

## Compilation of Changes to the CPC Scheme Between 2014.10 and 2014.11

### Presentation Details

Entries for new symbols and headings:	<i>Black text in italics</i>
Entries for existing symbols and headings	
—text insertions:	<i>Green text in italics with yellow background</i>
—text deletions:	<del>Red strikethrough text with grey background</del>
Entries for deleted symbols and headings:	<del>Black strikethrough text</del>

- 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 (A01N)

U	A01N 1/00	<b>Preservation of bodies of humans or animals, or parts thereof (preservation of foodstuffs <a href="#">A23</a>; medicinal preparations containing materials from mammals or birds, e.g. blood, sperm, <a href="#">A61K 35/12</a>; cell or tissue culture <a href="#">C12N 5/00</a>)</b>
	A01N 1/02	<ul style="list-style-type: none"> <li>• Preservation of living parts</li> </ul> <p><u>WARNING</u> Subgroups <del>A01N1/02C</del><a href="#">A01N 1/0205</a>-<a href="#">A01N 1/0294</a> are not complete, due to a reorganisation in progress</p>
	A01N 43/00	<p><b>Biocides, pest repellants or attractants, or plant growth regulators containing heterocyclic compounds (containing cyclic anhydrides, cyclic imides <a href="#">A01N 37/00</a>; containing compounds of the formula <math>X_m=C_n-N\langle C \rangle</math> containing only one heterocyclic ring, wherein <math>m \geq 1</math> and <math>n \geq 0</math> and <math>-N\langle C \rangle</math> is unsubstituted or alkylsubstituted pyrrolidine, piperidine, morpholine, thiomorpholine, piperazine or a polymethyleneimine with four or more <math>CH_2CH_2</math> groups, <a href="#">A01N 33/00</a> to <a href="#">A01N 41/12</a>)</b></p> <p><u>NOTE</u> In group <a href="#">A01N 43/00</a>, the following terms or expressions are used with the meanings indicated:</p> <p>"Hetero ring" is a ring having at least one halogen nitrogen, oxygen or sulfur atom as a ring member.</p> <p>"Bridged" means the presence of at least one fusion other than ortho, peri and spiro.</p> <p>Two rings are "condensed" if they share at least one ring member, i.e. "spiro" and "bridged" are considered as condensed.</p> <p>"Condensed ring system" is a ring system in which all rings are condensed among themselves.</p> <p>In group <a href="#">A01N 43/00</a>, the number of rings in a condensed system equals the number of scissions necessary to convert the ring system into one acyclic chain. The relevant rings in a condensed system are chosen according to the following criteria consecutively:</p> <ul style="list-style-type: none"> <li>lowest number of ring members,</li> <li>highest number of hetero atoms as ring members.</li> </ul> <p>Ring members shared by two or more rings are regarded as being a member of each of these rings.</p>

**A01N 65/00**

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

WARNING

Groups [A01N 65/03](#) to [A01N 65/48](#), with the exception of **[A01N65/38T](#)** [A01N 65/385](#), are incomplete. See also group [A01N 65/00](#).

**Project: N/A (A21B)****U A21B 3/00****Parts or accessories of ovens**

U A21B 3/13  
A21B 3/136

- Baking-tins; Baking forms
- • { with reinforcements}

WARNING

Groups **[A21B3/13R](#)**[A21B 3/136](#)-[A21B 3/139](#) are not complete, pending reorganisation, see also [A21B 3/13](#)

**Project: N/A (A23C)****U A23C 19/00**

**Cheese; Cheese preparations; Making thereof( cheese substitutes [A23C 20/00](#) ; casein [A23J 1/20](#) )**

U A23C 19/02

- Making cheese curd

U A23C 19/05

- • Treating milk before coagulation; Separating whey from curd([A23C 19/097](#),{  
[A23C 19/045](#) }take precedence)

A23C 19/054

- • • {using additives other than acidifying agents, NaCl, ~~CaCl<sub>2</sub>~~[CaCl<sub>2</sub>](#), dairy products, proteins, fats, enzymes or micro-organisms}

U A23C 19/06

- Treating cheese curd after whey separation; Products obtained thereby(  
[A23C 19/097](#) takes precedence )

U A23C 19/068

- • Particular types of cheese

U A23C 19/076

- • • Soft unripened cheese, e.g. cottage or cream cheese

A23C 19/0765

- • • • {Addition to the curd of additives other than acidifying agents, dairy products, proteins except gelatine, fats, enzymes, micro-organisms, NaCl, ~~CaCl<sub>2</sub>~~[CaCl<sub>2</sub>](#) or KCl; Foamed fresh cheese products}

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

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

NOTES

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

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

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

The classification symbols of groups:

[A23G 1/305](#) , [A23G 1/56](#) , [A23G 3/343](#) , **[A23G3/34E](#)**[A23G 3/346](#) , [A23G 4/062](#) , [A23G 9/322](#) and [A23G 9/52](#)

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

D . Containing organic compounds

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

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

- U A47B 47/00 Cabinets, racks or shelf units, characterised by features related to dismantability or building-up from elements (A47B 43/00, A47B 45/00 take precedence; features for adjusting shelves or partitions A47B 57/00)**
- U A47B 47/02 · made of metal only
- U A47B 47/021 · · {Racks or shelf units (A47B 47/03 takes precedence)}
- A47B 47/025 · · · { with panels connected together without three dimensional frames (A47B47/00H A47B 47/0025, A47B 47/005, A47B47/00N A47B 47/0066, A47B 47/042 take precedence)}

**Project: N/A (A47C)**

- U A47C 3/00 Chairs characterised by structural features; Chairs or stools with rotatable or vertically-adjustable seats (A47C 1/00, A47C 4/00 take precedence)**
- A47C 3/16 · of legless type, e.g. with seat directly resting on the floor (A47C 3/14 takes precedence; detachably mounted on stadium benches A47C 1/16; children's chairs mounted on back-rest of chair A47D 1/10, { legless beach chairs A47C 1/146; inflatable chairs A47C 4/54}; inflatable chairs A47C 4/54}); Hassocks; Pouffes

**Project: N/A (A47F)**

- U A47F 7/00 Show stands, hangers, or shelves, adapted for particular articles or materials {(A47F 5/006 takes precedence)}**
- A47F 7/08 · for shoes {(shoe hangers A47G25/00B A47G 25/005; shoe hangers with anti-theft means E05B 69/003)}

**Project: N/A (A47J)**

- U A47J 31/00 **Apparatus for making beverages (household machines or implements for straining foodstuffs [A47J 19/00](#); preparation of non-alcoholic beverages, e.g. by adding ingredients to fruit or vegetable juices, [A23L 2/00](#); coffee or tea pots [A47G 19/14](#); tea infusers [A47G 19/16](#); dispensing beverages on draught [B67D 1/00](#); brewing of beer [C12C](#); preparation of wine or other alcoholic beverages [C12G](#))**
- U A47J 31/06 . Filters or strainers for coffee or tea makers; { Holders therefor}
- U A47J 31/0657 . { for brewing coffee under pressure, e.g. for espresso machines}
- A47J 31/0689 . . { Reusable cartridges suitable to be opened for being filled with brewing material and to be closed to envelope the brewing material therein (disposable cartridges to be filled by the user with brewing material [A47J 31/08](#); disposable cartridges already filled with brewing material [B65D85/804B](#)[B65D 85/8043](#))}

**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 2017/0408 . . {Rivets(~~other bone rivets 17:68; rivets for connecting prosthetic parts [K61F2/00T7R](#)~~ *other bone rivets 17:68; rivets for connecting prosthetic parts [A61F2002/3044](#), [A61F2220/041](#) )}*
- U A61B 17/06 . . Needles;{Sutures; Needle-suture combinations}; Holders or packages for needles or suture materials( puncturing needles [A61B 17/34](#) ; nerve needles [A61C 5/02](#) ; hypodermic needles [A61M 5/32](#) ; { sewing needles [D05B 85/00](#) } )
- U A61B 17/06004 . . {Means for attaching suture to needle( tipping [A61B 17/06195](#) ; connecting wire to other metallic objects [B21F 15/00](#) )}
- A61B 2017/06038 . . . {soldered or brazed or welded(~~for connecting prosthetic parts [K61F2/00T9](#)~~ *for connecting prosthetic parts [A61F 2002/30451](#), [A61F 2220/0058](#) )}*
- U A61B 17/22 . Implements for squeezing-off ulcers or the like on{the inside of}inner organs of the body; Implements for scraping-out cavities of body organs, e.g. bones; Calculus removers; Calculus smashing apparatus;{Apparatus for removing obstructions in blood vessels, not otherwise provided for( dilators [A61M 29/00](#) )}
- U A61B 17/22004 . {using mechanical vibrations, e.g. ultrasonic shock waves( [A61B 17/225](#) takes precedence )}
- U A61B 17/22012 . . {in direct contact with, or very close to, the obstruction or concrement( for removing obstructions in blood vessels by laser [A61B 18/245](#) )}
- A61B 2017/22014 . . . {the ultrasound transducer being outside patient's body; with an ultrasound transmission member; with a wave guide; with a vibrated guide wire( not applied in [A61B17/22B2](#)[A61B 17/22012](#))}

**Project: MP0108 (A61B)**

- 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 )}
- U A61B 17/7002
- • • • • {Longitudinal elements, e.g.rods}
- U A61B 17/7011
- • • • • • {Longitudinal element being non-straight, e.g. curved, angled or branched( adjustable length longitudinal elements [A61B 17/7014](#) ; [A61B 17/7019](#) takes precedence, e.g. coil springs )}
- M A61B 17/7013
- • • • • • • {the shape of the element being adjustable before use( adjustable length plates [A61B 17/7014](#) )}~~{WARNING: incomplete, see [A61B 17/7002](#) and [A61B 17/7011](#) }~~
- M A61B 17/7056
- • • • • {Hooks with specially-designed bone-contacting part}
- WARNING
- ~~Not complete, see also [A61B17/70B](#), [A61B 17/7032](#) and [A61B 17/7035](#)~~
- U A61B 17/7094
- • • • • {Solid vertebral fillers; devices for inserting such fillers}
- M A61B 17/7095
- • • • • • {the filler comprising unlinked macroscopic particles}
- WARNING
- ~~This group is not complete pending a reorganisation; see also group [A61B17/70U](#)~~
- U A61B 17/80
- • • • Cortical plates{i.e. bone plates; Instruments for holding or positioning cortical plates, or for compressing bone attached to them( [A61B 17/70](#) takes precedence )}
- M A61B 17/8028
- • • • • {Cushions, i.e. elements forming interface between bone plate and bone}
- WARNING
- ~~Not complete, see also [A61B 17/68](#) and [A61B 17/80](#)~~
- U A61B 17/8061
- • • • • {specially adapted for particular bones( [A61B 17/70](#) and [A61B 17/74](#) take precedence )}

M A61B 17/8066 . . . . . {for pelvic reconstruction}

**WARNING**

Not complete, see also A61B 17/8061

M A61B 17/8095 . . . . . {Osteotomy wedges} ~~[WARNING: incomplete see A61B 17/809]~~

**WARNING**

incomplete see **A61B17/80S**

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

U A61B 17/84 . . . . . Fasteners therefor{or fasteners being internal fixation devices}

A61B 17/86 . . . . . {Threaded wires}, pins or screws; {Nuts therefor( [A61B 17/72](#) ,  
[A61B 17/74](#) , [A61F 2/4455](#) take precedence )}

**WARNING**

Subgroups [A61B 17/861](#) , **A61B17/86H**[A61B 17/865](#) , **A61B17/86N**  
[A61B 17/8665](#) , [A61B 17/869](#) and [A61B 17/8695](#) are not complete  
pending a reorganisation. See also [A61B 17/68](#) , [A61B 17/86](#) ,  
[A61B 17/8605](#) and [A61B 19/026](#)

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

A61F 13/00

**Bandages or dressings (suspensory bandages [A61F 5/40](#); { contact-avoiding wound protectors **A61F15/00P**[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](#)})**

**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 8/30 . . . . . containing organic compounds

A61K 8/40 . . . . . containing nitrogen( quinones containing nitrogen **A61K8/35C**[A61K 8/355](#))

## A61K 9/00

**Medicinal preparations characterised by special physical form( nuclear magnetic resonance contrast preparations or magnetic resonance imaging contrast preparataions [A61K 49/18](#) ; preparations containing radioactive substances [A61K 51/12](#) )**

NOTE

Among the one-dot groups of [A61K 9/00](#) , classification is not made in the last appropriate place.

[A61K 9/00](#) is subdivided according to the following concepts:

- the drug release technique ( [A61K 9/0002](#) and subgroups),
- the site of application ( [A61K 9/0012](#) and subgroups), and
- the physical form ( [A61K 9/0087](#) to ~~A61K9/70E~~[A61K 9/7023](#) ).

Where relevant, documents are classified in more than one of these subdivisions.

## 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 39/12  
A61K 39/295

- Viral antigens
- · Polyvalent viral antigens( vaccinia virus or variola virus [A61K 39/285](#) ); Mixtures of viral and bacterial antigens

WARNING

This group is no longer used for the classification of new documents as from April 1, 2012. The backlog of this group is being continuously reclassified to ~~A61K39/00M~~[A61K 39/0015](#), to subgroups of [A61K 39/0016](#) and of [A61K 39/12](#)

## U A61K 47/00

**Medicinal preparations characterised by the non-active ingredients used, e.g. carriers, inert additives**

## U A61K 47/48

- the non-active ingredient being chemically bound to the active ingredient, e.g. polymer drug conjugates

- 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 **A61K47/48K** **A61K 47/48169**, a peptide, protein or polyamino acid **A61K47/48R** **A61K 47/48238**, an antibody or immunoglobulin **A61K47/48T** **A61K 47/48369**
- U A61K 47/48023
- • {the modifying agent being an organic compound( [A61K 47/48161](#) takes precedence )}
- A61K 47/48076
- • • {the modifying agent being a chelate, i.e. single central atom/ion sequestered by a polydentate ligand, e.g. Gd-DOTA or Zinc-amino acid chelate, or a chelate-forming compound, i.e. chelating group, e.g. DOTA or ethylenediamine, that being covalently/complexed to the pharmacologically- or therapeutically-active agent}
- NOTE  
Paramagnetic chelates used in MRI and not linked to by further compound, e.g. polymer, peptide, protein, antibody, small molecules like sugars, are only classified in [A61K 49/101](#) and subgroups. Paramagnetic chelates used in MRI and conjugated to another compound, e.g. a polymer, a peptide, a protein, an antibody, a small molecule like a sugar, are classified in [A61K 49/06](#) and subgroups, and not **A61K47/48K** **A61K 47/48169**, if said other compound being not used as therapeutic agent, according to the nature of the modifying agent, and completed by [A61K 49/085](#) . Radiolabelled chelates are classified in [A61K 51/0474](#) and its subgroups, and in [A61K 51/0497](#) , [A61K 51/065](#) , [A61K 51/088](#) or [A61K 51/1093](#) if the chelate being linked to a further molecule, e.g. an organic compound, polymer, peptide, protein or polyamino acid, antibody
- A61K 47/48153
- • • {the modifying agent being a chemiluminescent acceptor}
- NOTE  
A chemical reaction induces the cleavage of the pharmacologically or therapeutically active agent from the carrier while at the same time producing light. If the conjugate is cleaved through activation by light in vivo in order to release the drug, then the classification symbol being **A61K41/00R** **A61K 41/0042**. Dyes/luminescent agents for optical diagnostic imaging **A61K49/00P** **A61K 49/001**; for photodynamic therapy [A61K 41/0057](#)
- 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}
- 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 ~~A61K9/127B~~[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 ~~A61K47/48R~~[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](#) ]

**U A61K 49/00**

**Preparations for testing in vivo**

- U A61K 49/04
  - X-ray contrast preparations

NOTE

In the preparation of new organic compounds and their use in X-ray contrast preparations, classification is only made in the relevant subclasses [C07C](#) to [C07J](#) according to the type of compound

- U A61K 49/0433
  - • {containing an organic halogenated X-ray contrast-enhancing agent}
- U A61K 49/0447
  - • • {Physical forms of mixtures of two different X-ray contrast-enhancing agents, containing at least one X-ray contrast-enhancing agent which is a halogenated organic compound}
- U A61K 49/0461
  - • • • {Dispersions, colloids, emulsions or suspensions}
- A61K 49/0471
  - • • • • {Perflubron, i.e. perfluorocetyl bromide, ~~C8F17Br~~[C<sub>8</sub>F<sub>17</sub>Br](#) emulsions}
- U A61K 49/06
  - Nuclear magnetic resonance (NMR) contrast preparations; Magnetic resonance imaging (MRI) contrast preparations

NOTE

characterised only by the (inorganic) MRI-active nucleus, e.g. <sup>129</sup>Xe

- U A61K 49/08
  - • characterised by the carrier

NOTE

characterised by the carrier carrying the MRI-active nucleus, e.g. inorganic carrier]

- U A61K 49/10
  - • • Organic compounds

NOTE

the carrier being an organic compound, e.g. <sup>13</sup>C-labelled molecule or perfluorinated alkane, used as MRI in vivo probe, or a small organic molecule, e.g. a sugar, linked to a Gd-chelate

A61K 49/14

- • • Peptides, e.g. proteins

NOTE

the carrier being a peptide (polyamino acid, [A61K49/14T](#)[A61K 49/146](#) ) or protein (not an antibody, see [A61K 49/16](#) ). If the MRI-active nucleus being linked to the peptide or protein or polyamino acid via a complexing or chelating group, the subgroup [A61K 49/085](#) should also be given. If the peptide or protein or polyamino acid being a dendrimer, a dendron, or hyperbranched, then the [A61K 49/124](#) being also given

**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.  $^{111}\text{In}^{3+}$ ) is complexed or chelated by e.g. a [N<sub>2</sub>S<sub>2</sub>N<sub>2</sub>S<sub>2</sub>](#), [N<sub>3</sub>SN<sub>3</sub>S](#), [NS<sub>3</sub>NS<sub>3</sub>](#), [N<sub>4</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

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

A61L 26/00

**Chemical aspects of, or use of materials for, {wound dressings or} bandages {in liquid, gel or powder form}**NOTES

When classifying in group [A61L 26/00](#) , classification is also made in [A61L 33/00](#) if the materials used are antithrombogenic.

In groups [A61L 26/00](#) to [A61L26/00R](#)[A61L 26/0095](#), the use of specific polymers is indicated using the relevant combination set symbol, adding, after the symbol in [A61L](#) , the correspondent symbol of the polymer in subclass [C08L](#) , e.g. liquid bandages on alginates: [A61L 26/0023](#) , [C08L 5/04](#)

**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](#) }, 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](#) }, 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 [A61L29/04B](#)[A61L 29/041](#), [C08L 27/06](#)

**A61L 31/00**

**Materials for other surgical articles, {e.g. stents, stent-grafts, shunts, surgical drapes, guide wires, materials for adhesion prevention, occluding devices, surgical gloves, tissue fixation devices( shape or structure of stent-grafts [A61F 2/07](#) , of stents [A61F 2/82](#) , of surgical gloves [A61B 19/04](#) , of surgical drapes [A61B 19/08](#) , of occluding devices [A61B 17/12022](#) )}**

**NOTES**

In groups [A61L 31/02](#) to { [A61L 31/129](#) } , in the absence of an indication to the contrary, classification is made in the last appropriate place

When classifying in groups [A61L 31/02](#) to { [A61L 31/129](#) } , classification is also made in groups [A61L 31/14](#) to [A61L 31/18](#) if the use of materials characterised by their function or physical properties is of interest

When classifying in group [A61L 31/00](#) , classification is also made in [A61L 33/00](#) if the materials used are antithrombogenic

In group [A61L 31/00](#) , the use of specific polymers is indicated using the relevant classification symbols of subclass [C08L](#) in the second position of the combination set, e.g. surgical clamp based on polyvinylchloride [A61L31/04H](#)[A61L 31/048](#), [C08L 27/06](#)

**A61L 33/00**

**Antithrombogenic treatment of surgical articles, e.g. sutures, catheters, prostheses, or of articles for the manipulation or conditioning of blood; Materials for such treatment**

**NOTES**

In groups [A61L 33/0076](#) to [A61L 33/0094](#) and [A61L 33/02](#) to [A61L33/12A](#) [A61L 33/122](#), in the absence of an indication to the contrary, classification is made in the last appropriate place

When classifying in groups [A61L 33/02](#) to [A61L33/12A](#)[A61L 33/122](#), classification is also made in group [A61L 33/0005](#) if of interest

In group [A61L 33/00](#) , the use of specific polymers is indicated using the relevant classification symbols of subclass [C08L](#) in the second position of the combination set, e.g. antithrombogenic treatment with the help of polyvinylchloride [A61L33/06B](#)[A61L 33/064](#), [C08L 27/06](#)

**Project: N/A (A61M)**

- U A61M 5/00 Devices for bringing media into the body in a subcutaneous, intra-vascular or intramuscular way; Accessories therefor, e.g. filling or cleaning devices, arm-rests( { vaccination appliances for veterinary use [A61D 1/025](#) } ; tube connectors, tube couplings, valves or branch units specially adapted for medical use [A61M 39/00](#) ; containers specially adapted for medical or pharmaceutical purposes [A61J 1/00](#) ; { combinations of vial and syringe for mixing or transferring their contents [A61J 1/20](#) ; holders for containers for collecting, storing or administering blood or medical fluids [A61J 1/16](#) } )
- U A61M 5/178  
A61M 5/1782  
A61M 5/19
- Syringes
  - {Devices aiding filling of syringes in situ( combination of a vial and a syringe for transferring or mixing their contents [A61J1/20F](#)[A61J 1/2096](#), filling of medical containers in general [B65B3/00B](#)[B65B 3/003](#))}
  - • having more than one chamber,{e.g. including a manifold coupling two parallelly aligned syringes through separate channels to a common discharge assembly( surgical glue applicators [A61B17/00L](#)[A61B 17/00491](#))}
- U A61M 25/00 Catheters; Hollow probes( dilators [A61M 29/00](#) ; { peritoneal catheters [A61M 1/285](#) ; tracheal tubes [A61M 16/04](#) ; for drainage [A61M 27/00](#) ; for uterus, vagina or rectum [A61M 31/00](#) } ; for measuring or testing [A61B](#) ; { materials for catheters [A61L 29/00](#) } )
- U A61M 25/0021  
U A61M 25/0023  
U A61M 25/0026  
A61M 2025/0034
- {characterised by the form of the tubing( [A61M 25/0054](#) takes precedence )}
  - • {by the form of the lumen, e.g. cross-section, variable diameter}
  - • • {Multi-lumen catheters with stationary elements( catheter assemblies comprising a catheter in combination with a guide tube, sheath or sleeve [A61M 2025/0681](#) ; catheters comprising telescoping coaxial elements [A61M 2025/0175](#) )}
  - • • {characterized by elements which are assembled, connected or fused, e.g. splittable tubes, outer sheaths creating lumina or separate cores(~~making of catheters [A1M25/00G](#)~~[making of catheters \[A61M 25/0009\]\(#\)](#))}
- U A61M 2202/00 Special media to be introduced, removed or treated( applying radioactive material [A61M36/00](#) )
- NOTE
- The classification symbols [A61M 2202/0007](#) to [A61M 2202/0092](#) are not listed first when assigned to patent documents. They are used only when associated to other subgroups of [A61M 2202/00](#) in combination sets
- Example: [A61M 2202/0417](#) , [A61M 2202/0057](#)
- U A61M 2202/02  
U A61M 2202/0266  
A61M 2202/0283
- Gases( smoke evacuating [A61B2218/0008](#) )
  - • Nitrogen (N)
  - • • Nitrous oxide (~~N<sub>2</sub>O~~[N<sub>2</sub>O](#))

**Project: N/A (A62D)****A62D****CHEMICAL MEANS FOR EXTINGUISHING FIRES OR FOR COMBATING OR PROTECTING AGAINST HARMFUL CHEMICAL AGENTS; CHEMICAL MATERIALS FOR USE IN BREATHING APPARATUS**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:  
[A62D 1/02](#) covered by [A62D 1/0007](#), [A62D 1/0071](#)

A62D 1/04 covered by [A62D 1/0071](#)  
A62D 1/08 covered by [A62D 1/0007](#) to ~~A62D1/00G~~[A62D 1/0028](#), [A62D 1/0057](#),  
~~A62D1/00G~~[A62D 1/0092](#)

**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>A63B 22/00</del>	<del>A</del>	<del>A63B22/00A</del>
<a href="#">A63B 22/10</a>	covered by	<a href="#">A63B 22/0605</a>	in
combination with	<del>A63B 22/00</del>	<del>A</del>	<del>A63B22/00A</del>
<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 71/08</del>	<del>A</del>
<del>A63B71/08A</del>			

**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](#) )**

A63B 23/02

· for the abdomen, the spinal column or the torso(muscles related to  
shoulders(e.g. chest muscles)-~~A63B 23/12 t.p.~~); ~~exercising belts without  
indicating means A63B21/26 }~~

**A63B 49/00**

**Tennis, badminton, or like rackets**

WARNING

Group ~~A63B49/00M~~[A63B 49/007](#), [A63B 49/06](#) are not complete pending a  
reclassification. See also this group, its subgroups and other groups of [A63B](#)

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 [C02E](#), 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:

[B01D 19/0454](#) covered by  
[B01D 9/00](#)  
[B01D 15/04](#) covered by [B01J 39/00](#)  
to [B01J 49/02](#)

<a href="#">B01D 17/022</a>	covered by	
<a href="#">B01D 17/0202</a>		
<a href="#">B01D 17/025</a>	covered by	<a href="#">B01D 17/02</a>
<del>F</del>	<del><a href="#">B01D17/02F</a></del>	
<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	<a href="#">B01D 17/02</a>
<del>D</del>	<del><a href="#">B01D17/02D</a></del>	
<a href="#">B01D 17/038</a>	covered by	
<a href="#">B01D 17/0217</a>		
<a href="#">B01D 17/05</a>	covered by	<a href="#">B01D 17/04</a>
<del>J</del>	<del><a href="#">B01D17/04J</a></del>	
<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	<a href="#">B01D 36/00</a>
<del>D</del>	<del><a href="#">B01D36/00D</a></del>	
<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.

