a mobile appliance (e.g. mobile phone or receiver in a vehicle), for receiving video, audio and possibly additional data from one or several servers or intermediate components via a network for further processing, storing or displaying. It can also transmit this data on a home-based local network to further devices, e.g. a home server transmitting video to PCs and set-top-boxes within a home.

*local network* - pertains to a restricted area, e.g. a home or a vehicle, and designates the link between a client and its peripheral devices

*network* - is to be distinguished from "local network": "network" designates the link between the server and the clients, or between the server and the intermediate components, or between the intermediate components and the clients, or between remotely located clients

*distribution* - encompasses broadcasting, multicasting and unicasting techniques for transmitting content from one or more sources to one or more receiving



*stations. The distribution follows a request by a receiving station to the source, e.g. VOD or from a customization of the content by the source, e.g. targeting advertisements to a demographic group in a unidirectional or bidirectional system. Additionally, distribution encompasses techniques where the client acts as a source and another client acts as a receiving station, e.g. a peer-to-peer system for sharing video among client devices*

*end-user - designates a physical person, e.g. a TV viewer, who consumes the content using the client device. He is the final recipient of the content distributed by the server*

*interaction - covers actions occurring between or among two or more objects that have an effect upon one another, wherein objects comprise users, system operators, system elements, or content. The user may interact with content locally at the client device, e.g. for requesting additional data stored within the client device. The user may interact with content remotely through a server e.g. for VOD playback control or for uploading video to a server. The client device may interact with the content e.g. selecting content based upon the user profile. The client device may interact with a server using a return channel, e.g. for authenticating client or uploading client hardware capabilities. The server may interact with a client device, e.g. to force a client to tune to an advertisement channel*

*upstream - designates the direction of data flow towards the source, e.g. a server receiving a request via a mobile phone network*

*downstream - designates the direction of data flow towards a client, e.g. a client receiving data originating from a server elementary stream An elementary stream (ES) as defined by the MPEG system layer designates the output of an audio or video encoder*

- U H04N 21/40
  - {Client devices specifically adapted for the reception of or interaction with content, e.g. set-top-box [STB]; Operations thereof( arrangements for distribution where lower stations, e.g. receivers, interact with the broadcast [H04H 20/38](#) ; arrangements specially adapted for receiving broadcast information [H04H 40/00](#) )]
- U H04N 21/43
  - • {Processing of content or additional data, e.g. demultiplexing additional data from a digital video stream; Elementary client operations, e.g. monitoring of home network, synchronizing decoder's clock; Client middleware( demultiplexing of data packets for data networks, e.g. RTP/UDP [H04L 29/06176](#) )}
- U H04N 21/436
  - • • Interfacing a local distribution network, e.g. communicating with another STB, inside the home{; Interfacing an external card to be used in combination with the client device}{ arrangements specially adapted plural spots in a confined site in broadcast systems [H04H 20/63](#) )
- H04N 21/4363
  - • • • Adapting the video {or multiplex} stream to a specific local network, e.g. a IEEE 1394 or Bluetooth~~&reg~~ ~~network~~;~~network~~
- U H04N 2201/00**

**Indexing scheme relating to scanning, transmission or reproduction of documents or the like, and to details thereof**
- U H04N 2201/0001
  - Diagnosis, testing or measuring; Detecting, analysis or monitoring not otherwise provided for
- U H04N 2201/0003
  - • Method used
- U H04N 2201/0005
  - • • using a reference pattern designed for the purpose, e.g. a test chart
- H04N 2201/0006
  - • • • details of the reference pattern ([DM 1105](#))(~~DM 1105~~)

**Project: N/A (H04Q)**

- U H04Q 2213/00**

**Indexing scheme relating to selecting arrangements in general and for multiplex systems**

- H04Q 2213/099      • Loop multiplexer (*not ISDN BRI/PRI* (~~not ISDN BRI/PRI; not 381~~), e.g. loop splitter; *not 381*), e.g. loop splitter
- H04Q 2213/13242      • Broadcast, diffusion, multicast, point-to-multipoint (*1 : N*) (~~1 : N~~)