**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: [B01D21/00C](#)[B01D 21/0006](#), see also [B01D 21/00](#) [B01D21/00J](#)[B01D 21/0018](#), see also [B01D 21/00](#) [B01D 21/0054](#) , see also [B01D 21/00](#) [B01D 21/0057](#) , see also [B01D 21/00](#) [B01D21/00M](#) [B01D 21/003](#), see also [B01D 21/00](#) [B01D 21/0036](#) , see also [B01D 21/00](#) [B01D21/00S](#)[B01D 21/0087](#), see also [B01D 21/00](#) [B01D 21/2416](#) , see also [B01D 21/2405](#) [B01D 21/2422](#) , see also [B01D 21/2405](#) [B01D21/24C](#) [B01D 21/2427](#), see also [B01D 21/24](#) [B01D21/24D](#)[B01D 21/2433](#), see also [B01D 21/24](#) [B01D21/26C](#)[B01D 21/262](#), see also [B01D 21/26](#) [B01D21/26V](#) [B01D 21/265](#), see also [B01D 21/26](#) [B01D21/26Y](#)[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](#) ]

**U B01D 53/00**

**Separation of gases or vapours; Recovering vapours of volatile solvents from gases; Chemical or biological purification of waste gases, e.g. engine exhaust gases, smoke, fumes, flue gases, aerosols,**( recovery of volatile solvents by condensation [B01D 5/00](#) ; sublimation [B01D 7/00](#) ; cold traps, cold baffles [B01D 8/00](#) ; working-up undefined gaseous mixtures obtained by cracking hydrocarbon oils [C10G 70/00](#) ; cleaning coal gas [C10K](#) ; working-up of natural gas, or synthetic natural gas, [C10L 3/10](#) ; separation of difficult-to-condense gases or air by liquefaction [F25J](#) ; for investigating materials [G01N 30/00](#) )

NOTE

Group [B01D 53/34](#) takes precedence over groups [B01D 53/02](#) to [B01D 53/32](#)

U B01D 53/34

• Chemical or biological purification of waste gases

U B01D 53/92

• • of engine exhaust gases(exhaust{ or silencing }apparatus{ for internal combustion engines, machines or engines in general }, having means for purifying,{ rendering innocuous } or otherwise treating exhaust gases [F01N 3/00](#) )

U B01D 53/94

• • • by catalytic processes

B01D 53/9445

• • • {Simultaneously removing carbon monoxide, hydrocarbons or nitrogen oxides making use of three-way catalysts (TWC) or four-way-catalysts (FWC)}

WARNING

Groups [B01D 53/945](#) and [B01D 53/9454](#) are not complete pending a reorganisation. See also [B01D53/94L](#)[B01D 53/9445](#)

B01D 53/9481

• • • {Catalyst preceded by an adsorption device without catalytic function for temporary storage of contaminants, e.g. during cold start}

WARNING

Groups [B01D 53/9486](#) and [B01D 53/949](#) are not complete pending a reorganisation. See also [B01D53/94P](#)[B01D 53/9481](#)

**U B01D 61/00 Processes of separation using semi-permeable membranes, e.g. dialysis, osmosis, ultrafiltration; Apparatus, accessories or auxiliary operations specially adapted therefor**

NOTE

In groups [B01D 61/00](#) to [B01D 61/58](#) it is desirable to add the indexing codes relating to process operations and control chosen from groups [B01D 2311/00](#) to **B01D2311/26Z**,  
to details relating to membrane modules and apparatus indexing codes chosen from [B01D 2313/00](#) to [B01D 2313/90](#) ,  
to details relating to the membrane module operation indexing codes chosen from [B01D 2315/00](#) to [B01D 2315/16](#) ,  
to details relating to the module arrangement within a plant or an apparatus indexing codes chosen from [B01D 2317/00](#) to [B01D 2317/08](#) and  
to details relating to the membrane assembly within one housing indexing codes chosen from [B01D 2319/00](#) to [B01D 2319/06](#)

- B01D 61/58
- Multistep processes{( comprising reverse osmosis or hyperfiltration steps **B01D61/02B**[B01D 61/022](#); comprising ultrafiltration or microfiltration steps **B01D61/14B**[B01D 61/142](#))}

NOTE

In group [B01D 61/58](#) specific process steps within the multistep process are indexed by codes chosen from [B01D 61/02](#) to [B01D 61/56](#)

**B01D 69/00 Semi-permeable membranes for separation processes or apparatus characterised by their form, structure or properties; Manufacturing processes specially adapted therefor**

NOTES

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

- "properties" covers those of a mechanical, physical or chemical nature

Manufacturing processes, if considered of interest, are also classified in group [B01D 67/00](#)

WARNING

The following sub-groups of [B01D 69/00](#) are incomplete. Documents presently classified in the hierarchically higher groups are in the process of reclassification

[B01D 69/043](#)

**B01D69/04D**[B01D 69/046](#)

[B01D 69/081](#)

**B01D69/08D**[B01D 69/082](#)

**B01D69/08E**[B01D 69/084](#)

[B01D 69/085](#)

**B01D69/08H**[B01D 69/087](#)

[B01D 69/088](#)

[B01D 69/105](#)

[B01D 69/141](#)

[B01D 69/144](#)

[B01D 69/145](#)

[B01D 69/147](#)

[B01D 69/148](#)

**U B01D 2239/00 Aspects relating to filtering material for liquid or gaseous fluids**

- U B01D 2239/06
- Filter cloth, e.g. knitted, woven non-woven; self-supported material

- U B01D 2239/069
- • Special geometry of layers

- B01D 2239/0695
- • • Wound layers( apparatus incorporating such gas filtering material [B01D 2275/105](#) )
- WARNING  
This group is not complete, see also [B01D 39/1684](#) and [B01D39/20W](#)

**Project: N/A (B01F)**

- U B01F 3/00** **Mixing, e.g. dispersing, emulsifying, according to the phases to be mixed**  
**{{(C08J 3/02 takes precedence)}}**
- U B01F 3/04
- { gases or vapours with liquids (mixing non-alcoholic beverages with gases [A23L 2/54](#); { for medical purposes [A61M 16/14](#)}) [M1110]
- B01F 3/04099
- • { Introducing a gas or vapour into a liquid medium, e.g. producing aerated liquids (methods for the preparation of non-alcoholic beverages, e.g. of carbonated water [A23L 2/00](#); bottling liquids, e.g. combined with aerating or carbonating [B67C 3/00](#); dispensing beverages on draught combined with carbonating [B67D 1/0057](#), [B67D1/02B](#)[B67D 1/025](#), [B67D1/04A](#) [B67D 1/0406](#), [B67D 1/0418](#); dispensing beverages by gas pressure from storage containers, e.g. syphons [B67D 1/04](#); biological treatment of water, waste water or sewage [C02F 3/00](#); impregnating wine with carbon dioxide [C12G 1/06](#); gas introduction means for enzymology or microbiology apparatus [C12M 1/04](#))}]
- B01F 3/08
- liquids with liquids; Emulsifying {([B01F 13/0222](#) takes precedence; dispensing beverages on draught combined with mixing [B67D1/00F](#)[B67D 1/0015](#), [B67D 1/0043](#))}]
- U B01F 15/00** **Accessories for mixers; { Auxiliary operations or auxiliary devices; Parts or details of general application}**
- U B01F 15/04
- Forming a predetermined ratio of the substances to be mixed (controlling ratio of two or more flows of fluid or fluent material [G05D 11/02](#)){([G05D 11/00](#) takes precedence)}
- U B01F 15/0441
- • {by feeding the components in predetermined amounts}
- B01F 15/0454
- • • {using measuring chambers, e.g. volumetric pumps, for feeding the substances (for amalgam mixers [A61C 5/06](#); specially adapted for mixing plastic material [B29B7/60B2B2](#)[B29B 7/242](#), [B29B 7/603](#), [B29B 7/7626](#); for amalgam mixers [A61C 5/06](#); feeding plastic material in general [B29C 31/06](#), [B29C 31/10](#); for presses [B30B 15/302](#), [B30B 15/304](#); pumps for delivering fixed or variable measured quantities of two or more fluids at the same time [F04B 13/02](#); measuring and separating a predetermined volume of fluid or fluent solid material [G01F 11/00](#))}]

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

- U B01J 23/00** **Catalysts comprising metals or metal oxides or hydroxides, not provided for in group [B01J 21/00](#) ( [B01J 21/16](#) takes precedence )**
- B01J 23/002
- {Mixed oxides other than spinels, e.g. perovskite}
- NOTE  
In group [B01J23/00B](#)[B01J 23/002](#), elements constituting the exemplified mixed oxide are further indexed with [B01J 2523/00](#) as base symbol using the relevant classification symbols of [B01J 2523/00](#) to [B01J2523/84F](#), in numerical order without [L01J523](#) and preceded by the sign "+", e.g. Moa Vb Tec Ox is classified as [B01J 2523/00](#) [+/55+/64+/68](#)

## 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

- Group [B01J 31/003](#) takes precedence over groups [B01J 31/02](#) to [B01J 31/24](#) (catalytic antibodies [C12N 9/0002](#) )
- 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<sub>3</sub>)<sub>n</sub> 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 31/22D](#) [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(oids) [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<sub>4</sub>[Fe(CN)<sub>6</sub>] [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](#)).
- 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 31/16                   · containing coordination complexes
- U B01J 31/22               · · Organic complexes
- U B01J 31/2204           · · · {the ligands containing oxygen or sulfur as complexing atoms}
- U B01J 31/2208           · · · · {Oxygen, e.g. acetylacetonates}
- U B01J 31/2226           · · · · · {Anionic ligands, i.e. the overall ligand carries at least one formal negative charge}
- U B01J 31/223            · · · · · · {At least two oxygen atoms present in one at least bidentate or bridging ligand}
- B01J 31/2239            · · · · · · · {Bridging ligands, e.g. OAc in  $\text{Cr}_2\text{Cr}_2(\text{OAc})_4$ ,  $\text{Pt}_4\text{Pt}_4(\text{OAc})_8$  or dicarboxylate ligands}
- B01J 31/24               · · 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  $\text{PH}_3\text{PH}_3$  [B01J 31/1845](#) )}
- U B01J 31/40             · Regeneration or reactivation
- U B01J 31/4015           · · {of catalysts containing metals}
- B01J 31/4069            · · · {involving extraction with coordinating ionic liquids or supercritical fluids, e.g.  $\text{Cr}_2\text{CO}_2$ }
- U B01J 35/00             Catalysts, in general, characterised by their form or physical properties**
- U B01J 35/002           · {Catalysts characterised by their physical properties}
- B01J 35/004            · · {Photocatalysts}
- WARNING  
Groups [B01J 35/0046](#) to [B01J 35/0093](#) are not complete, see also ~~[B01J35/00D](#)~~[B01J 35/002](#)
- U B01J 2231/00         Catalytic reactions performed with catalysts classified in [B01J 31/00](#)**
- NOTE  
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 2231/30         · Addition reactions at carbon centres, i.e. to either C-C or C-X multiple bonds

- U B01J 2231/34
  - • Other additions, e.g. Monsanto-type carbonylations, 1,2-C=X1,2-C=X or -C-X triple bonds, 1,4-C=C-C=X or -C-X triple bonds with X= O, S, NH/N or analogues
- U B01J 2231/341
  - • • 1,2-additions, e.g. aldol or Knoevenagel condensations
- U B01J 2231/342
  - • • • Aldol type reactions, i.e. nucleophilic addition of C-H acidic compounds, their R<sup>3</sup>Si- or metal complex analogues, to aldehydes or ketones
- B01J 2231/345
  - • • • • with organometallic complexes, e.g. by adding  $ZnR_2ZnR_2$

## Project: N/A (B03D)

## B03D

**FLOTATION; DIFFERENTIAL SEDIMENTATION( sedimentation in general [B01D 21/00](#) ; in combination with other separation of solids [B03B](#); sink-float separation [B03B 5/28](#) ; detergents, soaps [C11D](#) )**

WARNING

The following groups are not complete: [B03D1/02C](#)[B03D 1/023](#), see also [B03D 1/02](#) [B03D1/02F](#)[B03D 1/025](#), see also [B03D 1/02](#) [B03D1/02L](#)[B03D 1/026](#), see also [B03D 1/02](#) [B03D1/02R](#)[B03D 1/028](#), see also [B03D 1/02](#) [B03D1/08D](#)[B03D 1/082](#), see also [B03D 1/08](#) [B03D1/08F](#)[B03D 1/085](#), see also [B03D 1/08](#) [B03D1/08T](#)[B03D 1/087](#), see also [B03D 1/08](#) [B03D1/14A](#)[B03D 1/1406](#), see also [B03D 1/14](#) [B03D1/14F](#)[B03D 1/1443](#), see also [B03D 1/14](#) [B03D 1/145](#), see also [B03D 1/14](#) [B03D 1/1456](#), see also [B03D 1/14](#) [B03D 1/1462](#), see also [B03D 1/14](#) [B03D 1/1468](#), see also [B03D 1/14](#) [B03D 1/1475](#), see also [B03D 1/14](#) [B03D1/14M](#)[B03D 1/1487](#), see also [B03D 1/14](#) [B03D1/14S](#)[B03D 1/1493](#), see also [B03D 1/14](#) [B03D1/24N](#)[B03D 1/242](#), see also [B03D 1/24](#) [B03D1/24R](#)[B03D 1/247](#), see also [B03D 1/24](#) ]

## Project: N/A (B05B)

## B05B

**SPRAYING APPARATUS; ATOMISING APPARATUS; NOZZLES( sprayers or atomisers specially adapted for therapeutic purposes [A61M 11/00](#) } ; spray-mixers with nozzles [B01F 5/20](#) ; processes for applying liquids or other fluent materials to surfaces by spraying [B05D](#); { nozzles specially adapted for injection moulding of plastics or substances in a plastic state [B29C 45/1603](#) , [B29C 45/20](#) ; nozzles specially adapted for windscreen washers [B60S 1/52](#) } ; means for pumping fluids [F04](#); valves, e.g. water-taps, [F16K](#))**

NOTES

This subclass covers particularly apparatus for the release or projection of drops or droplets into the atmosphere or into a chamber to form a mist or the like. For this purpose, the materials to be projected may be suspended in a stream of gas or vapour.

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

In this subclass, "means for controlling volume of flow" is used in the most general meaning and includes also means allowing only starting and stopping the flow

In this subclass, the meaning of the expression "apparatus carried on or by a person" includes all apparatus comprising at least one container for the material to be sprayed carried on or by a person during use

In this subclass, the word "container" is to be understood as the innermost enclosure containing the material to be sprayed

WARNING

Groups [B05B 11/30](#) to [B05B 11/3098](#) do not correspond to former or current IPC groups. The concordance CPC : IPC for these groups is as follows: - [B05B 11/30](#) - ~~[B05B11/30V](#)~~[B05B 11/3098](#) : [B05B 11/00](#)

- U B05B 3/00** **Spraying or sprinkling apparatus with moving outlet elements or moving deflecting elements;**{Spraying or sprinkling heads with rotating elements located upstream the outlet}
- U B05B 3/02      • with rotating elements
- U B05B 3/04      • • driven by the liquid or other fluent material discharged, e.g. the liquid actuating a motor before passing to the outlet({ [B05B 3/023](#) takes precedence )}
- U B05B 3/0409   • • • {with moving, e.g. rotating, outlet elements( [B05B 3/0486](#) , [B05B 3/06](#) take precedence )}
- U B05B 3/0472   • • • • {the spray jet actuating a movable deflector which is successively moved out of the jet by jet action and brought back into the jet by spring action}
- B05B 3/0477   • • • • • {the spray outlet having a reversible rotative movement, e.g. for covering angular sector smaller than 360°}
- WARNING  
This subgroup is not complete, due to a pending reclassification. See provisionally also group ~~[B05B3/16B](#)~~[B05B 3/165](#)
- B05B 3/0481   • • • • • {Impact motive means}
- WARNING  
This subgroup is not complete, due to a pending reclassification. See provisionally also group ~~[B05B3/16B](#)~~[B05B 3/165](#)
- U B05B 13/00** **Machines or plants for applying liquids or other fluent materials to surfaces of objects or other work by spraying, not covered by groups [B05B 1/00](#) to [B05B 11/00](#) ({ [B05B 5/08](#) takes precedence } ; means for supplying or discharging liquid or other fluent material for this purpose, see the relevant preceding groups; processes for applying liquids or other fluent materials to surfaces in general [B05D](#) )**
- U B05B 13/02   • Means for supporting work; Arrangement or mounting of spray heads; Adaptation or arrangement of means for feeding work( [B05B 13/06](#) takes precedence )
- U B05B 13/04   • • the spray heads being moved during{spraying}operation
- B05B 13/0463   • • • {Installation or apparatus for applying liquid or other fluent material to moving work of indefinite length}
- WARNING  
Not complete pending reclassification; see also groups ~~[B05B13/04B](#)~~[B05B 13/0421](#) , ~~[B05B13/04C](#)~~[B05B 13/0426](#) ]

**Project: N/A (B05C)**

- U B05C 11/00** **Component parts, details or accessories not specifically provided for in groups [B05C 1/00](#) to [B05C 9/00](#) (means for manipulating or holding work [B05C 13/00](#); enclosures for apparatus, booths [B05C 15/00](#); spray booths [B05B 15/12](#))**
- B05C 11/10   • Storage, supply or control of liquid or other fluent material; Recovery of excess liquid or other fluent material ({~~[B05C1/08E](#)~~[B05C 1/0813](#) , ~~[B05C5/02C](#)~~[B05C 5/0225](#) , [B05C 17/002](#) and [B05C 19/06](#) take precedence)}

- U B05C 11/1002
- { Means for controlling supply, i.e. flow or pressure, of liquid or other fluent material to the applying apparatus, e.g. valves}
- WARNING  
not complete, see [B05C 11/10](#)
- B05C 11/1034
- • { specially designed for conducting intermittent application of small quantities, e.g. drops, of coating material (~~B05C5/02G~~[B05C 5/0225](#), [B05C 11/1026](#) take precedence)}

**Project: MP0108 (B22F)**

- U B22F 1/00
- Special treatment of metallic powder, e.g. to facilitate working, to improve properties {(treatment of powder by mechanical means, e.g. by grinding, milling, rolling [B22F 9/04](#)); Metallic powders per se, e.g. mixtures of particles of different composition ([C04](#), [C08](#) take precedence; { amorphous powder [B22F 9/002](#))}**
- U B22F 1/0003
- {Metallic powders per se; Mixtures of metallic powders; Metallic powders mixed with a lubricating or binding agent (making ferrous alloys using a mixture of prealloyed powders [C22C 33/0207](#))}
- U B22F 1/0007
- {Metallic powder characterised by its shape or structure, e.g. fibre structure }
- M B22F 1/0011
- • {Metallic powder characterised by size or surface area only}
- WARNING  
Groups B22F 1/0011 and B22F 1/0014 are not complete, see also B22F 1/0007
- U B22F 1/0018
- • • {Nanometer sized particles}
- M B22F 1/0022
- • • • { Dispersions or suspensions thereof}{~~WARNING: Not complete, see also B22F 1/0018~~}
- M B22F 1/0025
- • • • { Nanofibres or nanotubes}{~~WARNING: Not complete, see also B22F 1/0018~~}
- M B22F 1/0055
- • • { Flake form powders}{~~WARNING: Not complete, see also B22F 1/0007~~}
- U B22F 3/00
- Manufacture of workpieces or articles from metallic powder characterised by the manner of compacting or sintering; Apparatus specially adapted therefor; {Presses and furnaces}**
- U B22F 3/12
- Both compacting and sintering (by forging [B22F 3/17](#))
- M B22F 3/16
- • in successive or repeated steps {~~WARNING: Subgroups of B22F 3/16 are not complete, see also B22F 3/16~~}
- U B22F 3/22
- for producing castings from a slip
- M B22F 3/225
- • { by injection molding}{~~WARNING: Not complete, see also B22F 3/22~~}
- M B22F 3/227
- • { by organic binder assisted extrusion}{~~WARNING: Not complete, see also B22F 3/22~~}
- U B22F 5/00
- Manufacture of workpieces or articles from metallic powder characterised by the special shape of the product**
- U B22F 5/10
- of articles with cavities or holes, not otherwise provided for in the preceding subgroups
- M B22F 5/106
- • { Tube or ring forms}{~~WARNING: Not complete, see also B22F 5/10~~}

**Project: N/A (B22F)**

- U B22F 2201/00
- Treatment under specific atmosphere**
- U B22F 2201/01
- Reducing atmosphere
- B22F 2201/016
- • ~~NH3~~[NH<sub>3</sub>](#)

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

- 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 11/001 · { Arrangements compensating weight or flexion on parts of the machine (adjustment of the fluid layer in fluid bearings or cushions depending upon the position of a weight [B23Q 1/385](#))}
- B23Q 11/0017 · · { compensating the weight of vertically moving elements, e.g. by balancing liftable machine parts ([B23B 47/26](#) takes precedence)}
- WARNING  
Subgroups [B23Q 11/0017](#) and [B23Q 11/0021](#) are not complete, due to a reorganisation in progress; see also [B23Q11/00C](#)[B23Q 11/001](#)

**Project: N/A (B25C)**

B25C 5/00

**Manually operated portable stapling tools; Hand-held power-operated stapling tools** {{clip clamping hand tools [B25B27/14C](#)[B25B 27/146](#)}} details or components, e.g. casings, bodies, of portable power-driven tools not particularly related to the operation performed [B25F 5/00](#); stapling machines [B27F 7/17](#); Staple feeding devices therefor (staples [F16B 15/00](#))

NOTE

In this group the following term is used with the meaning indicated: -"stapling tools" covers tools for driving U-shaped loops, e.g. of metallic material, into a surface to fix an object thereto, or through layers of relatively thin material to hold them together, e.g. by clinching

**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:

B25J 9/18 covered by B25J 9/16  
B25J 9/22 " " B25J 9/16 — P B25J9/16P  
G05B 19/42

**Project: N/A (B27D)**

B27D 3/00

Veneer presses; Press plates; Plywood presses (presses in general B30B)  
{presses for wood fibre sheets B29J5/04B B27N 3/08, B27N 3/24, B27N 3/26}

**Project: N/A (B27F)**

B27F

DOVETAILED WORK; TENONS; SLOTTING MACHINES; NAILING OR STAPLING MACHINES (hand- held nailing or stapling tools B25C; manufacture of cases, boxes, or trunks from wood B27M 3/34; jointing elements F16B){manufacture of long strips or planks by bonding together pieces of wood, e.g. by glueing, B27M3/00D B27M 3/0013}

NOTE

This subclass covers also the assembling of the elements to be jointed, e.g. using adhesives, but the application of adhesives or glue to surfaces of wood to be jointed per se is dealt with in group B27G 11/00 {manufacture of specific semi-finished or finished articles B27M 3/00}

**Project: N/A (B28C)**

U B28C 5/00

Apparatus or methods for producing mixtures of cement with other substances, e.g. slurries, mortars, porous or fibrous compositions( controlling the mixing apparatus and supplying the ingredients B28C 7/00 { separating cement from waste concrete B03B 9/063 })

U B28C 5/08

• using driven mechanical means affecting the mixing( B28C 5/40 , B28C 5/42 , B28C 5/48 take precedence; in combination with the action of a fluid B28C 5/38 )

U B28C 5/18

• • Mixing in containers to which motion is imparted to effect the mixing

U B28C 5/1825

• • • {Mixers of the tilted-drum type, e.g. mixers pivotable about an axis perpendicular to the axis of rotation for emptying}

B28C 5/1881

• • • • {the mixing drums being tilted otherwise than about a fixed axis perpendicular to the axis of rotation of the drum, e.g. by means of a set of links( B28C5/08B1 , B28C5/08B3 , B28C5/08B5 , B28C5/08B10 take precedence )}

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

- 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
- U B29C 65/02
- by heating, with or without pressure
- WARNING  
Group [B29C 65/02](#) and subgroups are not complete, pending a reorganisation; see also [B29C 65/48](#) and its subgroups
- U B29C 65/10
- • using hot gases{(e.g. combustion gases)or flames coming in contact with at least one of the parts to be joined}
- B29C 65/103
- • • {direct heating both surfaces to be joined}
- WARNING  
Not complete, pending a reorganisation; see also [B29C 65/10](#) and [B29C65/10B](#)[B29C 65/106](#)
- U B29C 65/18
- • using heated tools
- B29C 65/20
- • • with direct contact, e.g. using "mirror"
- WARNING  
Subgroups of [B29C 65/20](#) are not complete, pending a reorganisation; see also this group and [B29C65/20D](#)[B29C 65/2046](#)
- U B29C 65/24
- • • characterised by the means for heating the tool{( by impulse heating [B29C 65/38](#) )}
- NOTES  
Classification is made in groups [B29C 65/24](#) to [B29C 65/32](#) only if the details or adaptations of the heating means are of interest.  
When classifying in this group, heated tools are additionally classified in groups [B29C 65/18](#) , [B29C 65/20](#) or [B29C 65/22](#)
- U B29C 65/30
- • • • {Electrical means( [B29C 65/38](#) takes precedence )}
- B29C 65/305
- • • • • {involving the use of cartridge heaters}
- WARNING  
Not complete, pending a reorganisation; see also [B29C 65/18](#) to [B29C65/20H](#)[B29C 65/2092](#)

**Project: N/A (B30B)**

- U B30B 1/00 **Presses, using a press ram, characterised by the features of the drive therefor, pressure being transmitted directly, or through simple thrust or tension members only, to the press ram or platen**
- B30B 1/24
- by rack-and-pinion means{( [B30B9/30G3](#)[B30B 9/3067](#) takes precedence )}

- U B30B 15/00** **Details of, or accessories for, presses; Auxiliary measures in connection with pressing( safety devices [F16P](#) )**
- U B30B 15/16 · Control arrangements for fluid-driven presses( pumps per se [F04](#) ; hydraulic accumulators per se [F15B](#) ; valves per se [F16K](#) ; control devices in general [G05](#) )
- B30B 15/168 · · {for pneumatically driven presses( ~~B30B15/16D~~[B30B 15/165](#) takes precedence )}

**Project: N/A (B31D)**

**B31D 5/00** **Multiple-step processes for making three-dimensional articles; { Making three-dimensional articles} (assembly { or manufacture} of garlands [A41G 1/04](#); making receptacles or containers [B31B](#); making tubes [B31B](#), [B31C](#))**

NOTE

Making drinking straws is classified in group [B31D 5/00](#), e.g. ~~B31D5/00J~~  
[B31D 5/0095](#)

**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](#) ,

[B32B23/04C](#)[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 3/24](#) 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 17/00 Layered products essentially comprising sheet glass, or glass, slag, or like fibres**

- U B32B 17/06
  - comprising glass as the main or only constituent of a layer, next to another layer of a specific material (coating on glass [C03C 17/00](#) ; safety glazings [B32B 17/08](#) or [B32B 17/10](#) ; fire protective glazing with intumescent layers [B32B 17/069](#) )}
- B32B 17/10
  - of synthetic resin (producing optical elements from plastics [B29D 11/00](#) ; constructional form of optical elements [G02B](#) )}

NOTE

1. In this group a layer of organic glass is not considered as a glass layer but as a synthetic resin layer;
2. [N: Inventions related to safety glazings (laminated glazings) are classified in all appropriate subgroups [B32B 17/10009](#) to ~~[B32B17/10L](#)~~[B32B 17/10807](#), whereby transparent polymeric layers other than the interlayer ( ~~[B32B17/10G](#)~~ [B32B 17/1055](#) ) are classified using indexing codes

- U B32B 17/10165
  - • • {particular functional features of the laminated glazing}
- U B32B 17/10174
  - • • • {Coatings of a metallic or dielectric material on a constituent layer of glass or polymer}
- U B32B 17/10201
  - • • • • {Dielectric coatings}
- B32B 17/10211
  - • • • • • {Doped dielectric layer, electrically conductive, e.g. [SnO<sub>2</sub>SnO<sub>2</sub>:F](#)}

**Project: N/A (B41J)**

**B41J 23/00 Power drives for actions or mechanisms ([B41J 9/00](#), { ~~[B41J19/30B](#)~~ [B41J 19/305](#)}, take precedence)**

- U B41J 25/00
  - B41J 25/001
    - { Mechanisms for bodily moving print heads or carriages parallel to the paper surface (character- or line-spacing mechanisms [B41J 19/00](#))}

WARNING

This group and subgroups [B41J 25/003](#) and [B41J 25/005](#) are not complete pending a reorganisation. See also ~~[B41J2/51B](#)~~[B41J 2/512](#)

**Project: N/A (B41M)**

**U B41M 1/00 Inking and printing with a printer's forme**

- U B41M 1/26
  - Printing on other surfaces than ordinary paper ( [B41M 1/40](#) takes precedence )
- B41M 1/30
  - • on organic plastics, horn or similar materials ( recording sheets having a coating to improve ink, dye or pigment receptivity [B41M 5/50](#) ; marking or recording on plastic by irradiation with electromagnetic beams, e.g. laser, ~~[B41M5/26L](#)~~[B41M 5/267](#) )}

**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](#) } )**

- B41M 5/20
  - using electric current ( [B41M 5/24](#) takes precedence; { processes in which the current is transformed into a heat pattern for obtaining transfer to a receptor sheet [B41M 5/382](#) ; electro-coagulable or electro-adhesive printing or recording ~~[B41C1/10C](#)~~[B41C 1/105](#) )}

**Project: N/A (B41N)****U B41N 3/00**

B41N 3/08

**Preparing for use and conserving printing surfaces**

- Damping; Neutralising or similar differentiation treatments for lithographic printing formes; { Gumming or finishing solutions, fountain solutions, correction or deletion fluids, or on-press development (treatment of materials containing silver salts [G03F7/06L](#)[G03F 7/063](#); developers per se for processing photosensitive materials [G03F 7/32](#))}

**Project: N/A (B41P)****U B41P 2213/00****Arrangements for actuating or driving printing presses; Auxiliary devices or processes**

U B41P 2213/40

- Auxiliary devices or processes associated with the drives

B41P 2213/42

- · Vibration-dampers for machine parts (for cylinders [B41F13/08A](#)[B41F 13/085](#))

**U B41P 2227/00****Mounting or handling printing plates; Forming printing surfaces in situ**

B41P 2227/20

- Means enabling or facilitating exchange of tubular printing or impression members, e.g. printing sleeves, blankets (attaching cylindrical printing formes [B41F27/10B](#)[B41F 27/105](#))

**Project: N/A (B44C)****U B44C 1/00****Processes, not specifically provided for elsewhere, for producing decorative surface effects (decorating textiles [D06Q](#))**

U B44C 1/16

- for applying transfer pictures or the like

U B44C 1/165

- · For decalcomanias; sheet material therefor (apparatus or machines for applying decalcomanias [B65C](#))

U B44C 1/175

- · · Transfer using solvent

B44C 1/1754

- · · · { Decalcomanias provided with a layer being specially adapted to facilitate their release from a temporary carrier ([B44C1/175F](#)[B44C 1/1756](#), [B44C 1/1758](#) take precedence)}

**Project: N/A (B44D)****U B44D 3/00****Accessories or implements for use in connection with painting or artistic drawing, not otherwise provided for (hand tools for applying liquids, e.g. paints, to surfaces [B05C 17/00](#), implements for finishing work on buildings, other than painting, [E04F 21/00](#)); Methods or devices for colour determination, selection, or synthesis, e.g. use of colour tables (colorimetry [G01J 3/00](#))**

U B44D 3/16

- Implements or apparatus for removing dry paint from surfaces, e.g. by scraping, by burning (chemical paint-removers [C09D 9/00](#))

U B44D 3/166

- · {by heating, e.g. by burning}

B44D 3/168

- · · { by electrically heating (air heaters using electric energy supply, the air being in direct contact with the heating medium, [F24H3/04B](#)[F24H 3/0405](#))}

**Project: N/A (B60C)****U B60C 23/00****Devices for measuring, signalling, controlling, or distributing tyre pressure or temperature, specially adapted for mounting on vehicles( measuring in general [G01](#) , e.g. [G01L 17/00](#) ; remote signalling in general [G08](#) ); Arrangement of tyre inflating devices on vehicles, e.g. of pumps, of tanks{( supplying air for tyre inflation [B60S 5/04](#) ); Tyre cooling arrangements**

- B60C 23/005 · {Devices specially adapted for special wheel arrangements}  
 NOTE  
~~B60C23/00B~~[B60C 23/001](#), [B60C 23/02](#), [B60C 23/04](#), [B60C 23/06](#) or [B60C 23/08](#)
- B60C 23/10 · Arrangements of tyre-inflating pumps mounted on vehicles({ ~~B60C23/00B~~  
[B60C 23/001](#) takes precedence )}
- U B60C 25/00** **Apparatus or tools adapted for mounting, removing, repairing or inspecting pneumatic or solid tyres( apparatus or tools for mounting or dismounting wheels [B60B 29/00](#) ; apparatus or tools characterised by the means for holding wheels or parts thereof [B60B 30/00](#) )**
- U B60C 25/01 · for manually removing tyres from or mounting tyres on wheels
- U B60C 25/05 · · Machines,{i.e. motorized devices, e.g. for mounting, demounting(matching of tyres with rims, i.e. conjoint balancing [G01M](#))}
- B60C 25/12 · · · for only seating the beads  
 WARNING  
 Not complete pending reclassification; see also groups [B60C 25/05](#), ~~B60C25/14D~~[B60C 25/145](#)
- B60C 25/122 · · · · acting on the tyre tread  
 WARNING  
 Not complete pending reclassification; see also groups [B60C 25/05](#), ~~B60C25/14D~~[B60C 25/145](#)

**Project: N/A (B60H)**

- U B60H 1/00** **Heating, cooling or ventilating devices (heating, cooling or ventilating devices providing other air treatment, the other treatment being relevant, [B60H 3/00](#); ventilating solely by opening windows, doors, roof parts, or the like [B60J](#); heating or ventilating devices for vehicle seats [B60N 2/56](#); vehicle window or windscreen cleaners using air, e.g. defrosters, [B60S 1/54](#))**
- NOTE  
 In this group and its subgroups, as well as in patent documents, the following abbreviation is used: - HVAC Heating, Ventilating and Air Conditioning
- B60H 1/00478 · { Air-conditioning devices using the Peltier effect (for air-conditioning in general ~~F24F5/00D~~[F24F 5/0042](#); for refrigeration [F25B 21/02](#); electric devices exhibiting the Peltier effect [H01L 35/00](#))}

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

- U B60R 11/00** **Arrangements for holding or mounting articles, not otherwise provided for**
- B60R 11/02 · for radio sets, television sets, telephones, or the like; Arrangements of control thereof({ stowing of tape cartridges, compact discs or the like ~~B60R7/08H~~  
[B60R 7/088](#); }of aerials [H01Q](#))
- U B60R 25/00** **Fittings or systems for preventing or indicating unauthorised use or theft of vehicles(locks for vehicles [E05B 77/00](#)-[E05B 85/00](#))**
- WARNING  
 Subgroups of [B60R 25/00](#) corresponding to IPC2013.01 are not complete pending the completion of a reclassification; see also [B60R 25/00](#) and its other subgroups

- U B60R 25/10 · actuating a signalling device
- B60R 25/1001 · · {Alarm systems associated with another car fitting or mechanism, e.g. door lock or knob, pedals( features related to the general power supply ~~B60R25/10F~~ [B60R 25/1018](#) )}

**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](#) )**
- B60T 8/18 · responsive to vehicle weight or load, e.g. load distribution( { using electrical circuitry on regulation means [B60T 8/17](#) ; } [B60T 8/30](#) takes precedence; responsive to weight and speed condition [B60T 8/58](#) )
- NOTE  
[B60T 8/1887](#) and [B60T 8/1893](#) take precedence over [B60T 8/1806](#) to ~~B60T8/18D~~ [B60T 8/1881](#)
- 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 8/50 · · · having means for controlling the rate at which pressure is reapplied to( or released from) the brake
- B60T 8/5075 · · · · {Pressure release by pulsing of valves( ~~B60T8/50N~~ [B60T 8/5081](#), [B60T 8/5087](#) take precedence )}

**Project: N/A (B60Y)**

- U B60Y 2200/00 **Type of vehicle (not used; see subgroups)**
- U B60Y 2200/20 · Off-Road Vehicles
- B60Y 2200/24 · · Military vehicles (~~track vehicles L60Y220/50, tanks L60Y220/54~~)

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

- U B63B 9/00 **Methods of designing, building, maintaining, converting, refitting, repairing, or determining properties of vessels, not otherwise provided for( shuttering for building concrete vessels [E04G](#) )**
- U B63B 9/06 · Methods of building hulls
- B63B 9/065 · · {for floating offshore platforms( grounded platforms [E02B 17/00](#) )}
- WARNING  
Not complete, see [B63B 21/50](#) , ~~B63B35/00~~ [B63B 35/003](#), [B63B 35/44](#)
- U B63B 25/00 **Load-accomodating arrangements, e.g. stowing, trimming; Vessels characterised thereby( trimming otherwise than by cargo division, e.g. by use of ballast [B63B 43/06](#) , [B63B 43/08](#) ; constructive aspects of cargo spaces [B63B 11/00](#) ; hatches, hatchways [B63B 19/12](#) )**
- U B63B 25/02 · for bulk goods

- B63B 25/08
- fluid{( constructional features of bunkers [B63B 11/04](#) ; tanks for fuel or the like not forming bunkers [B63B 17/0027](#) )}
- WARNING  
Documents in [B63B 25/08](#) and subgroups concerning bunkers and other tanks for fuel or the like are in the process of being reclassified to [B63B 11/04](#) and ~~B63B17/00F~~[B63B 17/0027](#)

- U B63B 27/00** **Loading or unloading cargo or passengers( self-discharging barges or lighters [B63B 35/30](#) ; shore-based [B65G](#) { elevators, escalators or moving walkways per se [B66B](#); floating cranes [B66C 23/52](#) ; loading or unloading devices per se, see the relevant subclasses, e.g. [B65G](#), [B66C](#), [B67D](#) )}**
- WARNING  
The scope of this group is broader than the scope of the corresponding IPC group, and includes the scope of the IPC2 subgroups [B63B 27/02](#) , [B63B 27/06](#) , and [B63B 27/20](#)

- B63B 27/30
- {Arrangement of ship-based loading or unloading equipment}for transfer at sea between ships or between ships and off-shore structures
- WARNING  
Not complete, pending a reorganisation, see ~~B63B22/02B~~[B63B 22/021](#), [B63B 35/44](#) , and subgroups

- B63B 27/34
- using pipe-lines{( Anchoring arrangements for special vessels with mooring turrets [B63B 21/507](#) ; Buoys specially adapted for mooring a vessel and for transferring fluids , e.g. liquids [B63B 22/021](#) )}
- WARNING  
Not complete, pending a reorganisation, see ~~B63B21/50T~~[B63B 21/507](#), ~~B63B22/02B~~[B63B 22/021](#), [B63B 35/44](#) and subgroups

## Project: RP0079 (B63B)

- M B63B 41/00** **Drop keels, e.g. centre boards, or side boards{Collapsible keels, or the like, e.g. telescopically } ; Collapsible keels, or the like, e.g. telescopically ; Longitudinally split hinged keels} (-keels integral with hull [B63B 3/38](#)-; foils or keels on surf-boards [B63B 35/7906](#) ; stabilising foils [B63B 39/06](#)-)}**

## 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
- B63H 11/10
- the propulsive medium being ambient water
  - 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 ~~B63H11/10B~~[B63H 11/101](#)
- B63H 11/107
- Direction control of propulsive fluid{( [B63H 11/101](#) takes precedence )}
- WARNINGS  
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 ~~B63H11/10B~~[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; 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 [B63H5/125B](#)[B63H 5/1252](#), as well as [B63H 21/26](#) and subgroups

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

CONTAINERS FOR STORAGE OR TRANSPORT OF ARTICLES OR MATERIALS, e.g. BAGS, BARRELS, BOTTLES, BOXES, CANS, CARTONS, CRATES, DRUMS, JARS, TANKS, HOPPERS, FORWARDING CONTAINERS; ACCESSORIES, CLOSURES, OR FITTINGS THEREFOR; PACKAGING ELEMENTS; PACKAGES( containers specially adapted for storing agricultural or horticultural products [A01F 25/14](#) ; containers specially adapted for use in dairies [A01J](#); travelling bags or baskets, suitcases [A45C](#); travelling or camp equipment [A45F](#); { linkable display containers [A47B87/00C](#) } ; household or table equipment [A47G](#); letter-boxes for home use [A47G 29/12](#) ; kitchen equipment [A47J](#); associated with vehicles, see the appropriate subclass of [B60](#) to [B64](#); machines, apparatus, or devices for, or methods of, packaging articles or materials [B65B](#); sack holders [B65B 67/00](#) ; refuse receptacles [B65F 1/00](#) ; handling sheets, webs or filamentary material [B65H](#); load-engaging elements or devices attached to lifting or lowering gear of cranes or adapted for connection therewith for transmitting lifting forces [B66C](#); liquid handling [B67](#); storing gases [F17](#); { packaging for photosensitive or like materials [G03](#), e.g. [G03C 3/00](#) } ; making containers, see subclasses dealing with the working of the material concerned)

NOTES

In this subclass, the indexing codes of [B65D 2519/00004](#) - [B65D 2519/00995](#) should be added, if applicable

This subclass covers:

- containers, packaging elements or packages with auxilliary means or provisions for displaying articles or materials;
- methods of packaging which are wholly characterised by the form of the package produced or the form of the container or packaging element used, as distinct from the operations performed or the apparatus employed, which are covered by subclass [B65B](#)

This subclass, which is intended to be as comprehensive as possible, only excludes containers or packages of a nature clearly confined to a single other subclass, which are classified in that subclass

In this subclass, groups [B65D 5/00](#) , [B65D 27/00](#) , [B65D30/00](#) or [B65D 65/00](#) include constructional features of foldable or erectable container or wrapper

blanks as well as the containers or wrappers formed by folding or erecting such blanks

Containers, packaging elements or packages classified in group [B65D 85/00](#) , are also classified according to the constructional or functional features, if such features are of interest [6]

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

- "rigid or semi-rigid containers" includes:
  - a. containers not deformed by, or not taking-up the shape of, their contents;
  - b. containers adapted to be temporarily deformed to expel their contents;
  - c. pallets;
  - d. trays;
- "flexible containers" includes:
  - a. containers deformed by, or taking-up the shape of, their contents;
  - b. containers adapted to be permanently deformed to expel their contents;
- "packaging elements" includes:
  - a. elements, other than containers, for covering, protecting, stiffening, or holding together articles or materials to be stored or transported;
  - b. packaging materials of special type or form not provided for in other subclasses;
- "packages" includes:
  - a. combination of containers or packaging elements with articles or materials to be stored or transported;
  - b. articles joined together for convenience of storage or transport;
- "paper" includes materials, e.g. cardboard, plastic sheet materials, laminated materials, or metal foils, worked in a manner analogous to paper;
- "large containers", in groups [B65D 88/00](#) or [B65D 90/00](#) , means containers having about the size of containers used in container traffic, sometimes referred to as freight, forwarding or "ISO" (International Standardization) containers, or larger containers [3]

Tamper-indicating means for containers or closures are classified in the group appropriate to the type of container or closure, e.g. [B65D5/43](#) , [B65D 5/54](#) , [B65D 17/00](#) , [B65D 27/30](#) , [B65D 27/30](#) , [B65D 27/34](#) , [B65D 33/34](#) , [B65D 41/32](#) , [B65D 47/36](#) , [B65D 49/12](#) , [B65D 51/20](#) , [B65D 55/06](#) [5]