**Project: N/A (H04W)**

- U H04W 52/00**      **Power Management, e.g. TPC [Transmission Power Control], power saving or power classes** (( gain control in transmitters or power amplifiers [H03G 3/3042](#) ))
- U H04W 52/04      • TPC [Transmission power control]
- U H04W 52/18      • • TPC being performed according to specific parameters
- U H04W 52/26      • • • using transmission rate or quality of service QoS [Quality of Service]
- H04W 52/262      • • • • {taking into account adaptive modulation and coding [\[AMC\]](#) *scheme* (~~AMC~~) *scheme* ( AMC per se [H04L 1/0001](#) ) }

**Project: N/A (H05B)**

- U H05B 6/00**      **Heating by electric, magnetic, or electromagnetic fields (for therapeutic purposes [A61N 5/00](#); joining of preformed parts by heating of plastics or substances in a plastic state [B29C 65/02](#))**
- U H05B 6/02      • Induction heating
- U H05B 6/10      • • Induction heating apparatus, other than furnaces, for specific applications
- U H05B 6/101      • • • { for local heating of metal pieces }
- U H05B 6/103      • • • • { multiple metal pieces successively being moved close to the inductor }
- H05B 6/104      • • • • ~~N~~ { metal pieces being elongated like wires or bands }
- U H05B 33/00**      **Electroluminescent light sources (discharge lamps [H01J 61/00](#) to [H01J 65/00](#); semi-conductor devices with at least one particular jump barrier or surface barrier adapted for light emission [H01L 27/15](#), [H01L 33/00](#); organic light emitting devices [H01L 27/32](#), [H01L 51/50](#); lasers [H01S 3/00](#), [H01S 5/00](#); compositions per se, see the relevant subclasses; { luminescent scales or hands [G01D 13/20](#), [G01D 13/28](#); luminescent dials [G09F 13/20](#); conductive layers on isolated substrate [H01B 1/00](#); solid state image amplifiers [H01L 31/14](#); electronic gates with electroluminescent elements [H03K 17/78](#); pulse generation with electroluminescent elements [H03K 3/00](#) ) }**
- U H05B 33/02      • Details
- U H05B 33/08      • • Circuit arrangements not adapted to a particular application
- U H05B 33/0803      • • • { for light emitting diodes (LEDs) comprising only inorganic semi-conductor materials }
- U H05B 33/0806      • • • • { Structural details of the circuit }
- WARNING
- This group and its subgroups are not complete pending reorganisation; see also groups [H05B 33/0833](#), [H05B 33/0875](#) and respective subgroups
- U H05B 33/0821      • • • • • { in the load stage }
- U H05B 33/0824      • • • • • • { with an active control inside the LED load configuration }
- H05B 33/083      • • • • • • ~~N~~ { organized essentially in string configuration with shunting switches }

**Project: N/A (H05G)**

- U H05G 1/00**      **X-ray apparatus involving X-ray tubes; circuits therefor**
- U H05G 1/08      • Electrical details

H05G 1/64

- • Circuit arrangements for X-ray apparatus incorporating image intensifiers

WARNING

Material provisionally in ~~97DP27~~~~97DP27~~; image intensifiers [H01J 31/00](#)

**Project: N/A (H05K)****U H05K 7/00****Constructional details common to different types of electric apparatus( casings, cabinets, drawers [H05K 5/00](#) )**

U H05K 7/20

- Modifications to facilitate cooling, ventilating, or heating{( of printed circuits [H05K 1/0201](#) ; of resistors [H01C](#); of capacitors [H01G](#); of individual semiconductor components [H01L 23/34](#) , [H01L 31/024](#) ; of LEDs [H01L 33/64](#) ; of personal computers [G06F 1/20](#) )}

U H05K 7/2039

- • {characterised by the heat transfer by conduction from the heat generating element to a dissipating body( arrangements for increasing/decreasing heat-transfer, e.g. fins details, [F28F 13/00](#) )}

H05K 7/205

- • • {Thermal paths through the printed circuit board [[PCB](#)](~~PCB~~)( details of PCBs related to heat transfer [H05K 1/0201](#) )}