#### 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="#">B65D 5/34</a>	covered by	<a href="#">B65D 5/325</a>	
<a href="#">B65D 5/35</a>	covered by	<a href="#">B65D 5/32</a>	
<a href="#">B65D 5/355</a>	covered by	<a href="#">B65D 5/0005</a>	
<a href="#">B65D 5/43</a>	covered by	<a href="#">B65D 5/42</a>	
<a href="#">B65D 5/462</a>	covered by	<a href="#">B65D 5/46008</a>	to
<a href="#">B65D 5/46032</a>			
<a href="#">B65D 5/465</a>	covered by	<a href="#">B65D 5/46008</a>	to
<a href="#">B65D 5/46032</a>			
<a href="#">B65D 5/468</a>	covered by	<a href="#">B65D 5/4608</a>	
<a href="#">B65D 5/472</a>	covered by	<a href="#">B65D 5/46048</a>	
<a href="#">B65D 5/475</a>	covered by	<a href="#">B65D 5/46008</a>	
<a href="#">B65D 5/478</a>	covered by	<a href="#">B65D 5/46056</a>	
<a href="#">B65D 5/4805</a>	-	<a href="#">B65D 5/489</a>	covered by
<a href="#">B65D 5/48002</a>			
<a href="#">B65D 5/49</a>	-	<a href="#">B65D 5/499</a>	covered by
<a href="#">B65D 5/48024</a>			
<a href="#">B65D 5/63</a>	covered by	<a href="#">B65D 5/72</a>	
<a href="#">B65D 6/00</a>	-	<a href="#">B65D 6/40</a>	covered by
<a href="#">B65D 7/00</a>	,	<a href="#">B65D 9/00</a>	,
<a href="#">B65D 15/00</a>			
<a href="#">B65D 8/00</a>	-	<a href="#">B65D 8/22</a>	covered by
<a href="#">B65D 7/00</a>	,	<a href="#">B65D 9/00</a>	,
<a href="#">B65D 15/00</a>			
<a href="#">B65D 19/22</a>	covered by	<a href="#">B65D 19/0004</a>	&
subgroups	<a href="#">B65D 19/24</a>	covered by	<a href="#">B65D 19/0004</a>
& subgroups	<a href="#">B65D 19/26</a>	covered by	<a href="#">B65D 19/0004</a>
& subgroups	<a href="#">B65D 19/28</a>	covered by	<a href="#">B65D 19/0004</a>
& subgroups	<a href="#">B65D 19/30</a>	covered by	<a href="#">B65D 19/0004</a>
& subgroups	<a href="#">B65D 19/31</a>	covered by	<a href="#">B65D 19/0004</a>
& subgroups	<a href="#">B65D 19/34</a>	covered by	<a href="#">B65D 19/0004</a>
<a href="#">B65D 17/28</a>	-	<a href="#">B65D 17/48</a>	,
covered by	<a href="#">B65D 17/16</a>	to	<a href="#">B65D 17/26</a>
<a href="#">B65D 19/32</a>	covered by	<a href="#">B65D 19/0002</a>	,
<a href="#">B65D 19/0004</a>			
<a href="#">B65D 21/024</a>	covered by	<a href="#">B65D 21/0201</a>	
<a href="#">B65D 21/028</a>	covered by	<a href="#">B65D 21/0204</a>	
<a href="#">B65D 21/032</a>	covered by	<a href="#">B65D 21/0211</a>	
<a href="#">B65D 21/036</a>	covered by	<a href="#">B65D 21/0217</a>	
<a href="#">B65D 25/26</a>	covered by	<a href="#">B65D 81/02</a>	
<a href="#">B65D 30/00</a>	-	<a href="#">B65D 30/28</a>	covered by
<a href="#">B65D 29/00</a>	,	<a href="#">B65D 31/00</a>	
<a href="#">B65D 33/17</a>	covered by	<a href="#">B65D 33/1633</a>	
<a href="#">B65D 33/36</a>	covered by	<a href="#">B65D 75/58</a>	
<a href="#">B65D 33/38</a>	covered by	<a href="#">B65D 75/5861</a>	
<a href="#">B65D 35/48</a>	-	<a href="#">B65D 35/54</a>	covered by
<a href="#">B65D 47/2018</a>			
<a href="#">B65D 39/18</a>	covered by	<a href="#">B65D 39/00</a>	
+s.gr.			
<a href="#">B65D 41/01</a>	covered by	<a href="#">B65D 41/00</a>	
<a href="#">B65D 43/03</a>	covered by	<a href="#">B65D 43/00</a>	+
<a href="#">B65D 2543/00027</a>			
<a href="#">B65D 47/22</a>	covered by	<a href="#">B65D 47/20</a>	
<a href="#">B65D 47/34</a>	covered by	<a href="#">B05B 11/00</a>	
<a href="#">B65D 50/06</a>	covered by	<a href="#">B65D55/02E</a>	
<a href="#">B65D 50/08</a>	covered by	<a href="#">B65D 55/02</a>	
<a href="#">B65D 50/10</a>	covered by	<a href="#">B65D 55/02</a>	
<a href="#">B65D 50/12</a>	covered by	<a href="#">B65D 55/02</a>	

[B65D 50/14](#) covered by [B65D 55/02](#)  
[B65D 65/26](#) - [B65D 65/32](#) covered by  
[B65D 75/58](#)  
[B65D 65/34](#) covered by [B65D 75/66](#)  
[B65D 65/36](#) covered by [B65D 75/58](#)  
[B65D 71/52](#) - [B65D 71/68](#) covered by  
[B65D 71/0003](#) to [B65D 71/0077](#)  
[B65D 75/60](#) - [B65D 75/64](#) covered by  
[B65D 75/58](#)  
[B65D 81/15](#) covered by [B65D 81/05](#)  
[B65D 81/17](#) covered by [B65D 81/02](#)  
[B65D 83/18](#) - [B65D 83/74](#) covered by  
[B65D 83/14](#) , [B65D 83/16](#)  
[B65D 83/18](#) covered by [B65D 83/201](#)  
[B65D 83/58](#) covered by [B65D 83/44](#)  
[B65D 83/76](#) covered by [B65D 83/0005](#)  
[B65D 85/57](#) covered by [G11B 23/00](#)  
[B65D 85/575](#) covered by [G11B 23/00](#)  
[B65D 85/86](#) - [B65D 85/90](#) covered by  
~~[H01L 21/00](#)~~ - [H01L21/00S](#) , [H05K 13/00](#)  
~~[B65D91/00](#)~~[B65D 91/00](#) covered by [A47G 29/12](#)

- U B65D 33/00** **Details of, or accessories for, sacks or bags**  
 B65D 33/01
  - Ventilation or drainage of bags, {e.g. disaligned apertures, labyrinth welds( pressure-relief valves comprising at least one elastic element [B65D77/22D](#)[B65D 77/225](#); connection of valves to inflatable elastic bodies [B60C 29/00](#) )}
- U B65D 41/00** **Caps, e.g. crown caps, crown seals, i.e. members having parts arranged for engagement with the external periphery of a neck or wall defining a pouring opening or discharge aperture; Protective cap-like covers for closure members, e.g. decorative covers of metal foil or paper( [B65D 45/00](#) takes precedence; combinations of caps and protective cap-like covers [B65D 51/18](#) ; making closures by working metal sheet [B21D 51/44](#) ; affixing labels [B65C 3/06](#) )**
- U B65D 41/32**
  - Caps or cap-like covers with lines of weakness, tearing-strips, tags, or like opening or removal devices, e.g. to facilitate formation of pouring openings
- U B65D 41/34**
  - • Threaded or like caps or cap-like covers {provided with tamper elements formed in, or attached to, the closure skirt}
- B65D 41/348**
  - • • {the tamper element being rolled or pressed to conform to the shape of the container, e.g. metallic closures( ~~[B65D41/34A](#)~~[B65D 41/3404](#), [B65D 41/3423](#) take precedence )}
- B65D 63/00** **Flexible elongated elements, e.g. straps, for bundling or supporting articles( attached to or integral with bags or sacks [B65D 33/165](#) ; for securing load ~~[B60P7/08C](#)~~[B60P 7/0823](#); for supporting pipes, cables or protective tubing [F16L 3/137](#) ; { for bundling pipes [F16L 3/233](#) )}**
- U B65D 75/00** **Packages comprising articles or materials partially or wholly enclosed in strips, sheets, blanks, tubes, or webs of flexible sheet material, e.g. in folded wrappers( [B65D 71/00](#) takes precedence; wrapping [B65B 11/00](#) )**
- U B65D 75/52**
  - Details
- U B65D 75/58**
  - • Opening or contents-removing devices added or incorporated during package manufacture{( [B65D 75/36](#) , [B65D 85/1027](#) take precedence )}
- B65D 75/5827**
  - • • {Tear-lines provided in a wall portion( ~~[B65D75/58B](#)~~[B65D 75/5805](#), [B65D 75/5816](#) take precedence )}

U B65D 83/00

Containers or packages with special means for dispensing contents( dispensing means incorporated in removable or non-permanently secured container closures [B65D 47/00](#) ; for shops, stores, offices, bars, or the like [A47F 1/04](#) ; showcases or cabinets with dispensing arrangements [A47F 3/02](#) ; { for surgical articles [A61B 19/026](#) } ; magazines for screws or nuts in combination with spanners, wrenches or screw-drivers [B25B 23/06](#) ; nail dispensers [B25C 3/00](#) ; for use in connection with the handling of sheets, webs, or filamentary material [B65H](#); coin deliverers [G07D 1/00](#) ; { coin-freed apparatus for dispensing discrete articles [G07F 11/00](#) }

WARNING

Groups [B65D 83/75](#) to [B65D 83/759](#) do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - [B65D 83/75](#) to [B65D 83/759](#) : [B65D 83/14](#)

B65D 83/08

· for dispensing thin flat articles in succession({ towel dispensers intended for re-use [A47K 10/24](#) })

NOTE

[B65D 83/10](#) and [B65D 83/12](#) take precedence over [B65D 83/0805](#) to ~~[B65D83/08H](#)~~[B65D 83/0894](#)

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:

<del><a href="#">B65G33/28</a></del>	<a href="#">B65G 33/28</a>	covered by	
<del><a href="#">B65G 33/26</a></del>	<del>B</del>		<a href="#">B65G33/26B</a>
<a href="#">B65G 47/10</a>		covered by	<del><a href="#">B65G 1/137</a></del>
<del>D</del>			<a href="#">B65G1/137D</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>

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
- ~~[B07C 1/02](#)~~ ~~[B07C 1/02C](#)~~ , ~~[G07D 1/00](#)~~ ~~[G07D 1/00D](#)~~
- [G07D 11/00](#) and s.gr - [B65H 85/00](#)
- covered by [G03B 27/62](#) , [G03B 27/6264](#) ,
- [G03B 27/6257](#)

- U B65H 54/00 Winding, coiling, or depositing filamentary material( cores, formers, holders, cans or receptacles [B65H 75/02](#) )**
- U B65H 54/02 · Winding and traversing material on to reels, bobbins, tubes, or like package cores or formers
- U B65H 54/28 · · Traversing devices; Package-shaping arrangements( arrangements for preventing ribbon winding [B65H 54/38](#) ; grooved, slotted, or split drums for driving of packages [B65H 54/46](#) )
- B65H 54/2848 · · {Arrangements for aligned winding( reels with grooves or grooved elements for aligned winding [B65H75/26B](#) [B65H 75/265](#) )}

**Project: N/A (B67D)**

- U B67D 1/00 Apparatus or devices for dispensing beverages on draught ([B67D 3/00](#) takes precedence; apparatus for making beverages [A47J 31/00](#))**
- U B67D 1/08 · Details

- U B67D 1/0801      · · {of beverage containers, e.g. casks, kegs}
- B67D 1/0802      · · · {Dip tubes (~~for pressurized containers L67D1/00L20C10, L67D1/00L20C20~~)}

**Project: N/A (C01B)****C01B 4/00**

**Hydrogen isotopes; Inorganic compounds thereof prepared by isotope exchange, e.g.  $\text{NH}_3\text{NH}_3 + \text{D}_2\text{D}_2 \rightarrow \text{NH}_2\text{D}\text{NH}_2\text{D} + \text{HD}$  (separation of isotopes [B01D 59/00](#) ; other chemical reactions to form compounds of hydrogen isotopes, see the relevant groups for hydrogen compounds in class [C01](#) )**

**U C01B 5/00****Water**

## C01B 5/02

- Heavy water; Preparation by chemical reaction of hydrogen isotopes or their compounds, e.g.  $4\text{ND}_3 + 7\text{O}_2 \rightarrow 4\text{NO}_2 + 6\text{D}_2\text{O} + 2\text{D}_2$   
+  $\text{O}_2 \rightarrow 2\text{D}_2\text{O}$

**C01B 6/00**

**Hydrides of metals{including fully or partially hydrided metals, alloys or intermetallic compounds( use of some thereof for reversible sorption of hydrogen [C01B 3/0005](#) , [C01B 3/508](#) ); Compounds containing at least one metal-hydrogen bond, e.g.  $(\text{GeH}_3\text{GeH}_3)_2\text{S}_2$ , SiH GeH}; Monoborane or diborane; Addition complexes thereof( higher hydrides of boron, substituted hydrides of boron [C01B 35/00](#) )**

## U C01B 6/06

- Hydrides of aluminium, gallium, indium, thallium, germanium, tin, lead, arsenic, antimony, bismuth or polonium; Monoborane; Diborane; Addition complexes thereof

## U C01B 6/10

- · Monoborane; Diborane; Addition complexes thereof

## U C01B 6/13

- · · Addition complexes of monoborane or diborane, e.g. with phosphine, arsine or hydrazine

## U C01B 6/15

- · · · Metal borohydrides; Addition complexes thereof

## U C01B 6/19

- · · · · Preparation from other compounds of boron

## C01B 6/21

- · · · · · Preparation of borohydrides of alkali metals, alkaline earth metals, magnesium or beryllium; Addition complexes thereof, e.g.  $\text{LiBH}_4 \cdot 2\text{N}_2\text{H}_4$ ,  $\text{LiBH}_{4,2}\text{N}_2\text{H}_4$ ,  $\text{NaB}_2\text{H}_7$ ,  $\text{NaB}_2\text{H}_7$

## C01B 6/23

- · · · · · · Preparation of borohydrides of other metals, e.g. aluminium borohydride; Addition complexes thereof, e.g.  $\text{Li}[\text{Al}(\text{BH}_4\text{BH}_4)_3\text{H}_3]$

## U C01B 6/24

- Hydrides containing at least two metals; Addition complexes thereof( [C01B 6/13](#) to [C01B 6/23](#) take precedence )

## C01B 6/243

- · {containing only hydrogen, aluminium and alkali metals, e.g.  $\text{Li}(\text{AlH}_4\text{AlH}_4)$ }

**U C01B 11/00****Oxides or oxyacids of halogens; Salts thereof**

## U C01B 11/02

- Oxides of chlorine

## C01B 11/021

- · {Chlorine hemioxide ( $\text{Cl}_2\text{O}$ )}

**U C01B 13/00****Oxygen; Ozone; Oxides or hydroxides in general**

## U C01B 13/10

- Preparation of ozone

## C01B 13/11

- · by electric discharge

NOTE

In groups [C01B 13/11](#) and [C01B13/11B](#) [C01B 13/115](#), additional features relating to the preparation of ozone by electrical discharge are indexed with codes chosen from [C01B 2201/00](#) to [C01B 2201/90](#) .

**U C01B 17/00****Sulfur; Compounds thereof**

## U C01B 17/45

- Compounds containing sulfur and halogen, with or without oxygen

- U C01B 17/4561 . . {Compounds containing sulfur, halogen and oxygen only}
- C01B 17/4569 . . . {Thionyl fluoride ( $\text{SOF}_2\text{SOF}_2$ )}
- C01B 17/4576 . . . {Sulfuryl fluoride ( $\text{SO}_2\text{F}_2\text{SO}_2\text{F}_2$ )}
- C01B 17/4584 . . . {Thionyl chloride ( $\text{SOCl}_2\text{SOCl}_2$ )}
- C01B 17/4592 . . . {Sulfuryl chloride ( $\text{SO}_2\text{Cl}_2\text{SO}_2\text{Cl}_2$ )}
- U C01B 17/46 . . Compounds containing sulfur, halogen, hydrogen, and oxygen
- C01B 17/463 . . {Fluosulfonic acid ( $\text{FSO}_3\text{HFSO}_3\text{H}$ )}
- C01B 17/466 . . {Chlorosulfonic acid ( $\text{ClSO}_3\text{HClSO}_3\text{H}$ )}
- U C01B 21/00 Nitrogen; Compounds thereof**
- U C01B 21/082 . . Compounds containing nitrogen and non-metals{and optionally metals}{[C01B 21/06](#) , [C01B 21/08](#) take precedence )
- U C01B 21/087 . . containing one or more hydrogen atoms
- U C01B 21/088 . . . containing also one or more halogen atoms
- U C01B 21/09 . . . . Halogeno-amines, e.g. chloramine
- C01B 21/091 . . . . . {Chloramine, i.e.  $\text{NH}_2\text{ClNH}_2\text{Cl}$  or dichloramine, i.e.  $\text{NHCl}_2\text{NHCl}_2$ }
- U C01B 21/20 . . Nitrogen oxides; Oxyacids of nitrogen; Salts thereof
- C01B 21/206 . . {Nitric anhydride ( $\text{N}_2\text{O}_5\text{N}_2\text{O}_5$ )( [C01B 21/203](#) takes precedence )}
- C01B 21/22 . . Nitrous oxide ( $\text{N}_2\text{O}\text{N}_2\text{O}$ ){([C01B 21/203](#) takes 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](#) )**
- U C01B 31/02 . . Preparation of carbon( by using ultra high pressure, e.g. for the formation of diamonds, [B01J 3/06](#) ; by crystal growth [C30B](#) ); Purification;{After-treatment}
- U C01B 31/04 . . Graphite, including modified graphite e.g. graphitic oxides, intercalated graphite, expanded graphite or graphene
- NOTE**  
In groups [C01B 31/04](#) to [C01B 31/0492](#) it is desirable to add indexing codes for structural aspects or properties of graphene. The indexing codes are chosen from [C01B 2204/00](#) to [C01B 2204/32](#)
- C01B 31/0415 . . . {Intercalation}
- WARNING**  
Group [C01B 31/0415](#) is not complete pending a reclassification. See also group ~~[C01B31/00B](#)~~[C01B 31/005](#)
- C01B 31/0423 . . . {Expanded or exfoliated graphite}
- WARNING**  
Groups [C01B 31/043](#) to [C01B 31/0492](#) are not complete pending a reclassification. See also ~~groups~~group ~~[C01B31/00B](#)~~ and [C01B 31/04](#)
- 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](#) )

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)}

**NOTE**

Documents which belong to more than one subgroup of **C01B33/C01B28B2** to **C01B33/C01B28B8** will be described by a combination, e.g. **C01B33/C01B28B2B** + B4B. The documents which pertain to the structure of a specific molecular sieve are classified in the relevant subgroup

**Project: N/A (C01C)****U C01C 1/00**

**Ammonia; Compounds thereof** {([C01C 3/08](#), [C01C 3/14](#), [C01C 3/16](#), [C01C 3/20](#) take precedence)}

**NOTE**

Complex ammine salts, e.g. [Pd(NH<sub>3</sub>)<sub>4</sub>]Cl<sub>2</sub>, are { also} classified in the relevant groups of subclasses [C01D](#) to [C01G](#), according to the metal

U C01C 1/02

- Preparation, {purification} or separation of ammonia

U C01C 1/04

- • Preparation of ammonia by synthesis { in the gas phase}(preparation or purification of gas mixtures for ammonia synthesis { [C01B 3/025](#)})

C01C 1/0405

- • • {from **N<sub>2</sub>N<sub>2</sub>** and **H<sub>2</sub>H<sub>2</sub>** in presence of a catalyst}

C01C 1/0458

- • • • {Separation of **NH<sub>3</sub>NH<sub>3</sub>** (during purge gas treatment [C01C 1/0476](#))}

C01C 1/0476

- • • • {Purge gas treatment, e.g. for removal of inert gases or recovery of **H<sub>2</sub>H<sub>2</sub>**}

**Project: N/A (C01G)****U C01G 21/00****Compounds of lead**

U C01G 21/02

- Oxides

C01G 21/04

- • Lead suboxide (**Pb<sub>2</sub>O****Pb<sub>2</sub>O**)

**U C01G 43/00****Compounds of uranium**

U C01G 43/04

- Halides of uranium

U C01G 43/06

- • Fluorides

C01G 43/063

- • • {Hexafluoride**He<sub>x</sub>afluoride** (**UF<sub>6</sub>****UF<sub>6</sub>**)}

**U C01G 51/00****Compounds of cobalt**

U C01G 51/40

- { Cobaltates}

U C01G 51/66

- • { containing alkaline earth metals, e.g. SrCoO<sub>3</sub>}

C01G 51/68

- • • { containing rare earth, e.g. **La<sub>0.3</sub>Sr<sub>0.7</sub>CoO<sub>3</sub>****La<sub>0.3</sub>Sr<sub>0.7</sub>CoO<sub>3</sub>**}

**Project: N/A (C01P)****U C01P 2002/00****Crystal-structural characteristics**

U C01P 2002/30

- Three-dimensional structures

C01P 2002/32

- • spinel-type (**AB<sub>2</sub>O<sub>4</sub>****AB<sub>2</sub>O<sub>4</sub>**)

C01P 2002/34

- • perovskite-type (**ABO<sub>3</sub>****ABO<sub>3</sub>**)

C01P 2002/36

- • pyrochlore-type (**A<sub>2</sub>B<sub>2</sub>O<sub>7</sub>****A<sub>2</sub>B<sub>2</sub>O<sub>7</sub>**)

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

- U C02F 1/00** Treatment of water, waste water, or sewage( [C02F 3/00](#) to [C02F 9/00](#) take precedence )
- C02F 1/50 · by addition or application of a germicide or by oligodynamic treatment({ [C02F1/46H](#)[C02F 1/4606](#), [C02F 1/467](#) , [C02F 1/76](#) take precedence })
- U C02F 2209/00** Controlling or monitoring parameters in water treatment
- C02F 2209/14 · [NH3](#)[NH<sub>3</sub>](#)-N
- C02F 2209/18 · [PO4](#)[PO<sub>4</sub>](#)-P
- C02F 2209/19 · [SO4](#)[SO<sub>4</sub>](#)-S
- C02F 2209/26 · [H2S](#)[H<sub>2</sub>S](#)
- C02F 2209/28 · [CH4](#)[CH<sub>4</sub>](#)
- C02F 2209/285 · · [CH4](#)[CH<sub>4</sub>](#) in the gas phase
- C02F 2209/30 · [H2](#)[H<sub>2</sub>](#)
- C02F 2209/34 · [N2O](#)[N<sub>2</sub>O](#)

**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:

[C03B 8/00](#) covered by [C03B 19/00](#) ,  
[C03B 37/00](#)  
[C03B 8/02](#) covered by [C03B 19/1065](#) ,  
[C03B 19/12](#) , ~~[C03B 37/01](#)~~ [C03B37/01B](#) ,  
[C03B 37/016](#)  
[C03B 8/04](#) covered by [C03B 19/106](#) ,  
[C03B 19/14](#) , [C03B 37/014](#)

- U C03B 2201/00** Type of glass produced
- U C03B 2201/80 · Non-oxide glasses or glass-type compositions
- U C03B 2201/82 · · Fluoride glasses, e.g. ZBLAN glass
- C03B 2201/83 · · · Ionic or single crystal type, e.g. NaF, LiF, [CaF2](#)[CaF<sub>2</sub>](#)
- U C03B 2207/00** Glass deposition burners
- C03B 2207/30 · For glass precursor of non-standard type, e.g. solid [SiH3F](#)[SiH<sub>3</sub>F](#)
- U C03B 2215/00** Press-moulding glass
- U C03B 2215/02 · Press-mould materials
- U C03B 2215/08 · · Coated press-mould dies
- U C03B 2215/14 · · · Die top coat materials, e.g. materials for the glass-contacting layers
- C03B 2215/26 · · · · Mixtures of materials covered by more than one of the groups [C03B 2215/16](#) to [C03B 2215/24](#) , e.g. C-SiC, Cr-[Cr2O3](#)[Cr<sub>2</sub>O<sub>3</sub>](#), SIALON

**Project: N/A (C03C)**

- U C03C 2217/00** Coatings on glass
- U C03C 2217/20 · Materials for coating a single layer on glass
- U C03C 2217/21 · · Oxides

C03C 2217/218

• • • ~~V<sub>2</sub>O<sub>5</sub>~~ V<sub>2</sub>O<sub>5</sub>, ~~Nb<sub>2</sub>O<sub>5</sub>~~ Nb<sub>2</sub>O<sub>5</sub>, ~~Ta<sub>2</sub>O<sub>5</sub>~~ Ta<sub>2</sub>O<sub>5</sub>

**Project: N/A (C04B)****U C04B 11/00****Calcium sulfate cements**

C04B 11/002

• {Mixtures of different ~~CaSO<sub>4</sub>~~ CaSO<sub>4</sub>-modifications, e.g. plaster of Paris and anhydrite, used as cements}

**U C04B 28/00****Compositions of mortars, concrete or artificial stone, containing inorganic binders or the reaction product of an inorganic and an organic binder, e.g. polycarboxylate cements**NOTE

While using Combination Sets in this main group, the presence of an organic binder is indicated with symbols chosen from group [C04B 24/00](#) , and the presence of a supplementary inorganic binder with symbols chosen from groups [C04B 7/00](#) to [C04B 12/00](#)

C04B 28/34

• containing cold phosphate binders

NOTE

While using Combination Sets in this main group, the presence of a reactive or reacted oxide is indicated with symbols chosen from [C04B 14/06](#) and [C04B 14/30](#) (and subgroups), except for boron oxide ( [C04B 22/0013](#) ) and oxides of the alkali or alkaline-earth metals, with the exception of magnesium ( [C04B 22/062](#) and [C04B 22/064](#) ), e.g. a composition containing a mixture of phosphoric acid, AlCr phosphate and magnesium oxide will be classified in [C04B 28/346](#) and will be indexed with codes [C04B 14/303](#) , [C04B 14/304](#) and ~~C04B14/30L~~[C04B 14/307](#). "Phosphates" includes monobasic and dibasic phosphates

- U 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](#) ;{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](#) ; 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 35/01      • based on oxide ceramics
- U C04B 35/10     • • based on aluminium oxide
- U C04B 35/101   • • • Refractories from grain sized mixtures
- C04B 35/106   • • • • containing zirconium oxide or zircon ( $ZrSiO_4ZrSiO_4$ )
- U C04B 35/107   • • • Refractories by fusion casting
- C04B 35/109   • • • • containing zirconium oxide or zircon ( $ZrSiO_4ZrSiO_4$ )
- U C04B 35/515   • based on non-oxide ceramics
- U C04B 35/58     • • based on borides, nitrides, [i.e. nitrides, oxynitrides, carbonitrides or oxycarbonitrides] or silicides{( containing free binder metal [C22C 29/00](#) )}
- U C04B 35/5805   • • • {based on borides}
- C04B 35/58057 • • • • {based on magnesium boride, e.g.  $MgB_2MgB_2$ }
- C04B 35/71     • Ceramic products containing macroscopic reinforcing agents( [C04B 35/66](#) takes precedence; { infiltration of a porous ceramic matrix with a material forming a non-ceramic phase [C04B 41/00](#) , reaction infiltration with Si in order to form SiC [C04B 35/573](#) , in order to form  $Si_3N_4Si_3N_4$  [C04B 35/591](#) )}

#### NOTE

In groups [C04B 35/71](#) to [C04B 35/83](#) the composition of the ceramic products is also classified in groups [C04B 35/01](#) to [C04B 35/597](#)

- 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

WARNINGS

N0812]

Groups **C04B37/04B**[C04B 37/042](#), [C04B 37/045](#) and [C04B 37/047](#) are not complete, see also [C04B 37/04](#)

- U C04B 2235/00** **Aspects relating to ceramic starting mixtures or sintered ceramic products**

NOTE

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

- U C04B 2235/02** • Composition of constituents of the starting material or of secondary phases of the final product

NOTE

Indexing codes [C04B 2235/02](#) to [C04B 2235/5481](#) are to be used only if the aspect is not trivial or not standard, e.g. if water is used as a mixing medium for a powder, whereas normally an organic mixing medium is used or if not the standard alpha-alumina is used to make an alumina ceramic but gamma-alumina in stead.

- U C04B 2235/30** • • Constituents and secondary phases not being of a fibrous nature

NOTE

1. Indexing codes [C04B 2235/30](#) to [C04B 2235/549](#) are to be given to constituents or additives only if:

a. it is not obvious from the end product as such that the constituent or additive has been used for making the end product.

Examples:

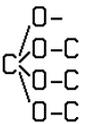
- in case spinel is made from a certain clay in stead of from alumina and silica, the clay is coded, - when calcium zirconate and titania are used to make calcium zirconium titanate, a code should be given for the calcium zirconate constituent while normally calcium oxide or calcium carbonate and zirconia are used. The titania constituent of the starting mixture is not coded since it is to be expected that a single metal oxide is used to make a mixed metal oxide. b. it is not obvious from the "invention information" symbols that this constituent has been used to make the end product, e.g. if the "invention information" symbol given indicates that a zirconia-alumina composite is prepared it is common practice that zirconia and alumina constituents have been used and thus no codes for zirconia or alumina are given. In the same way, if an allocation indicates that an oxide ceramic contains carbon, no code for the addition of carbon is given. However for an alumina composite product comprising titania, the main symbol for composites based on alumina is given together with an indexing code for titania.

2. In groups [C04B 2235/32](#) to [C04B 2235/349](#) oxides are considered to comprise also metal salts from which they are formed by heating.

- U C04B 2235/32
- • • Metal oxides, mixed metal oxides, or oxide-forming salts thereof, e.g. carbonates, nitrates, (oxy)hydroxides, chlorides
- NOTE  
In groups [C04B 2235/32](#) to [C04B 2235/349](#) metal salts are classified according to the oxides that are formed by heating the metal salts.
- U C04B 2235/3217
- • • • Aluminum oxide or oxide forming salts thereof, e.g. bauxite, alpha-alumina
- C04B 2235/3222
- • • • • Aluminates other than aluminosilicates, e.g. spinel ( $MgAl_2O_4MgAl_2O_4$ )
- U C04B 2235/3262
- • • • Manganese oxides, manganates, rhenium oxides or oxide-forming salts thereof, e.g. MnO
- C04B 2235/3263
- • • • •  $Mn_3O_4Mn_3O_4$
- U C04B 2235/327
- • • • Iron group oxides, their mixed metal oxides, or oxide-forming salts thereof
- U C04B 2235/3275
- • • • • Cobalt oxides, cobaltates or cobaltites or oxide forming salts thereof, e.g. bismuth cobaltate, zinc cobaltite
- C04B 2235/3277
- • • • • •  $Co_3O_4Co_3O_4$
- C04B 2235/3281
- • • • Copper oxides, cuprates or oxide-forming salts thereof, e.g. CuO or  $Cu_2O$
- U C04B 2235/70
- Aspects relating to sintered or melt-casted ceramic products
- U C04B 2235/74
- Physical characteristics
- U C04B 2235/76
- • • Crystal structural characteristics, e.g. symmetry
- NOTE  
Codes [C04B 2235/76](#) to [C04B 2235/768](#) are to be used only if the crystal structure is not identified by the classification.
- U C04B 2235/762
- • • • Cubic symmetry, e.g. beta-SiC
- C04B 2235/763
- • • • • Spinel structure  $AB_2O_4AB_2O_4$
- C04B 2235/764
- • • • • Garnet structure  $A_3B_2A_3B_2(CO_4CO_4)_3$
- C04B 2235/766
- • • • Trigonal symmetry, e.g. alpha- $Si_3N_4Si_3N_4$  or alpha-Sialon
- C04B 2235/767
- • • • • Hexagonal/Hexagonal symmetry, e.g. beta- $Si_3N_4Si_3N_4$ , beta-Sialon, alpha-SiC or hexa-ferrites
- C04B 2235/768
- • • • Perovskite structure  $ABO_3ABO_3$
- C04B 2235/79
- • • Non-stoichiometric products, e.g. perovskites ( $ABO_3ABO_3$ ) with an A/B-ratio other than 1

## Project: N/A (C07C)

- U C07C 15/00
- Cyclic hydrocarbons containing only six-membered aromatic rings as cyclic parts**
- U C07C 15/02
- Monocyclic hydrocarbons
- C07C 15/067
- •  $C_8H_{10}C_8H_{10}$  hydrocarbons
- U C07C 37/00
- Preparation of compounds having hydroxy or O-metal groups bound to a carbon atom of a six-membered aromatic ring**
- U C07C 37/01
- by replacing functional groups bound to a six-membered aromatic ring by hydroxy groups, e.g. by hydrolysis
- C07C 37/04
- • by substitution of  $SO_3H$  groups or a derivative thereof

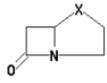
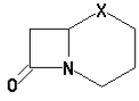
- U C07C 43/00** Ethers; Compounds having  groups,  groups or 
- groups**
- U C07C 43/02 · Ethers
  - U C07C 43/03 · · having all ether-oxygen atoms bound to acyclic carbon atoms
  - U C07C 43/04 · · · Saturated ethers
  - C07C 43/046 · · · · { Alkyl tert-alkyl ether, e.g.  $\text{CH}_3\text{OC(CH}_3)_3$ }
- C07C 2104/00** Fullerenes, e.g.  $\text{C}_{60}$  (buckminsterfullerene) or  $\text{C}_{70}$

**Project: N/A (C07D)**

- U C07D 209/00** Heterocyclic compounds containing five-membered rings, condensed with other rings, with one nitrogen atom as the only ring hetero atom
- U C07D 209/02 · condensed with one carbocyclic ring
  - U C07D 209/04 · · Indoles; Hydrogenated indoles
  - C07D 209/43 · · · with an  $-\text{OCH}_2\text{CH}(\text{OH})\text{CH}_2\text{NH}_2$  radical, which may be further substituted, attached in positions 4, 5, 6 or 7

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

- U C07F 9/00** Compounds containing elements of the 5th Group of the Periodic System
- U C07F 9/02 · Phosphorus compounds (sugar phosphates [C07H 11/04](#); nucleotides [C07H 19/00](#), [C07H 21/00](#); nucleic acids [C07H 21/00](#))
  - U C07F 9/28 · · with one or more P-C bonds
  - U C07F 9/38 · · · Phosphonic acids  $\text{RP}(=\text{O})(\text{OH})_2$ ; Thiophosphonic acids { i.e.  $\text{RP}(=\text{X})(\text{XH})_2$  (X = S, Se)}
  - U C07F 9/3804 · · · · {not used, see subgroups}
  - U C07F 9/3839 · · · · · { Polyphosphonic acids}
  - C07F 9/3843 · · · · · {containing no further substituents than  $-\text{PO}_3\text{H}_2$  groups}
  - C07F 9/3878 · · · · · {containing substituents selected from B, Si, P (other than  $-\text{PO}_3\text{H}_2$  groups other than  $-\text{PO}_3\text{H}_2$  groups) or a metal}
  - U C07F 9/40 · · · · Esters thereof
  - U C07F 9/4003 · · · · · {the acid moiety containing a substituent or a structure which is considered as characteristic}
  - U C07F 9/4025 · · · · · {Esters of poly(thio)phosphonic acids}
  - C07F 9/4028 · · · · · · {containing no further substituents than  $-\text{PO}_3\text{H}_2$  groups in free or esterified form}
  - C07F 9/4053 · · · · · · {containing substituents selected from B, Si, P (other than  $-\text{PO}_3\text{H}_2$  groups in free or esterified form other than  $-\text{PO}_3\text{H}_2$  groups in free or esterified form), or a metal}
  - U C07F 9/547 · · Heterocyclic compounds, e.g. containing phosphorus as a ring hetero atom
  - 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>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>CH<sub>2</sub>, O, S, NH) optionally with an additional double bond and/or substituents e.g. cephalosporins and analogs}

## Project: N/A (C07H)

C07H 9/00

**Compounds containing a hetero ring sharing at least two hetero atoms with a saccharide radical**

**NOTES**

The cyclic hetero-ring atom of the saccharide radical is not to be taken into consideration: levoglucosan **C07H19/01E**

Attention is drawn to Note 8 after the subclass title

U C07H 15/00

**Compounds containing hydrocarbon or substituted hydrocarbon radicals directly attached to hetero atoms of saccharide radicals{ acylated on hetero atoms of the saccharide radical [C07H 13/00](#) ; derivatives of bis methylen dioxy carbohydrates [C07H9/04D](#) ; ( [C07H 3/04](#) , [C07H 3/06](#) , take precedence; [C07H 9/00](#) takes precedence when at least one ring heteroatom is different from oxygen, however anhydro derivatives of nucleosides and nucleotides [C07H 19/00](#) )}**

**NOTE**

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

U C07H 15/20

• Carbocyclic rings{( [C07H15/00F](#) , [C07H15/10D2](#) take precedence )}

U C07H 15/22

• Cyclohexane rings, substituted by nitrogen atoms

**NOTE**

- for this two dot subdivision:

Image

- for the three dot subdivisions: (

[C07H15/22B](#) and [C07H 15/222](#) )

U C07H 15/222

• Cyclohexane rings substituted by at least two nitrogen atoms{ at least two guanidine radicals [C07H 15/238](#) }

U C07H 15/226

• {with at least two saccharide radicals directly attached to the cyclohexane rings}

C07H 15/234

• attached to non-adjacent ring-carbon atoms of the cyclohexane rings, e.g. kanamycins, tobramycins, nebranycin, gentamycin A2{see [C07H15/236K](#)}

U C07H 19/00

**Compounds containing a hetero ring sharing{only}one ring hetero atom with the saccharide radical{the ring-heteroatom of the saccharide radical is not to be taken into consideration}; Nucleosides; Mononucleotides{or mononucleosides}; Anhydro-derivatives thereof{(C07H15/10D2 takes precedence; intermediate for methods of chemical engineering [C07H21/00C4](#) )}**

U C07H 19/02

• sharing nitrogen

- U C07H 19/04      • • Heterocyclic radicals containing only nitrogen atoms as ring hetero atoms{{ **C07H19/02B** , **C07H19/02D** take precedence }}
- C07H 19/056      • • • Triazole or tetrazole radicals; (~~Triazolo-pyrimidines **C07H19/06F**;~~ ~~**C07H19/10F**~~ )
- C07H 19/24      • • Heterocyclic radicals containing oxygen or sulfur as ring hetero atoms{{ **C07H19/02B** , **C07H19/02D** take precedence }}

**Project: N/A (C07K)****C07K 16/00**

**Immunoglobulins [IGs], e.g. monoclonal or polyclonal antibodies**{{ antibodies with enzymatic activity, e.g. abzymes [C12N 9/0002](#) }}

NOTES

Documents characterised by the technical aspects of the construction of an antibody or fragment thereof, should be classified in [C07K 16/00](#) to [C07K 16/065](#) or [C07K 16/46](#) to ~~**C07K16/46D**~~[C07K 16/468](#)

Documents not characterised by the technical aspects of the construction of an antibody or fragment thereof, should be classified only according to their specificity, where necessary accompanied by one or more appropriate indexing codes

**Project: RP0046 (C07K)**

- U C07K 2319/00      Fusion polypeptide**
- D C07K 2319/003      • containing an enzyme part without its signal sequence
- D C07K 2319/006      • • containing an enzyme signal sequence possibly accompanied by part or the whole of the mature enzyme

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

- U C08B 11/00      Preparation of cellulose ethers**{{ rendering cellulose suitable for etherification [C08B 1/06](#) }}
- U C08B 11/02      • Alkyl or cycloalkyl ethers
- U C08B 11/04      • • with substituted hydrocarbon radicals
- U C08B 11/14      • • • with nitrogen-containing groups
- C08B 11/15      • • • with carbamoyl groups,{i.e. -CO-~~NH2~~[NH2](#)}

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

- U C08F 4/00      Polymerisation catalysts**(catalysts in general [B01J](#))

NOTE

1. Group [C08F 4/00](#) and subgroups can be incomplete according to the following classification rules: - if a catalyst is specifically used for only one type of polymer, it is not classified in [C08F 4/00](#) ; - in such a case, the classification symbol of [C08F 4/00](#) providing for the catalyst may be used as a symbol for a C-Set in the groups providing for the polymer, e.g. ( [C08F 12/04](#) , [C08F 4/62](#) ) - this method of classification is applied only when a note after the group providing for the polymer explicitly indicates which symbols of [C08F 4/00](#) may be used for forming the C-set.
2. When classifying in group [C08F 4/00](#) , the type of catalyst can be further indexed by using indexing codes chosen from [C08F 2410/00](#) , [C08F 2420/00](#) or their subgroups

- U C08F 4/06 · Metallic compounds other than hydrides and other than metallo-organic compounds; Boron halide or aluminium halide complexes with organic compounds containing oxygen
- U C08F 4/08 · · of alkali metals
- C08F 4/086 · · · {an alkali metal bound to nitrogen, e.g.  $\text{LiN}(\text{C}_2\text{H}_5\text{C}_2\text{H}_5)_2$ }
- U C08F 4/42 · Metals; Metal hydrides; Metallo-organic compounds; Use thereof as catalyst precursors
- U C08F 4/44 · · selected from light metals, zinc, cadmium, mercury, copper, silver, gold, boron, gallium, indium, thallium, rare earths or actinides
- U C08F 4/60 · · · together with refractory metals, iron group metals, platinum group metals, manganese, rhenium{technetium} or compounds thereof

NOTES

In groups [C08F 4/60](#) to [C08F 4/64](#) , the term "component" comprises the transition metal or a compound thereof, pretreated or not { (pretreating per se [C08F 4/61](#) , [C08F 4/63](#) and [C08F 4/65](#) ) }

Group [C08F 4/60003](#) takes precedence over groups [C08F 4/602](#) to [C08F 4/619](#)

- U C08F 4/619 · · · · Component covered by group [C08F 4/60](#) containing a transition metal-carbon bond [ ( [C08F 4/60003](#) - [C08F 4/60196](#) take precedence ) ]
- C08F 4/61916 · · · · · {supported on a carrier, e.g. silica,  $\text{MgCl}_2\text{MgCl}_2$ , polymer}
- U C08F 4/62 · · · · Refractory metals or compounds thereof

NOTE

Group [C08F 4/62003](#) takes precedence over groups [C08F 4/622](#) to [C08F 4/639](#)

- U C08F 4/639 · · · · · Component covered by group [C08F 4/62](#) containing a transition metal-carbon bond [ ( [C08F 4/62003](#) - [C08F 4/62196](#) take precedence ) ]
- C08F 4/63916 · · · · · · {supported on a carrier, e.g. silica,  $\text{MgCl}_2\text{MgCl}_2$ , polymer}
- U C08F 4/64 · · · · · Titanium, zirconium, hafnium or compounds thereof

NOTE

Group [C08F 4/64003](#) takes precedence over groups [C08F 4/642](#) to [C08F 4/659](#)

- U C08F 4/659 · · · · · · Component covered by group [C08F 4/64](#) containing a transition metal-carbon bond [ ( [C08F 4/64003](#) - [C08F 4/64196](#) take precedence ) ]
- C08F 4/65916 · · · · · · · {supported on a carrier, e.g. silica,  $\text{MgCl}_2\text{MgCl}_2$ , polymer}

**C08F 6/00**

**Post-polymerisation treatments( [C08F 8/00](#) takes precedence; of conjugated diene rubbers [C08C](#) )**

NOTE

1. In groups [C08F 6/00](#) to [C08F 6/28](#) the treatment of specific polymers is indicated using the subdivision of [C08L 23/00](#) to [C08L 57/12](#) in the form of C-Sets. Example: ( [C08F 6/12](#) , [C08L 25/06](#) ) 2. Groups [C08F6/00B](#) [C08F 6/001](#), [C08F6/00D](#) [C08F 6/006](#), [C08F6/00W](#) [C08F 6/008](#), [C08F 6/02](#) , [C08F 6/04](#) take precedence over the other groups.

**C08F 136/00** Homopolymers of compounds having one or more unsaturated aliphatic radicals, at least one having two or more carbon-to-carbon double bonds( [C08F 132/00](#) takes precedence )

NOTE

In [C08F 136/00](#) to [C08F 136/22](#) 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 [C08F 4/00](#) to [C08F 4/60](#) , [C08F 4/62](#) , [C08F 4/64](#) , [C08F 4/642](#) , **[C08F4/642B](#)**[C08F 4/6421](#), [C08F 4/643](#) or [C08F 4/68](#) to [C08F 4/82](#) in the form of C-Sets. Example: ( [C08F 136/18](#) , [C08F 2/26](#) )

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

**U C08G 18/00** Polymeric products of isocyanates or isothiocyanates (preparatory processes of porous or cellular materials, in which the monomers or catalysts are not specific [C08J](#))

- U C08G 18/06 · with compounds having active hydrogen
- U C08G 18/08 · · Processes
- C08G 18/0895 · · · { Manufacture of polymers by continuous processes ([C08G 18/0838](#) takes precedence)}

NOTES

After the symbols [C08G 18/10](#) and [C08G 18/12](#) and separated by a "," sign, are indicated the reactive components of a second or following step by one of the symbols **[C08G18/28D](#)**[C08G 18/2805](#), [C08G 18/30](#) to [C08G 18/38](#), [C08G 18/40](#) to [C08G 18/64](#) without subnotations, [C08G 18/65](#) to [C08G 18/66](#), [C08G 18/70](#) to [C08G 18/80](#)

After the symbols [C08G 18/10](#) and [C08G 18/12](#) and separated by a "," sign are indicated the oligomerisation of isocyanate- or isothiocyanate groups in the prepolymers or in the added reactive components involving reaction of at least a part of the isocyanate- or isothiocyanate groups with each other in the reaction mixture by the symbols [C08G 18/02](#) or [C08G 18/09](#) respectively or by subnotations thereof

- U C08G 18/70 · · characterised by the isocyanates or isothiocyanates used
- U C08G 18/72 · · · Polyisocyanates or polyisothiocyanates
- U C08G 18/80 · · · · Masked polyisocyanates
- U C08G 18/8003 · · · · · {masked with compounds having at least two groups containing active hydrogen}
- U C08G 18/8006 · · · · · · {with compounds of [C08G 18/32](#)}
- C08G 18/8009 · · · · · · · { with compounds of **[C08G18/32A](#)**[C08G 18/3203](#)}
- C08G 18/8038 · · · · · · · { with compounds of **[C08G18/32B](#)**[C08G 18/3225](#)}

**U C08G 2261/00** Macromolecular compounds obtained by reactions forming a carbon-to-carbon link in the main chain of the macromolecule

- U C08G 2261/40 · Polymerisation processes
- C08G 2261/43 · · Chemical oxidative coupling reactions, e.g. with **[FeCl3](#)**[FeCl3](#)

**Project: N/A (C08J)**

**U C08J 5/00** Manufacture of articles or shaped materials containing macromolecular substances( shaping of foodstuffs [A23P](#) ; manufacture of semi-permeable membranes [B01D 67/00](#) to [B01D 71/00](#) ; mechanical features, see the relevant classes, e.g. [B29](#) )

- U C08J 5/20
- Manufacture of shaped of ion-exchange resins [Use of macromolecular compounds as anion [B01J 41/14](#) or cation [B01J 39/20](#) exchangers]
- C08J 5/22
- • Films, membranes, or diaphragms{( ion-exchange in general, [B01J 39/18](#) - [B01J 39/22](#) , [B01J 41/12](#) - [B01J 41/16](#) , [B01J 43/00](#) , [B01J 45/00](#) , [B01J 47/12](#) - [B01J 49/00](#) ; fuel cells with polymeric electrolyte material [H01M 8/1018](#) )}

NOTE

[N: Notes:

1. Membranes of which at least the ion-exchanging parts are inorganic, i.e. mixtures of non polymeric ion exchange compounds, e.g. inorganic salts, and at least one polymer are classified in [C08J 5/22](#) ; membranes based on cellulose are classified in [C08J 5/2212](#) .
2. Methods for incorporating reinforcement supports or filling bodies are classified in [C08J 5/2206](#) (the support or filling body has no ion exchange activity).
3. Groups, e.g. SO<sub>2</sub>F, which do not have ion-exchanging properties, but which may, by simple hydrolysis in an alkaline, neutral or acid medium, be transformed into ion-exchanging groups, e.g. SO<sub>2</sub>H, are considered as such.
4. Ion-exchanging fibrous fabrics are considered as heterogeneous membranes and are classified in [C08J 5/2275](#) ; they include composite membranes, mixtures of two or more (ion exchange) polymers.
5. Membranes obtained by homogeneous melting or from a solution are considered as homogeneous, even if the membrane contains (after solidification of the melt or the solution) heterogeneous elements, e.g. filling bodies, supports e.g. in the form of fabrics, or the like, i.e. the ion exchange resin forms the membrane.
6. Reactions which change the nature of the ion-exchanging groups, introduction of ion-exchanging groups, after-treatment (membrane has already been formed) are classified in ~~C08J5/22D~~[C08J 5/2287](#).
7. Quaternising reactions are not considered as after-treatments.

**U C08J 2203/00****Foams characterized by the expanding agent**

- C08J 2203/04
- ~~N<sub>2</sub>~~N<sub>2</sub> releasing, ex azodicarbonamide or nitroso compound
- U C08J 2203/14
- Saturated hydrocarbons, e.g. butane; Unspecified hydrocarbons
- C08J 2203/142
- • Halogenated saturated hydrocarbons, e.g. ~~H<sub>3</sub>C~~H<sub>3</sub>C-~~CF<sub>3</sub>~~CF<sub>3</sub>
- C08J 2203/144
- • • Perhalogenated saturated hydrocarbons, e.g. ~~F<sub>3</sub>C~~F<sub>3</sub>C-~~CF<sub>3</sub>~~CF<sub>3</sub>
- C08J 2203/146
- • Saturated hydrocarbons containing oxygen and halogen atoms, e.g. ~~F<sub>3</sub>C~~F<sub>3</sub>C-O-~~CH<sub>2</sub>~~CH<sub>2</sub>-~~CH<sub>3</sub>~~CH<sub>3</sub>
- U C08J 2203/16
- Unsaturated hydrocarbons
- C08J 2203/162
- • Halogenated unsaturated hydrocarbons, e.g. ~~H<sub>2</sub>C~~H<sub>2</sub>C=~~CF<sub>2</sub>~~CF<sub>2</sub>
- C08J 2203/164
- • • Perhalogenated unsaturated hydrocarbons, e.g. ~~F<sub>2</sub>C~~F<sub>2</sub>C=~~CF<sub>2</sub>~~CF<sub>2</sub>
- C08J 2203/166
- • Unsaturated hydrocarbons containing oxygen and halogen atoms, e.g. ~~F<sub>3</sub>C~~F<sub>3</sub>C-O-CH=~~CH<sub>2</sub>~~CH<sub>2</sub>

**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

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:

~~C08K5/5445~~ [C08K 5/5445](#) covered by [C08K 5/544](#)

**U C08K 5/00**  
U C08K 5/02  
C08K 5/03  
U C08K 5/49  
U C08K 5/51  
U C08K 5/52  
C08K 5/521

#### Use of organic ingredients

- Halogenated hydrocarbons {([C08K 5/0091](#) takes precedence)}
- • aromatic, {e.g.  $C_6H_5-CH_2CH_2-Cl$ }
- Phosphorus-containing compounds {([C08K 5/0091](#) takes precedence)}
- • Phosphorus bound to oxygen
- • • Phosphorus bound to oxygen only
- • • • Esters of phosphoric acids, e.g. of  $H_3PO_4H_3PO_4$

## 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](#) , [M08L27/1-2](#)[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](#) , [C08L67/02B](#) , [C08L 67/025](#) , [C08L 67/03](#) , [C08L 67/04](#) , [C08L 67/06](#) , [C08L 67/07](#) , [C08L 69/00](#) , [M08L69/OOB](#) , [M08L7-1/00](#)[C08L 71/00](#) , [C08L 75/04](#) , [C08L 77/00](#) , [C08L 77/08](#) , [C08L 77/12](#) , [C08L 79/08](#) , [C08L79/08B](#)[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.

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

##### U C09B 23/00

##### Methine or polymethine dyes, e.g. cyanine dyes

##### U C09B 23/14

• Styryl dyes

##### C09B 23/141

• {Bis styryl dyes containing two radicals  $\text{C}_6\text{H}_5\text{C}_6\text{H}_5\text{-CH=CH-}$ }

##### C09B 23/143

• {the ethylene chain carrying a COOH or a functionally modified derivative, e.g. -CN, -COR, -COOR, -CON=,  $\text{C}_6\text{H}_5\text{C}_6\text{H}_5\text{-CH=C-CN}$ }

##### C09B 23/145

• {the ethylene chain carrying an heterocyclic residue, e.g. heterocycle- $\text{CH=CH-C}_6\text{H}_5$ }

##### C09B 23/148

• {Stilbene dyes containing the moiety  $\text{-C}_6\text{H}_5\text{C}_6\text{H}_5\text{-CH=CH-C}_6\text{H}_5$  (stilbene azo dyes [C09B 29/00](#) )}

##### U C09B 29/00

##### Monoazo dyes prepared by diazotising and coupling

- U C09B 29/0003
  - {from diazotized anilines}
- C09B 29/0007
  - • {containing acid groups, e.g.  $\text{CO}_2\text{H}$ ,  $\text{SO}_3\text{H}$ ,  $\text{PO}_3\text{H}_2$ ,  $\text{OSO}_3\text{H}$ ,  $\text{OPO}_2\text{H}_2$ ; Salts thereof}
- U C09B 29/06
  - from coupling components containing amino as the only directing group
- U C09B 29/08
  - • Amino benzenes
- C09B 29/0801
  - • • {containing acid groups, e.g.  $\text{COOH}$ ,  $\text{SO}_3\text{H}$ ,  $\text{PO}_3\text{H}_2$ ,  $\text{OSO}_3\text{H}$ ,  $\text{OPO}_3\text{H}_2$ ;  $\text{SO}_2\text{NHSO}_2\text{R}$  or salts thereof, R being hydrocarbonyls}
- C09B 29/0803
  - • • • {containing  $\text{SO}_3\text{H}$ ,  $\text{OSO}_3\text{H}$ }
- C09B 29/0804
  - • • • {containing  $\text{PO}_3\text{H}_2$ ,  $\text{OPO}_3\text{H}_2$ }
- C09B 29/0833
  - • • {characterised by the substituent on the benzene ring excepted the substituents:  $\text{CH}_3$ ,  $\text{C}_2\text{H}_5$ , O-alkyl, NHCO-alkyl, NHCOO-alkyl, NHCO- $\text{C}_6\text{H}_5$ , NHCOO- $\text{C}_6\text{H}_5$ }
- C09B 29/0844
  - • • • {substituted by alkyl, e.g.  $\text{CF}_3$ }
- U C09B 29/32
  - from coupling components containing a reactive methylene group
- C09B 29/322
  - • {containing acid groups, e.g.  $\text{COOH}$ ,  $\text{SO}_3\text{H}$ ,  $\text{PO}_3\text{H}_2$ ,  $\text{OSO}_3\text{H}$ ,  $\text{OPO}_2\text{H}_2$ ; Salts thereof}
- U C09B 29/325
  - • {free of acid groups}
- C09B 29/327
  - • • {containing  $\text{NCCH}_2\text{CON-aryl}$ ,  $\text{NCOCH}_2\text{CON-aryl}$ ,  $\text{ROC-CH}_2\text{CON-aryl}$ }
- U C09B 29/33
  - • Aceto- or benzoylacetylarylates
- C09B 29/331
  - • • {containing acid groups, e.g.  $\text{COOH}$ ,  $\text{SO}_3\text{H}$ ,  $\text{PO}_3\text{H}_2$ ,  $\text{OSO}_3\text{H}$ ,  $\text{OPO}_2\text{H}_2$ ; salts thereof}
- U C09B 31/00**
  - Disazo and polyazo dyes of the type A->B->C, A->B->C->D, or the like, prepared by diazotising and coupling**
- U C09B 31/02
  - Disazo dyes
- C09B 31/025
  - • {containing acid groups, e.g.  $-\text{COOH}$ ,  $-\text{SO}_3\text{H}$ ,  $-\text{PO}_3\text{H}_2$ ,  $-\text{OSO}_3\text{H}$ ,  $-\text{OPO}_2\text{H}_2$ ; Salts thereof}
- U C09B 31/04
  - • from a coupling component "C" containing a directive amino group
- C09B 31/041
  - • • {containing acid groups, e.g.  $-\text{CO}_2\text{H}$ ,  $-\text{SO}_3\text{H}$ ,  $-\text{PO}_3\text{H}_2$ ,  $-\text{OSO}_3\text{H}$ ,  $-\text{OPO}_2\text{H}_2$ ; Salts thereof}
- U C09B 31/043
  - • • Amino-benzenes
- C09B 31/047
  - • • • containing acid groups, e.g.  $-\text{CO}_2\text{H}$ ,  $-\text{SO}_3\text{H}$ ,  $-\text{PO}_3\text{H}_2$ ,  $-\text{OSO}_3\text{H}$ ,  $-\text{OPO}_2\text{H}_2$ ; Salts thereof
- U C09B 31/053
  - • • Amino naphthalenes
- C09B 31/057
  - • • • containing acid groups, e.g.  $-\text{CO}_2\text{H}$ ,  $-\text{SO}_3\text{H}$ ,  $-\text{PO}_3\text{H}_2$ ,  $-\text{OSO}_3\text{H}$ ,  $-\text{OPO}_2\text{H}_2$ ; Salts thereof
- U C09B 31/06
  - • from a coupling component "C" containing a directive hydroxyl group
- C09B 31/061
  - • • {containing acid groups, e.g.  $-\text{CO}_2\text{H}$ ,  $-\text{SO}_3\text{H}$ ,  $-\text{PO}_3\text{H}_2$ ,  $-\text{OSO}_3\text{H}$ ,  $-\text{OPO}_2\text{H}_2$ ; Salts thereof}
- U C09B 31/062
  - • • Phenols
- C09B 31/065
  - • • • containing acid groups, e.g.  $-\text{CO}_2\text{H}$ ,  $-\text{SO}_3\text{H}$ ,  $-\text{PO}_3\text{H}_2$ ,  $-\text{OSO}_3\text{H}$ ,  $-\text{OPO}_2\text{H}_2$ ; Salts thereof
- U C09B 31/068
  - • • Naphthols
- C09B 31/072
  - • • • {containing acid groups, e.g.  $-\text{CO}_2\text{H}$ ,  $-\text{SO}_3\text{H}$ ,  $-\text{PO}_3\text{H}_2$ ,  $-\text{OSO}_3\text{H}$ ,  $-\text{OPO}_2\text{H}_2$ ; Salts thereof}

- U C09B 31/075 . . . ortho-Hydroxy carboxylic acid amides  
C09B 31/078 . . . . containing acid groups, e.g. -COOH, -SO<sub>3</sub>H, -PO<sub>3</sub>H<sub>2</sub>, -OSO<sub>3</sub>H, -OPO<sub>2</sub>H<sub>2</sub>; Salts thereof
- U C09B 31/10 . . from a coupling component "C" containing reactive methylene groups  
C09B 31/105 . . . {containing acid groups, e.g. -CO<sub>2</sub>H, -SO<sub>3</sub>H, -PO<sub>3</sub>H<sub>2</sub>, -OSO<sub>3</sub>H, -OPO<sub>2</sub>H<sub>2</sub>; Salts thereof}
- U C09B 31/11 . . . Aceto- or benzoyl-acetylarylates  
C09B 31/115 . . . . {containing acid groups, e.g. -COOH, -SO<sub>3</sub>H, -PO<sub>3</sub>H<sub>2</sub>, -OSO<sub>3</sub>H, -OPO<sub>2</sub>H<sub>2</sub>; salts thereof}
- U C09B 43/00 Preparation of azo dyes from other azo compounds**
- U C09B 43/12 . by acylation of amino groups
- U C09B 43/124 . . with monocarboxylic acids, carbamic esters of halides, mono- isocyanates, or haloformic acid esters  
C09B 43/1247 . . . {with formation of NHSO<sub>2</sub>R or NHSO<sub>3</sub>H radicals}
- U C09B 43/18 . by acylation of hydroxyl group{or of mercapto group;( OPO<sub>3</sub>H<sub>2</sub> and OP(X) (XR)<sub>2</sub> with X=O,S,NH and R being hydrocarbon, C09B 69/007 )}
- C09B 43/24 . . with formation of -O-SO<sub>2</sub>-R or -O-SO<sub>3</sub>H radicals  
C09B 43/30 . by esterification of -COOH or -SO<sub>3</sub>H groups
- U C09B 43/40 . by substituting hetero atoms by radicals containing other hetero atoms  
C09B 43/405 . . {by substituting radicals containing hetero atoms for -SO<sub>2</sub>-R radicals and R being hydrocarbon}
- U C09B 47/00 Porphines; Azaporphines{ non-dyeing compounds C07D 487/22 }**
- U C09B 47/04 . Phthalocyanines{abbreviation: Pc}
- U C09B 47/06 . . Preparation from carboxylic acids or derivatives thereof,{e.g. anhydrides, amides, mononitriles, phthalimide, o-cyanobenzamide}  
C09B 47/065 . . . {having -COOH or -SO<sub>3</sub>H radicals or derivatives thereof, directly linked to the skeleton}
- U C09B 47/067 . . . from phthalodinitriles{naphthalenedinitriles, aromatic dinitriles prepared in situ, hydrogenated phthalodinitrile}  
C09B 47/0678 . . . . {having-COOH or -SO<sub>3</sub>H radicals or derivatives thereof directly linked to the skeleton}
- U C09B 47/08 . . Preparation from other phthalocyanine compounds,{e.g. cobaltphthalocyanineamine complex}  
C09B 47/24 . . . Obtaining compounds having -COOH or -SO<sub>3</sub>H radicals, or derivatives thereof, directly bound to the phthalocyanine radical  
C09B 47/28 . . Phthalocyanine dyes containing -S-SO<sub>3</sub>H radicals
- U C09B 67/00 Influencing the physical, e.g. the dyeing or printing properties of dyestuffs without chemical reactions, e.g. by treating with solvents{grinding or grinding assistants, coating of pigments or dyes}; Process features in the making of dyestuff preparations; Dyestuff preparations of a special physical nature, e.g. tablets, films**
- U C09B 67/0001 . {Post-treatment of organic pigments or dyes}  
C09B 67/0017 . . {Influencing the physical properties by treatment with an acid, H<sub>2</sub>SO<sub>4</sub>}

**Project: N/A (C09C)**

- U C09C 1/00 Treatment of specific inorganic materials other than fibrous fillers (luminescent or tenebrescent materials C09K); Preparation of carbon black**

- U C09C 1/28      • Compounds of silicon {([C09C 1/0009](#), [C09C 1/0015](#), [C09C 1/0078](#) take precedence)}
- C09C 1/30      • • Silicic acid
- NOTES**  
Combinations of treatment steps, characterised by the sequence or the nature of two or more individual steps, are classified in **C09C1/30P** [C09C 1/309](#).
- The individual steps are classified with symbols chosen from groups [C09C 1/3009](#) to [C09C 1/3081](#).
- U C09C 1/36      • Compounds of titanium {([C09C 1/0009](#), [C09C 1/0015](#), [C09C 1/0078](#) take precedence)}
- C09C 1/3607    • • { Titanium dioxide}
- NOTES**  
Combinations of treatment steps, characterised by the sequence or the nature of two or more individual steps, are classified in **C09C1/36P** [C09C 1/3692](#).
- The individual steps are classified with symbols chosen from groups [C09C 1/3615](#) to [C09C 1/3684](#).
- U C09C 2200/00      Compositional and structural details of pigments exhibiting interference colours**
- NOTE**  
When indexing codes [C09C 2200/00](#) to [C09C 2220/20](#) are used, no codes are given for the particle morphology according to the indexing codes [C01P 2004/10](#) to [C01P 2004/42](#) or [C01P 2004/80](#) to [C01P 2004/88](#)
- U C09C 2200/40      • Interference pigments comprising an outermost surface coating
- U C09C 2200/402    • • Organic protective coating
- U C09C 2200/403    • • • Low molecular weight materials, e.g. fatty acids
- C09C 2200/404    • • • • comprising additional functional groups, e.g.  $-\text{NH}_2\text{NH}_2$ ,  $-\text{C}=\text{C}-$  or  $-\text{SO}_3\text{SO}_3$
- U C09C 2200/405    • • • High molecular weight materials, e.g. polymers
- C09C 2200/406    • • • • comprising additional functional groups e.g.  $-\text{NH}_2\text{NH}_2$ ,  $-\text{C}=\text{C}-$  or  $-\text{SO}_3\text{SO}_3$
- U C09C 2200/407    • • • Organosilicon materials, e.g. silanes, silicones
- C09C 2200/408    • • • • comprising additional functional groups, e.g.  $-\text{NH}_2\text{NH}_2$ ,  $-\text{C}=\text{C}-$  or  $-\text{SO}_3\text{SO}_3$

## Project: N/A (C09D)

## C09D

COATING COMPOSITIONS, e.g. PAINTS, VARNISHES OR LACQUERS; FILLING PASTES; CHEMICAL PAINT OR INK REMOVERS; INKS; CORRECTING FLUIDS; WOODSTAINS; PASTES OR SOLIDS FOR COLOURING OR PRINTING; USE OF MATERIALS THEREFOR( cosmetics [A61K](#) ; processes for applying liquids or other fluent materials to surfaces, in general, [B05D](#) ; staining wood [B27K 5/02](#) ; glazes or vitreous enamels [C03C](#) ; organic macromolecular compounds [C08](#) ; organic dyes or closely-related compounds for producing dyes, mordants or lakes, per se , [C09B](#) ; treatment of inorganic materials other than fibrous fillers used as pigments or fillers [C09C](#) ; natural resins, French polish, drying-oils, driers, turpentine, per se , [C09F](#) ; polishing compositions other than French polish, ski waxes [C09G](#) ; preparation of glue or gelatine [C09H](#), { [C08H 1/06](#) } ; adhesives or use of materials as adhesives [C09J](#) ; materials for sealing or packing joints or covers [C09K 3/10](#) ; materials for stopping leaks [C09K 3/12](#) ; processes for the electrolytic or electrophoretic production of coatings [C25D](#) ; textile-treating compositions [D06](#) ; paper-making [D21](#) ; conductors, insulators [H01B](#) )

## NOTES

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

- "use of materials for coating compositions" means the use of known or new polymers or products;
- "rubber" includes:
  - a) natural or conjugated diene rubbers;
  - b) rubber in general (for a specific rubber, other than a natural rubber or a conjugated diene rubber, see the group provided for coating compositions based on such macromolecular compounds);
- "based on" is defined by means of Note 3, below;
- "filling pastes" means materials used to fill up the holes or cavities of a substrate in order to smooth its surface prior to coating.

In this subclass, coating compositions containing specific macromolecular substances are classified only according to the macromolecular substance, non-macromolecular substances not being taken into account.

Example: a coating composition containing polyethene and amino-propyltrimethoxysilane is classified in group [C09D 123/06](#) .

However, coating compositions containing combinations of organic non-macromolecular compounds having at least one polymerisable carbon-to-carbon unsaturated bond with prepolymers or polymers other than unsaturated polymers of groups [C09D 159/00](#) to [C09D 187/00](#) are classified according to the unsaturated non-macromolecular component in group [C09D 4/00](#) .

Example: a coating composition containing polyethene and styrene monomer is classified in group [C09D 4/06](#) .

Aspects relating to the physical nature of the coating compositions or to the effects produced, as defined in group [C09D 5/00](#) , if clearly and explicitly stated, are also classified in this subclass.

Coating compositions characterised by other features, e.g. additives, are classified in group [C09D 7/00](#) , unless the macromolecular constituent is specified.

In this subclass, coating compositions comprising two or more macromolecular constituents are classified according to the macromolecular constituent or constituents present in the highest proportion, i.e. the constituent on which the composition is based. If the composition is based on two or more constituents,

present in equal proportions, the composition is classified according to each of these constituents.

Examples:

A coating composition containing 80 parts of polyethylene and 20 parts of polyvinylchloride is classified in group [C09D 123/06](#) ;

A coating composition containing 40 parts of polyethylene and 40 parts of polyvinylchloride is classified in groups [C09D 123/06](#) and [C09D 127/06](#) .

Documents classified up until 04.2012: after the notation of group [C09D 4/06](#) , and separated therefrom by a + sign, notations concerning the macromolecular compound may be added. The notations are selected from the main groups [C08F 251/00](#) to [C08F 291/00](#) and from the subgroups of [C08F 290/00](#) to [C08F 290/048](#) and [C08F 290/08](#) to [C08F 290/128](#) .

Example: a paint based on a mixture of methylmethacrylate monomer and a polymer of vinylchloride is classified in [C09D 4/06](#) + [C08F 259/04](#) .

From April 2012 onwards, after the notation [C09D 4/00](#) , classification concerning the monomer may be added, in the form of C-sets. The notation is selected from [C08F 210/00](#) to [C08F 246/00](#) , [C08G 77/00](#) to [C08G 77/04](#) or [C08G 77/20](#) to [C08G 77/30](#) . Ex.: A paint based on a mixture of methylmethacrylate monomer and a polymer of vinylchloride is classified ( [C09D 4/06](#) , [C08F 259/04](#) ) .

Documents classified up until 09-2003: Classification is given in the form of C-Sets. The polymer in majority is given a [C09D 101/00](#) - [C09D 201/10](#) 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](#) , [C08L67/02B](#) [C08L 67/025](#) , [C08L 67/03](#) , [C08L 67/04](#) , [C08L 67/06](#) , [C08L 67/07](#) , [C08L 69/00](#) , [C08L69/00B](#) [C08L 69/005](#) , [C08L 71/00](#) , [C08L 75/04](#) , [C08L 77/00](#) , [C08L 77/08](#) , [C08L 77/12](#) , [C08L 79/08](#) , [C08L79/08B](#) [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 [C09D 123/00](#) - [C09D 123/36](#) , [C09D 145/00](#) - [C09D 145/02](#) and [C09D 149/00](#) have all been reclassified following Note 3 below. An additive is classified in the last appropriate place in the list as selected for each [C09D](#) group.

Examples: a. A coating composition based on a polyamide and a graft polymer is classified in ( [C09D 177/00](#) , [C08L 2666/24](#) ). b. A coating composition based on polyvinylchloride and containing CaCO<sub>3</sub> is classified according to note 4 of [C08K](#) , i.e. in [C08K 3/26](#) and [C09D 127/06](#) . If this coating composition contains also a polyamide, then the classification will be

( [C09D 127/06](#) , [C08L 77/00](#) , [C08K 3/26](#) ). c. A coating composition based on a polysiloxane ( [C09D 183/04](#) ) and containing a second polysiloxane, a phenol and silica is classified in ( [C09D 183/04](#) , [C08L 83/04](#) , [C08L 2666/34](#) , [C08L 2666/54](#) ).

From 01.09.2003 until April 2012: Classification is given in the form of C-Sets. The polymer in majority is given a [C09D](#) symbol, 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 indexing codes in the C-Sets: [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 coating of 60 parts polyvinylchloride ( [C09D 127/06](#) ) and 40 parts polyamide is classified in ( [C09D 127/06](#) , [C08L 2666/20](#) ), [C08L 77/00](#) . b. A coating of 50 parts polyvinylchloride ( [C09D 127/06](#) ) and 50 parts polyamide ( [C09D 177/00](#) ) is classified in ( [C09D 127/06](#) , [C08L 2666/20](#) ), and [C08L 77/00](#) , as well as ( [C09D 177/00](#) , [C08L 2666/04](#) ) and [C08L 27/06](#) . c. A coating 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](#) , [C09D 127/06](#) . If this composition contains also a polyamide, then the classification will be ( [C09D 127/06](#) , [C08L 2666/20](#) ) and [C08K 3/26](#) .

d. A composition based on a first polysiloxane ( [C09D 183/04](#) ) and containing a second polysiloxane, a phenol and silica is classified in ( [C09D 183/04](#) , [C08L 83/00](#) , [C08K 5/13](#) , [C08K 3/36](#) ) and [C08L 2205/02](#) .

From April 2012 onwards, after the notation of groups [C09D 101/00](#) to [C09D 201/00](#) , notations concerning the other constituents of the coating 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 coating composition containing polyethylene and amino-propyltrimethoxysilane is classified in groups [C09D 123/06](#) and [C08K 5/544](#) (unlinked).

b. A coating composition containing 80 parts of polyethylene and 20 parts of polyvinylchloride is classified in ( [C09D 123/06](#) , [C08L 27/06](#) ). c. A coating composition containing 40 parts of polyethylene and 40 parts of polyvinylchloride is classified in ( [C09D 123/06](#) , [C08L 27/06](#) ) and ( [C09D 127/06](#) , [C08L 23/06](#) ). d. A coating composition containing 90% of polysiloxane ( [C09D 183/04](#) ) further containing 10% of polyester ( [C08L 67/00](#) ) and an alcohol is classified in ( [C09D 183/04](#) , [C08L 67/00](#) , [C08K 5/05](#) ).

#### 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:

[C09D 4/02](#) covered by [C09D 4/00](#)  
, [C08F 220/00](#)  
[C09D 4/04](#) covered by [C09D 4/00](#)  
, [C08F 222/00](#)  
[C09D 5/23](#) covered by  
[H01F 41/16](#)  
[C09D 5/25](#) covered by  
[H01B 3/308](#)  
[C09D 5/33](#) covered by  
[C09D 5/004](#)  
[C09D 5/46](#) covered by  
[C09D 5/03](#)  
[C09D 161/08](#) , [C09D 161/10](#)  
covered by [C09D 161/06](#)

[C09D 163/02](#) covered by  
[C09D 163/00](#)  
[C09D 171/08](#) covered by  
[C09D 171/02](#)  
[C09D 171/10](#) covered by  
[C09D 171/12](#)  
[C09D 183/05](#) covered by  
[C09D 183/04](#)  
[C09D 183/07](#) covered by [C09D 183/04](#)  
, [C09D 183/06](#)

- U C09D 17/00 Pigment pastes, e.g. for mixing in paints( artists` paints [C09D 5/06](#) )**
- C09D 17/001 · {in aqueous medium( ~~C09D17/00H~~[C09D 17/003](#), [C09D 17/004](#) take precedence )}
- C09D 17/002 · {in organic medium( ~~C09D17/00H~~[C09D 17/003](#), [C09D 17/004](#) take precedence )}

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

**C09J**

**ADHESIVES; NON-MECHANICAL ASPECTS OF ADHESIVE PROCESSES IN GENERAL; ADHESIVE PROCESSES NOT PROVIDED FOR ELSEWHERE; USE OF MATERIALS AS ADHESIVES( surgical adhesives [A61L 24/00](#) ; processes for applying liquids or other fluent materials to surfaces in general [B05D](#); adhesives on the basis of non specified organic macromolecular compounds used as bonding agents in layered products [B32B](#); organic labelling fabrics or comparable materials or articles with deformable surface using adhesives and thermo-activatable adhesives respectively [B65C 5/02](#) , [B65C 5/04](#) ; organic macromolecular compounds [C08](#); production of multi-layer textile fabrics [D06M 17/00](#) ; preparation of glue or gelatine [C09H](#) ; adhesive labels, tag tickets or similar identification of indication means [G09F 3/10](#) )**

**NOTES**

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

- "use of materials as adhesives" means the use of known or new polymers or products;
- "rubber" includes:
  - a) natural or conjugated diene rubbers;
  - b) rubber in general (for a specific rubber, other than a natural rubber or a conjugated diene rubber, see the group provided for adhesives based on such macromolecular compounds);
- "based on" is defined by means of Note 3, below.

In this subclass, adhesives containing specific macromolecular substances are classified only according to the macromolecular substance, non-macromolecular substances not being taken into account.

Example: an adhesive containing polyethene and amino-propyltrimethoxysilane is classified in group [C09J 123/06](#) .

However, adhesives containing combinations of organic non-macromolecular compounds having at least one polymerisable carbon-to-carbon unsaturated bond with prepolymers or polymers other than unsaturated polymers of groups [C09J 159/00](#) to [C09J 187/00](#) are classified according to the unsaturated non-macromolecular component in group [C09J 4/00](#) .

Example: an adhesive containing polyethene and styrene monomer is classified in group [C09J 4/06](#) .

Aspects relating to the physical nature of the adhesives or to the effects produced, as defined in group [C09J 9/00](#), if clearly and explicitly stated, are also classified in this subclass. Adhesives characterised by other features, e.g. additives, are classified in group [C09J 11/00](#), unless the macromolecular constituent is specified.

In this subclass, adhesives comprising two or more macromolecular constituents are classified according to the macromolecular constituent or constituents present in the highest proportion, i.e. the constituent on which the adhesive is based. If the adhesive is based on two or more constituents, present in equal proportions, the adhesive is classified according to each of these constituents.

Examples: An adhesive containing 80 parts of polyethene and 20 parts of polyvinylchloride

is classified in group [C09J 123/06](#) ;

An adhesive containing 40 parts of polyethene and 40 parts of polyvinylchloride is

classified in groups [C09J 123/06](#) and [C09J 127/06](#).

An adhesive composition containing polyethylene and amino-propyltrimethoxysilane is classified in groups [C09J 123/06](#) and [C08K 5/544](#)

Documents classified up until 09-2003: Classification is given in the form of C-Sets. The polymer in majority is given a [C09J 101/00](#) - [C09J 201/10](#) 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](#)

, **[C08L67/02B](#)**[C08L 67/025](#), [C08L 67/03](#), [C08L 67/04](#), [C08L 67/06](#)

, [C08L 67/07](#), [C08L 69/00](#), **[C08L69/00B](#)**[C08L 69/005](#), [C08L 71/00](#)

, [C08L 75/04](#), [C08L 77/00](#), [C08L 77/08](#), [C08L 77/12](#), [C08L 79/08](#),

**[C08L79/08B](#)**[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](#). An additive is

classified in the last appropriate place in the list as selected for each [C09J](#) group. Examples:

a. An adhesive composition based on a polyamide and a graft polymer is classified in ([C09J 177/00](#),

[C08L 2666/24](#)).

b. An adhesive composition based on polyvinylchloride and containing CaCO<sub>3</sub> is classified

according to note 4 of [C08K](#), i.e. in [C08K 3/26](#)

and [C09J 127/06](#). If this adhesive composition

contains also a polyamide, then the classification will be

([C09J 127/06](#), [C08L 77/00](#),

[C08K 3/26](#)).

c. An adhesive composition based on a polysiloxane ([C09J 183/04](#)) and containing

a second polysiloxane, a phenol and silica is classified in

([C09J 183/04](#), [C08L 83/04](#),

[C08L 2666/34](#), [C08L 2666/54](#)).

3. From April 2012, after the notation

[C09J 4/00](#), classification concerning the monomer

may be added, in the form of C-sets. The notation is

selected from [C08F 210/00](#) to [C08F 246/00](#)

, [C08G 77/00](#) to [C08G 77/04](#) or

[C08G 77/20](#) to [C08G 77/30](#). Ex. 1: An

adhesive based on methylmethacrylate monomer is classified in

([C09J 4/00](#), [C08F 220/00](#)).

Ex. 2: An adhesive based on a dialkoxysilane monomer compound is

classified in ([C09J 4/00](#), [C08G 77/04](#)).

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**[C08K](#) and they are linked or unlinked. The polymer in majority is always first in the C-set. List of indexing codes in the C-Sets: [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. An adhesive blend of 60 parts polyvinylchloride ( [C09J 127/06](#) ) and 40 parts polyamide is classified in ( [C09J 127/06](#) , [C08L 2666/20](#) ), [C08L 77/00](#) . b. An adhesive blend of 50 parts polyvinylchloride ( [C09J 127/06](#) ) and 50 parts polyamide ( [C09J 177/00](#) ) is classified in ( [C09J 127/06](#) , [C08L 2666/20](#) ), ( [C09J 177/00](#) , [C08L 2666/04](#) ), [C08L 77/00](#) and [C08L 27/06](#) . c. An adhesive 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](#) , [C09J 127/06](#) . If this composition contains also a polyamide, then the classification will be ( [C09J 127/06](#) , [C08L 2666/20](#) ) and [C08K 3/26](#) . d. A composition based on a first polysiloxane ( [C09J 183/04](#) ) and containing a second polysiloxane, a phenol and silica is classified in ( [C09J 183/04](#) , [C08L 83/00](#) , [C08K 5/13](#) , [C08K 3/36](#) ) and [C08L 2205/02](#) .

From April 2012 onwards, after the notation of groups [C09J 101/00](#) to [C09J 201/00](#) , notations concerning the other constituents of the adhesive 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 101/16](#) are linked. - [C08L 2201/00](#) - [C08L 2555/86](#) are unlinked. The polymer in majority is always first in the C-set.

Examples:

a. An adhesive composition containing polyethylene and amino-propyltrimethoxysilane is classified in groups [C09J 123/06](#) and [C08K 5/544](#) (unlinked). b. An adhesive containing 80 parts of polyethene and 20 parts of polyvinylchloride is classified in group ( [C09J 123/06](#) , [C08L 27/06](#) ). c. An adhesive containing 40 parts of polyethene and 40 parts of polyvinylchloride is classified in groups ( [C09J 123/06](#) , [C08L 27/06](#) ) and ( [C09J 127/06](#) , [C08L 23/06](#) ). d. An adhesive containing 90% of polysiloxane ( [C09J 183/04](#) ) further containing of polyester ( [C08L 67/00](#) ) and an alcohol is classified in ( [C09J 183/04](#) , [C08L 67/00](#) , [C08K 5/05](#) ).

#### WARNING

The following IPC group is not used in the CPC system: Subject matter covered by these groups is classified in the following CPC group: [C09J 163/02](#) covered by [C09J 163/00](#)

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

**WARNING**

Groups [C09K 11/0805](#) to ~~C09K11/08L~~[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](#)

**U 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~~ }, 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](#) .

- U C09K 19/04
- characterised by the chemical structure of the liquid crystal components, {e.g. by a specific unit}
- U C09K 2019/0444
- {characterized by a linking chain between rings or ring systems, a bridging chain between extensive mesogenic moieties or an end chain group}
- C09K 2019/0451
- • {the end chain group being a  $\text{CH}_3\text{CHCH}_3\text{CH}=\text{CHCH}_2\text{CH}_2\text{CHCH}_2\text{CH}_2$ - chain}
- C09K 2019/0455
- • {the linking chain being a  $-\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2-$  ,  $-\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2-$  or  $-\text{CH}_2\text{CF}_2\text{CF}_2\text{CH}_2\text{CH}_2\text{CF}_2\text{CF}_2\text{CH}_2$ - chain}
- C09K 2019/0462
- • {the linking chain being a  $-\text{CF}_2\text{CF}_2\text{O}\text{CF}_2\text{CF}_2\text{O}-$  chain}
- C09K 2019/0466
- • {the linking chain being a  $-\text{CF}_2\text{O}\text{CF}_2\text{O}-$  chain}
- C09K 2019/047
- • {the linking chain being a  $-\text{CH}_2\text{CF}_2\text{O}\text{CH}_2\text{CF}_2\text{O}-$  chain}
- U C09K 19/06
- Non-steroidal liquid crystal compounds
- U C09K 19/08
- • containing at least two non-condensed rings
- U C09K 19/10
- • • containing at least two benzene rings
- U C09K 19/20
- • • • linked by a chain containing carbon and oxygen atoms as chain links, e.g. esters{or ethers}
- U C09K 19/2007
- • • • • {the chain containing -COO- or -OCO- groups}
- U C09K 19/2021
- • • • • {Compounds containing at least one asymmetric carbon atom}
- C09K 19/2028
- • • • • • {containing additionally a linking group other than -COO- or -OCO-, e.g.  $-\text{CH}_2\text{CH}_2-\text{CH}_2\text{CH}_2-$ ,  $-\text{CH}=\text{CH}-$ ,  $-\text{C}=\text{C}-$ ; containing at least one additional carbon atom in the chain containing -COO- or -OCO- groups, e.g.  $-\text{COO}-\text{CH}^*-\text{CH}_3$ }

**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)**
- C10K 1/001 · { working-up the condensates (recovering of  $\text{NH}_3/\text{NH}_3$  and  $\text{NH}_4/\text{NH}_4$  salts C01C 1/00; working-up or purifying tars and tar-oils C10C 1/00)}
- U C10K 1/08 · by washing with liquids; Reviving the used wash liquors (gas washers B01D)
- U C10K 1/10 · · with aqueous liquids {alkaline reacting aqueous liquids C10K 1/12}
- C10K 1/103 · · · {alkali- or earth-alkali- or  $\text{NH}_4/\text{NH}_4$  salts or inorganic acids derived from sulfur}
- U C10K 1/12 · · · alkaline-reacting {including the revival of the used wash liquors}
- C10K 1/121 · · · · {containing  $\text{NH}_3/\text{NH}_3$  only (possibly in combination with  $\text{NH}_4/\text{NH}_4$  salts)}
- C10K 1/123 · · · · {containing alkali-, earth-alkali- or  $\text{NH}_4/\text{NH}_4$  salts of inorganic acids derived from sulfur}
- U C10K 1/14 · · · · organic
- U C10K 1/143 · · · · · {containing amino groups}
- C10K 1/146 · · · · · {alkali-, earth-alkali- or  $\text{NH}_4/\text{NH}_4$  salts}

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

- U C10L 1/00 Liquid carbonaceous fuels**
- U C10L 1/10 · containing additives
- U C10L 1/12 · · inorganic compounds
- C10L 1/1266 · · · {nitrogen containing compounds, (e.g.  $\text{NH}_3/\text{NH}_3$ )}
- 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 -C10L1/30B2 C10L 1/308 and corresponding C10L 1/10 -C10L1/30B2 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 (C11D)**

**C11D DETERGENT COMPOSITIONS (preparations specially adapted for washing the hair A61K7/075; preparations specially adapted for washing the hair A61Q 5/02, A61K 8/00; methods or apparatus for disinfection or sterilisation A61L; special washing compositions for cleaning semi-permeable membranes B01D 65/06); USE OF SINGLE SUBSTANCES AS DETERGENTS; SOAP OR SOAP-MAKING; RESIN SOAPS; RECOVERY OF GLYCEROL**

**NOTE**

Documents classified in groups C11D 1/37, C11D 1/645 to C11D 1/655, C11D 1/825 to C11D 1/86, C11D 1/94 to C11D 1/945 and C11D 10/00 to C11D10/06, are indexed using codes chosen from C11D 1/00 to C11D 1/92 to provide information on the individual ingredients on the compositions

**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:

C11D 1/68 covered by C11D 3/2003  
 C11D 1/70 covered by C11D 3/2003  
 C11D 3/44 covered by C11D 3/43

C11D 3/46	covered by	<a href="#">C11D 3/2079</a> , <a href="#">C11D 9/48</a>
C11D 3/60	covered by	<a href="#">C11D 3/00</a>
C11D 7/18	covered by	<a href="#">C11D 3/39</a>
C11D 7/38	covered by	<a href="#">C11D 3/39</a>
C11D 7/42	covered by	<a href="#">C11D 3/386</a>
C11D 7/52	covered by	<a href="#">C11D 7/50</a>
C11D 7/54	covered by	<a href="#">C11D 3/395</a>
C11D 7/56	covered by	<a href="#">C11D 3/395</a>
C11D 7/60	covered by	<a href="#">C11D 7/00</a>
<a href="#">C11D 9/20</a>	covered by	partly covered by <a href="#">C11D 9/444</a>
C11D 9/50	covered by	<a href="#">C11D 3/48</a>
C11D 9/60	covered by	<a href="#">C11D 9/00</a>
C11D 10/02	covered by	<a href="#">C11D 3/00</a>
C11D 10/06	covered by	<a href="#">C11D 9/00</a>

**Project: N/A (C12M)**

**C12M**

**APPARATUS FOR ENZYMOLOGY OR MICROBIOLOGY; { APPARATUS FOR CULTURING MICROORGANISMS FOR PRODUCING BIOMASS, FOR GROWING CELLS OR FOR OBTAINING FERMENTATION OR METABOLIC PRODUCTS, i.e. BIOREACTORS OR FERMENTERS}**

NOTE

In this subclass the term microorganism includes prokaryotic and eukaryotic cells. Viruses, human, animal or plant cells, protozoa, tissues and unicellular algae are considered microorganisms.

When classifying an apparatus according to its use in group [C12M 21/00](#), classification should also be given in at least one of the groups [C12M 23/00-C12M 99/00](#).

This subclass covers apparatus or devices for the fermentation or for growing microorganisms or animal tissues of both laboratory and industrial scale, i.e. bioreactors.

This subclass covers also apparatus or devices for the pre-treatment or after-treatment of the biomass or microorganisms to be cultured or that have been cultured.

This subclass does not cover the methods or processes taking place in the bioreactors that are not based on the use of the parts of the apparatus.

This subclass does not cover:

apparatus for culturing plant tissue, which are covered by **A01H4/00B** [A01H 4/001](#);

apparatus for preservation of living parts of bodies of humans or animals, which are covered by [A01N 1/0242](#);

apparatus or devices for testing sterility conditions not linked to a bioreactor or fermenter growing biomass, which are covered by [A61L 2/00](#), **G01N31/22F** [G01N 31/226](#);

apparatus for biological treatment of water, waste water, sewage or sludge, which are covered by [C02F 3/00](#), [C02F 11/00](#);

apparatus for brewing of beer, which are covered by [C12C](#);

apparatus for production of wine or vinegar, which are covered by [C12G](#), [C12J 1/10](#);

apparatus or devices for DNA and RNA technology, which are covered by [B01L 7/52](#), **B01J19/00C** [B01J 19/0046](#), **C12N15/10A** [C12N 15/1003](#);

fermentation processes, which are covered by [C12P](#);

apparatus for bioleaching of ores, which are covered by [C22B 3/18](#);

removing cellulose from cellulosic substances, which is covered by [D21C](#);

apparatus or devices for sampling, detection, investigation or analysis of microorganisms or biosensors, which are covered by [G01N 33/48](#);

apparatus for automatic analysis not linked to a bioreactor or fermenter growing biomass, which are covered by [G01N 35/00](#);  
testing or evaluating the effect of a chemical or biological compound involving human or animal cells, which are covered by [G01N33/50D](#) [G01N 33/5005](#);  
apparatus for immunological test processes, which are covered by [G01N33/53B](#) [G01N 33/5302](#).

#### WARNING

Groups [C12M 21/00](#) to [C12M 99/00](#) do not correspond to former or current IPC groups.

Concordance CPC : IPC for these groups is as follows:

- [C12M 21/00](#) : [C12M 1/00](#) - [C12M 21/02](#) : [C12M 1/00](#) - [C12M 21/04](#)
- : [C12M 1/107](#) - [C12M 21/06](#) : [C12M 3/00](#) - [C12M 21/08](#) : [C12M 3/00](#)
- [C12M 21/10](#) : [C12M 3/10](#) - [C12M 21/12](#) : [C12M 1/00](#) - [C12M 21/14](#)
- : [C12M 1/00](#) - [C12M 21/16](#) : [C12M 1/16](#) - [C12M 21/18](#) : [C12M 1/40](#)
- [C12M 23/00](#) : [C12M 1/00](#) - [C12M 23/02](#) : [C12M 1/00](#) - [C12M 23/04](#)
- : [C12M 1/12](#) - [C12M 23/06](#) : [C12M 1/12](#) - [C12M 23/08](#) : [C12M 1/24](#)
- [C12M 23/10](#) : [C12M 1/22](#) - [C12M 23/12](#) : [C12M 1/32](#) - [C12M 23/14](#)
- : [C12M 1/00](#) - [C12M 23/16](#) : [C12M 3/06](#) - [C12M 23/18](#) : [C12M 1/00](#)
- [C12M 23/20](#) : [C12M 1/00](#) - [C12M 23/22](#) : [C12M 1/00](#) - [C12M 23/24](#)
- : [C12M 1/04](#) - [C12M 23/26](#) : [C12M 1/00](#) - [C12M 23/28](#) : [C12M 1/00](#)
- [C12M 23/30](#) : [C12M 1/00](#) - [C12M 23/32](#) : [C12M 1/00](#) - [C12M 23/34](#)
- : [C12M 1/00](#) - [C12M 23/36](#) : [C12M 1/107](#) - [C12M 23/38](#) : [C12M 1/00](#)
- [C12M 23/40](#) : [C12M 1/00](#) - [C12M 23/42](#) : [C12M 3/00](#) - [C12M 23/44](#)
- : [C12M 3/00](#) - [C12M 23/46](#) : [C12M 3/00](#) - [C12M 23/48](#) : [C12M 3/00](#)
- [C12M 23/50](#) : [C12M 1/00](#) - [C12M 23/52](#) : [C12M 1/00](#) - [C12M 23/54](#)
- : [C12M 3/00](#) - [C12M 23/56](#) : [C12M 1/09](#) - [C12M 23/58](#) : [C12M 1/00](#)
- [C12M 25/00](#) : [C12M 1/12](#) - [C12M 25/02](#) : [C12M 1/12](#) - [C12M 25/04](#)
- : [C12M 1/12](#) - [C12M 25/06](#) : [C12M 1/12](#) - [C12M 25/08](#) : [C12M 1/12](#)
- [C12M 25/10](#) : [C12M 1/12](#) - [C12M 25/12](#) : [C12M 1/12](#) - [C12M 25/14](#)
- : [C12M 1/12](#) - [C12M 25/16](#) : [C12M 1/12](#) - [C12M 25/18](#) : [C12M 1/12](#)
- [C12M 25/20](#) : [C12M 1/12](#) - [C12M 27/00](#) : [C12M 1/02](#) - [C12M 27/02](#)
- : [C12M 1/06](#) - [C12M 27/04](#) : [C12M 1/04](#) - [C12M 27/06](#) : [C12M 1/06](#)
- [C12M 27/08](#) : [C12M 1/06](#) - [C12M 27/10](#) : [C12M 3/04](#) - [C12M 27/12](#)
- : [C12M 3/04](#) - [C12M 27/14](#) : [C12M 3/06](#) - [C12M 27/16](#) : [C12M 3/06](#)
- [C12M 27/18](#) : [C12M 1/00](#) - [C12M 27/20](#) : [C12M 1/00](#) - [C12M 27/22](#)
- : [C12M 1/00](#) - [C12M 27/24](#) : [C12M 1/08](#) - [C12M 29/00](#) : [C12M 1/00](#)
- [C12M 29/02](#) : [C12M 1/00](#) - [C12M 29/04](#) : [C12M 1/00](#) - [C12M 29/06](#)
- : [C12M 1/00](#) - [C12M 29/08](#) : [C12M 1/00](#) - [C12M 29/10](#) : [C12M 1/00](#)
- [C12M 29/12](#) : [C12M 1/00](#) - [C12M 29/14](#) : [C12M 1/00](#) - [C12M 29/16](#)
- : [C12M 1/00](#) - [C12M 29/18](#) : [C12M 1/00](#) - [C12M 29/20](#) : [C12M 1/00](#)
- [C12M 29/22](#) : [C12M 1/00](#) - [C12M 29/24](#) : [C12M 1/00](#) - [C12M 29/26](#)
- : [C12M 1/00](#) - [C12M 31/00](#) : [C12M 1/00](#) - [C12M 31/02](#) : [C12M 1/00](#)
- [C12M 31/04](#) : [C12M 1/00](#) - [C12M 31/06](#) : [C12M 1/00](#) - [C12M 31/08](#)
- : [C12M 1/00](#) - [C12M 31/10](#) : [C12M 1/00](#) - [C12M 31/12](#) : [C12M 1/00](#)
- [C12M 33/00](#) : [C12M 1/26](#) - [C12M 33/02](#) : [C12M 1/30](#) - [C12M 33/04](#)
- : [C12M 1/26](#) - [C12M 33/06](#) : [C12M 1/32](#) - [C12M 33/08](#) : [C12M 1/26](#)
- [C12M 33/10](#) : [C12M 1/26](#) - [C12M 33/12](#) : [C12M 1/26](#) - [C12M 33/14](#)
- : [C12M 1/26](#) - [C12M 33/16](#) : [C12M 1/26](#) - [C12M 33/18](#) : [C12M 1/26](#)
- [C12M 33/20](#) : [C12M 1/26](#) - [C12M 35/00](#) : [C12M 1/42](#) - [C12M 35/02](#)
- : [C12M 1/42](#) - [C12M 35/04](#) : [C12M 1/42](#) - [C12M 35/06](#) : [C12M 1/42](#)
- [C12M 35/08](#) : [C12M 1/42](#) - [C12M 37/00](#) : [C12M 1/12](#) - [C12M 37/02](#)
- : [C12M 1/12](#) - [C12M 37/04](#) : [C12M 1/12](#) - [C12M 37/06](#) : [C12M 1/12](#)
- [C12M 39/00](#) : [C12M 1/00](#) - [C12M 41/00](#) : [C12M 1/34](#) - [C12M 41/02](#)
- : [C12M 1/21](#) - [C12M 41/04](#) : [C12M 1/34](#) - [C12M 41/06](#) : [C12M 1/00](#)
- [C12M 41/08](#) : [C12M 1/00](#) - [C12M 41/10](#) : [C12M 1/00](#) - [C12M 41/12](#)
- : [C12M 1/34](#) - [C12M 41/14](#) : [C12M 1/00](#) - [C12M 41/16](#) : [C12M 1/34](#)
- [C12M 41/18](#) : [C12M 1/02](#) - [C12M 41/20](#) : [C12M 1/02](#) - [C12M 41/22](#)

: [C12M 1/02](#) - [C12M 41/24](#) : [C12M 1/02](#) - [C12M 41/26](#) : [C12M 1/34](#)  
- [C12M 41/28](#) : [C12M 1/34](#) - [C12M 41/30](#) : [C12M 1/34](#) - [C12M 41/32](#)  
: [C12M 1/34](#) - [C12M 41/34](#) : [C12M 1/34](#) - [C12M 41/36](#) : [C12M 1/34](#)  
- [C12M 41/38](#) : [C12M 1/34](#) - [C12M 41/40](#) : [C12M 1/34](#) - [C12M 41/42](#)  
: [C12M 1/34](#) - [C12M 41/44](#) : [C12M 1/34](#) - [C12M 41/46](#) : [C12M 1/34](#)  
- [C12M 41/48](#) : [C12M 1/36](#) - [C12M 43/00](#) : [C12M 1/00](#) - [C12M 43/02](#)  
: [C12M 1/00](#) - [C12M 43/04](#) : [C12M 1/00](#) - [C12M 43/06](#) : [C12M 1/00](#)  
- [C12M 43/08](#) : [C12M 1/00](#) - [C12M 45/00](#) : [C12M 1/00](#) - [C12M 45/02](#)  
: [C12M 1/33](#) - [C12M 45/04](#) : [C12M 1/00](#) - [C12M 45/06](#) : [C12M 1/00](#)  
- [C12M 45/06](#) : [C12M 3/08](#) - [C12M 45/09](#) : [C12M 3/08](#) - [C12M 45/20](#)  
: [C12M 3/08](#) - [C12M 45/06](#) : [C12M 3/08](#) - [C12M 45/09](#) : [C12M 3/08](#)  
- [C12M 45/20](#) : [C12M 1/00](#) - [C12M 45/20](#) : [C12M 1/00](#) - [C12M 45/22](#)  
: [C12M 1/00](#) - [C12M 47/00](#) : [C12M 1/00](#) - [C12M 47/00](#) : [C12M 1/00](#)  
- [C12M 47/02](#) : [C12M 1/00](#) - [C12M 47/04](#) : [C12M 1/00](#) - [C12M 47/06](#)  
: [C12M 1/00](#) - [C12M 47/08](#) : [C12M 1/00](#) - [C12M 47/10](#) : [C12M 1/00](#) -  
[C12M 47/12](#) : [C12M 1/00](#) - [C12M 47/14](#) : [C12M 1/00](#) - [C12M 47/16](#) :  
[C12M 1/00](#) - [C12M 47/18](#) : [C12M 1/00](#) - [C12M 47/20](#) : [C12M 1/00](#)

## Project: RP0038 (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 [chemecheme](#). 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

~~C12N5/08~~ 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 9/70~~ [C12N 9/26](#) covered by  
~~C07K 14/3153~~ [C12N 9/2408](#)  
~~C12N 15/05~~ [C12N 9/38](#) covered by  
~~C12N 5/14~~ [C12N 9/2468](#)  
~~C12N 15/06~~ [C12N 9/42](#) covered by  
~~C12N 5/16~~ [C12N 9/2434](#)  
~~C12N 15/07~~ [C12N 9/44](#) covered by  
~~C12N 5/16~~ [C12N 9/2451](#)  
~~C12N 15/08~~ [C12N 9/70](#) covered by  
~~C12N 5/166~~ [C07K 14/3153](#)  
~~C12N 15/12~~ [C12N 15/05](#) covered by  
~~C07K 14/435~~ [C12N 5/14](#)  
~~C12N 15/13~~ [C12N 15/06](#) covered by  
~~C07K 16/00~~ [C12N 5/16](#)  
~~C12N 15/14~~ [C12N 15/07](#) covered by  
~~C07K 14/765~~ [C12N 5/16](#)  
~~C12N 15/15~~ [C12N 15/08](#) covered by  
~~C07K 14/81~~ [C12N 5/166](#)  
~~C12N 15/16~~ [C12N 15/12](#) covered by  
~~C07K 14/575~~ [C07K 14/435](#)  
~~C12N 15/17~~ [C12N 15/13](#) covered by  
~~C07K 14/62~~ [C07K 16/00](#)  
~~C12N 15/18~~ [C12N 15/14](#) covered by  
~~C07K 14/61~~ [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](#)

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

**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.)}

U C12N 9/0012

• • {acting on nitrogen containing compounds as donors(1.4, 1.5, 1.6, 1.7)}

C12N 9/0014

• • • {acting on the CH-**NH<sub>2</sub>NH<sub>2</sub>** group of donors (1.4)}

C12N 9/0093

• • {acting on CH or **CH<sub>2</sub>CH<sub>2</sub>** groups (1.17)}

D C12N 2009/02

• {~~Oxidoreductases (1.)~~}

U C12N 9/14

• Hydrolases (3)

U C12N 9/24

• • acting on glycosyl compounds (3.2)

D C12N 9/26

• • • ~~acting on alpha-1, 4-glucosidic bonds, e.g. hyaluronidase, invertase, amylase~~

D C12N 9/38

• • • ~~acting on beta-galactose-glycoside bonds, e.g. beta-galactosidase~~

D C12N 9/42

• • • ~~acting on beta-1, 4-glucosidic bonds, e.g. cellulase~~

D C12N 9/44

• • • ~~acting on alpha-1, 6-glucosidic bonds, e.g. isoamylase, pullulanase~~

**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 ~~C12N15/10D~~[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](#) + 537/125 + 521/537

**Project: MP0108 (C12P)**

**U C12P 7/00**

**Preparation of oxygen-containing organic compounds**

M C12P 7/64

- Fats; Fatty oils; Ester-type waxes; Higher fatty acids, i.e. having at least seven carbon atoms in an unbroken chain bound to a carboxyl group; Oxidised oils or fats

**WARNING**

~~This group is not complete pending a reorganisation. See also C11C 1/045~~

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

U C12P 13/00

C12P 13/008

**Preparation of nitrogen-containing organic compounds**

- {containing a N-O bond, e.g. nitro (-~~NO2~~**NO<sub>2</sub>**), nitroso (-NO)}

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

C12Q

**MEASURING OR TESTING PROCESSES INVOLVING ENZYMES OR MICRO-ORGANISMS( immunoassay [G01N 33/53](#) ); COMPOSITIONS OR TEST PAPERS THEREFOR; PROCESSES OF PREPARING SUCH COMPOSITIONS; CONDITION RESPONSIVE CONTROL IN MICROBIOLOGICAL OR ENZYMOLOGICAL PROCESSES**

NOTES

This subclass does not cover the observation of the progress or of the result of processes specified in this subclass by any of the methods specified in groups [G01N 3/00](#) to [G01N 29/00](#) , which is covered by subclass [G01N](#).

In this subclass, the following expression is used with the meaning indicated: "involving", when used in relation to a substance, includes the testing for the substance as well as employing the substance as a determinant or reactant in a test for a different substance.

Attention is drawn to Notes (1) to (3) following the title of class [C12](#).

In this subclass, test media are classified in the appropriate group for the relevant test process.

Documents describing the use of an electrode for analysis of a specific analyte are classified in [C12Q 1/001](#) or subgroups and not according to the last place rule

Documents relating to new peptides, e.g. enzymes, 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 where the new nucleic acids are principally used in diagnostic processes, e.g. PCR, hybridisation reactions, the documents are also classified in group [C12Q 1/68](#)

When classifying in groups [C12Q 1/68](#) to [C12Q 1/70](#) it is desirable to classify with symbols from groups [C12Q 2500/00](#) to **C12Q599/00** , relating to relevant technical features of the invention, using Combination Sets.

In groups ~~C12Q 1/68~~ **M**[C12Q 1/6876](#) - [C12Q 1/6895](#) and [C12Q 1/70](#) - [C12Q 1/708](#) it is desirable to add the indexing codes [C12Q 2600/00](#) to [C12Q 2600/178](#) which reflect the use of the product in combination with the virus groups only if the application refers to products.

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

U C22B 34/00

**Obtaining refractory metals**

U C22B 34/10

- Obtaining titanium, zirconium or hafnium

U C22B 34/12

- • Obtaining titanium{ or titanium compounds from ores or scrap by metallurgical processing; preparation of titanium compounds from other titanium compounds see [C01G 23/00](#) to [C01G 23/08](#) }

- U C22B 34/1263      · · · {obtaining metallic titanium from titanium compounds, e.g. by reduction( [C22B 34/129](#) takes precedence )}
- C22B 34/1286      · · · · {using hydrogen containing agents, e.g.  $H_2H_2$ ,  $CaH_2CaH_2$ , hydrocarbons}

**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 ~~[C23C 18/20](#)~~ - [C23C 18/20B](#) - [C23C 18/2093](#)

- U C23C 18/00      **Chemical coating by decomposition of either liquid compounds or solutions of the coating forming compounds, without leaving reaction products of surface material in the coating( chemical surface reaction [C23C 8/00](#) , [C23C 22/00](#) ); Contact plating**

NOTE

This groups covers also suspensions containing reactive liquids and non-reactive solid particles.

- U C23C 18/16      · by reduction or substitution, e.g. electroless plating( [C23C 18/54](#) takes precedence )
- U C23C 18/1601      · · {Process or apparatus}

- C23C 18/1619 . . . {Apparatus for electroless plating}  
WARNING  
 the groups [C23C 18/1619](#) to [C23C 18/1698](#) are not complete, pending reorganisation. See also ~~G23C18/16B~~[C23C 18/1601](#)

- U C23C 18/18 . . . Pre-treatment of the material to be coated  
 U C23C 18/20 . . . of organic surfaces, e.g. resins  
 U C23C 18/2006 . . . . { by other methods than those of [C23C 18/22](#) to [C23C 18/30](#) }  
 C23C 18/2013 . . . . {by mechanical pretreatment, e.g. grinding, sanding}  
WARNING  
 the groups [C23C 18/2013](#) to [C23C 18/2093](#) are not complete, pending reorganisation. See also ~~G23C18/20B~~[C23C 18/2006](#)

**Project: N/A (C23F)**

- U C23F 11/00 **Inhibiting corrosion of metallic material by applying inhibitors to the surface in danger of corrosion or adding them to the corrosive agent (adding inhibitors to mineral oil, fuels, or lubricants [C10](#); adding inhibitors to pickling solutions [C23G](#))**

- U C23F 11/08 . . . in other liquids  
 U C23F 11/10 . . . using organic inhibitors

NOTES

A compound is classified in the last appropriate place.

Esters or anhydrides of organic acids are classified as the relevant acid unless otherwise indicated. Salts of a compound with an inorganic compound are classified as that compound unless specifically provided for.

- U C23F 11/16 . . . Sulfur containing compounds  
 C23F 11/164 . . . . containing a ~~SO2~~[SO<sub>2</sub>](#)-N group

**Project: N/A (C23G)**

- U C23G 5/00 **Cleaning or de-greasing metallic material by other methods; Apparatus for cleaning or de-greasing metallic material with organic solvents**

NOTE

Mixtures of organic solvents are classified according to the major component

- U C23G 5/02 . . . using organic solvents  
 U C23G 5/028 . . . containing halogenated hydrocarbons  
 U C23G 5/02809 . . . . {containing chlorine and fluorine}  
 U C23G 5/02812 . . . . {Perhalogenated hydrocarbons}  
 U C23G 5/02816 . . . . . {Ethaness}  
 C23G 5/02819 . . . . . {~~G2Cl3F3~~[C<sub>2</sub>Cl<sub>3</sub>F<sub>3</sub>](#)}  
 C23G 5/02822 . . . . . {~~G2Cl4F2~~[C<sub>2</sub>Cl<sub>4</sub>F<sub>2</sub>](#)}  
 U C23G 5/02825 . . . . {containing hydrogen}  
 U C23G 5/02829 . . . . . {Ethaness}  
 C23G 5/02832 . . . . . {~~G2H3Cl2F~~[C<sub>2</sub>H<sub>3</sub>Cl<sub>2</sub>F](#)}  
 C23G 5/02835 . . . . . {~~G2H2Cl2F2~~[C<sub>2</sub>H<sub>2</sub>Cl<sub>2</sub>F<sub>2</sub>](#)}  
 C23G 5/02838 . . . . . {~~G2HCl2F3~~[C<sub>2</sub>HCl<sub>2</sub>F<sub>3</sub>](#)}  
 U C23G 5/02841 . . . . . {Propaness}

- C23G 5/02845 . . . . . {~~C3H3ClF4~~C<sub>3</sub>H<sub>3</sub>ClF<sub>4</sub>}
- C23G 5/02848 . . . . . {~~C2H2Cl2F4~~C<sub>2</sub>H<sub>2</sub>Cl<sub>2</sub>F<sub>4</sub>}
- C23G 5/02851 . . . . . {~~C2HCl2F5~~C<sub>2</sub>HCl<sub>2</sub>F<sub>5</sub>}

**Project: N/A (C25D)**

- U C25D 5/00 Electroplating characterised by the process; Pretreatment or after-treatment of work-pieces**
- C25D 5/003 . { Electroplating characterised by the use of gases, e.g. pressure influence (removal or gases or vapours, [C25D 21/04](#))}
- WARNING  
Groups ~~C25D5/00B~~C25D 5/003, [C25D 5/006](#) are not complete, pending reorganization, see also [C25D 5/00](#)
- U C25D 7/00 Electroplating characterised by the article coated**
- C25D 7/001 . { Magnets}
- WARNING  
Groups ~~C25D7/00B~~C25D 7/001-C25D 7/008 are not complete, pending reorganization, see also [C25D 7/00](#)
- U C25D 7/12 Semiconductors { without seed layer}**
- C25D 7/123 . . { Semiconductors first coated with a seed layer for filling vias}
- WARNING  
Groups ~~C25D7/12B~~C25D 7/123-C25D 7/126 are not complete, pending reorganization, see also [C25D 7/12](#)]
- U C25D 11/00 Electrolytic coating by surface reaction, i.e. forming conversion layers**
- C25D 11/005 . { Apparatus specially adapted for electrolytic conversion coating (apparatus in general for electrolytic coating [C25D 17/00](#))}
- WARNING  
Groups [C25D 11/005](#), [C25D 11/022](#)-~~C25D11/02F~~C25D 11/028, [C25D 11/045](#) are not complete, pending reorganization, see also [C25D 11/00](#)

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

- U C30B 29/00 Single crystals or homogeneous polycrystalline material with defined structure characterised by the material or by their shape (alloys [C22C](#))**
- NOTE  
In groups [C30B 29/02](#) to [C30B 29/58](#), in the absence of an indication to the contrary, a material is classified in the last appropriate place.
- U C30B 29/10** . Inorganic compounds or compositions
- U C30B 29/16** . . Oxides
- U C30B 29/22** . . . Complex oxides
- C30B 29/26 . . . . with formula ~~BMe2O4~~BMe<sub>2</sub>O<sub>4</sub>, wherein B is Mg, Ni, Co, Al, Zn, or Cd and Me is Fe, Ga, Sc, Cr, Co, or Al
- C30B 29/28 . . . . with formula ~~A3Me5O12~~A<sub>3</sub>Me<sub>5</sub>O<sub>12</sub> wherein A is a rare earth metal and Me is Fe, Ga, Sc, Cr, Co or Al, e.g. garnets
- U C30B 29/60** . characterised by shape

- C30B 29/607
- {Crystals of complex geometrical shape, e.g. tubes, cylinders } (nanotubes [C30B 29/602](#))

WARNING

Group [C30B 29/607](#) is not complete, see also [C30B29/60B](#) [C30B 29/602](#), [C30B29/60D](#) [C30B 29/605](#)

**Project: N/A (D06N)**

- U D06N 7/00** **Flexible sheet materials not otherwise provided for, e.g. textile threads, filaments, yarns or tow, glued on macromolecular material, {e.g. fibrous top layer with resin backing, plastic naps or dots on fabrics}**

- D06N 7/0002
- { Wallpaper or wall covering on textile basis}

WARNING

groups [D06N7/00A](#) [D06N 7/0002](#), [D06N7/00D](#) [D06N 7/0092](#) - [D06N 7/0097](#) are not complete, pending reorganisation. See also [D06N 7/00](#)

- D06N 7/0063
- { Floor covering on textile basis comprising a fibrous top layer being coated at the back with at least one polymer layer, e.g. carpets, rugs, synthetic turf}

WARNING

Groups [D06N7/00C](#) [D06N 7/0063](#) - [D06N 7/0084](#) are not complete, pending reorganisation. See also [D06N 7/0036](#)

**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 1/30
- using sulfur dyes
- D06P 1/305
- {[SO<sub>3</sub>H](#) groups containing dyes}

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

- U D21H 5/00** **Special paper or cardboard not otherwise provided for (duplicating or recording paper [B41M](#))**

- U D21H 5/0005
- { Processes or apparatus specially adapted for applying liquids or other fluent materials to finished paper or board, e.g. impregnating, coating (applying liquids to surfaces in general [B05](#); treating textile materials by liquids, gases or vapours [D06B](#); impregnated or coated fibreboard [D21J 1/08](#); apparatus for making patterned paper [D21H 5/06](#); printing machines [B41F](#))}

NOTE

Equipment related to specific chemical treatment, see relevant sub-groups for this treatment; e.g. parchmentising or vulcanising [D21H 5/08](#), treatment with viscose [D21H 17/25](#)

- D21H 5/0025
- {by contact with a device carrying the treating material ([E8C8](#) and [C12](#) take precedence)}

**Project: N/A (E01D)**

- U E01D 15/00** **Movable or portable bridges; Floating bridges**

- U E01D 15/12
- Portable or sectional bridges (floating bridges [E01D 15/14](#))
- E01D 15/122
- {Inflatable or unreelable bridges (inflatable or unreelable girders in general [E04C3/00B](#) [E04C 3/005](#)); Bridges with main load-supporting structure consisting only of non-rigid elements, e.g. cables}

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

- U E02B 3/00** **Engineering works in connection with control or use of streams, rivers, coasts, or other marine sites (barrages or weirs [E02B 7/00](#)); Sealing or joints for engineering works in general**
- U E02B 3/04** **· Structures or apparatus for, or methods of, protecting banks, coasts, or harbours (sealings or joints [E02B 3/16](#); {[E02B 1/003](#) takes precedence})**
- U E02B 3/06** **· · Moles; Piers; Quay walls; Groynes; Breakwaters {Wave dissipating walls; Quay equipment}**
- E02B 3/062** **· · · {Constructions floating in operational condition, e.g. breakwaters or wave dissipating walls (floating oil barriers ~~E02B15/04B~~[E02B 15/08](#); floating stream regulating devices [E02B 3/02](#))}**
- U E02B 7/00** **Barrages or weirs; Layout, construction, methods of, or devices for, making same (for protecting banks, coasts, or harbours [E02B 3/04](#); sealings or joints [E02B 3/16](#); handling building or like materials for hydraulic engineering [E02D 15/00](#); foundations in general [E02D 27/00](#))**
- E02B 7/005** **· {Deformable barrages or barrages consisting of permanently deformable elements, e.g. inflatable, with flexible walls (closures [E02B 7/54](#); floating oil barrages ~~E02B15/04B~~[E02B 15/08](#))}**

**Project: N/A (E03C)**

- E03C 1/00** **Domestic plumbing installations for fresh water or waste water; Sinks {(work tops ~~A47B77/02B~~[A47B 77/022](#))}**

**Project: N/A (E05D)**

- E05D** **HINGES OR OTHER SUSPENSION DEVICES FOR DOORS, WINDOWS OR WINGS({ foldable tables [A47B 3/00](#) ; hinged panels [A47B 5/00](#) ; foldable chairs [A47C 4/00](#) ; making hinges [B21D 53/40](#) , [B21K 13/02](#) ; making holes for taking-up fittings [B27F 5/12](#) ; for vehicle tailboards [B60P 1/26](#) ; for refuse receptacles [B65F 1/1646](#) } ; pivotal connections in general [F16C 11/00](#) ; mounting of stove or range doors [F24C 15/023](#) ; for folding flat displays of portable computers [G06F 1/1616](#) ] )**

**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: [E05D 5/16](#) covered by [E05D 5/14](#)

[E05D 7/081](#) covered by [E05D 7/08](#)

[E05D 7/083](#) covered by [E05D 7/082](#)

[E05D 15/04](#) covered by [E05D 15/02](#) , [E05D 15/28](#) , ~~[E05D15/40B](#)~~[E05D 15/403](#)

[E05D 15/522](#) covered by [E05D 15/52](#)

[E05D 15/523](#) covered by [E05D 15/52](#)

[E05D 15/524](#) covered by [E05D 15/52](#)

- U E05D 15/00** **Suspension arrangements for wings( arrangements of wings not characterised by the construction of the supporting means [E06B 3/32](#) )**
- U E05D 15/26** **· for folding wings**
- E05D 15/262** **· · {folding vertically(~~E05D15/26B1~~ , ~~E05D15/26B2B~~ take precedence)}**

**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 ~~[E05B 65/00](#)~~ ~~[B](#)~~ ~~[E05B65/00B](#)~~

E06B 7/00

**Special arrangements or measures in connection with doors or windows({ arrangements against burglary at the edges of the wings [E06B5/11B](#) [E06B 5/113](#) } ; screening or similar protective devices [E06B 9/00](#) )**

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

U E21B 17/00

**Drilling rods or pipes; Flexible drill strings; Kellies; Drill collars; Sucker rods; {Cables}; Casings; Tubings (rod couplings in general [F16D](#); tubes or tube couplings in general [F16L](#))**

U E21B 17/02

- Couplings; joints { Expandable couplings or joints [E21B 43/106](#)}

U E21B 17/023

- · { Arrangements for connecting cables or wirelines to downhole devices}

E21B 17/026

- · · { Arrangements for fixing cables or wirelines to the outside of downhole devices (protectors and centralisers for cables and control lines [E21B17/10D](#) [E21B 17/1035](#))}

U E21B 33/00

**Sealing or packing boreholes or wells**

U E21B 33/10

- in the borehole {sealing the junction between main bore and laterals [E21B 41/0042](#)}

U E21B 33/13

- · Methods or devices for cementing, for plugging holes, crevices, or the like (dump bailers [E21B 27/02](#); { methods or apparatus for grouting offshore structures [E02B 17/0008](#); chemical compositions therefor [C09K 8/00](#))

E21B 33/138

- · · Plastering the borehole wall; Injecting into the formations {(packers [E21B 33/12](#); consolidation of loose sand or the like round the wells without excessively decreasing the permeability thereof [E21B43/02B](#) [E21B 43/025](#), compositions therefor [C09K 8/56](#))}

U E21B 43/00

**Methods or apparatus for obtaining oil, gas, water, soluble or meltable materials or a slurry of minerals from wells (applicable only to water [E03B](#); obtaining oil-bearing deposits or soluble or meltable materials by mining techniques [E21C 41/00](#); pumps [F04](#))**

E21B 43/25

- Methods for stimulating production (dump bailers [E21B 27/02](#); vibration generating arrangements [E21B 28/00](#); by vibrating earth formations [E21B43/00C](#)[E21B 43/003](#)] chemical compositions therefor [C09K 8/60](#))

**Project: N/A (F01C)****U F01C 19/00****Sealing arrangements in rotary-piston machines or engines (sealings in general [F16J](#))**

F01C 19/005

- { Structure and composition of sealing elements such as sealing strips, sealing rings and the like; Coating of these elements (vane construction [F01C21/08B](#) [F01C 21/0809](#); piston rings and ring sealings of similar construction in general [F16J 9/00](#))}

**Project: MP0108 (F01N)****U F01N 3/00****Exhaust or silencing apparatus having means for purifying, rendering innocuous, or otherwise treating exhaust( electric control [F01N 9/00](#) ; monitoring or diagnostic devices for exhaust-gas treatment apparatus [F01N 11/00](#) ; { collecting or removing exhaust gases of vehicle engines in workshops [B08B 15/00](#) , on highways [E01C 1/005](#) )}**

U F01N 3/08

- for rendering innocuous( using electric or electrostatic separators [F01N 3/01](#) ; chemical aspects [B01D 53/92](#) )

M F01N 3/10

- • by thermal or catalytic conversion of noxious components of exhaust( by using other chemical processes, chemical aspects of catalytic conversion, e.g. using specified catalysts, [B01D 53/34](#) )

**WARNING****New subgroups of F01N 3/10 are not complete pending a reorganisation**

U F01N 3/18

- • • characterised by methods of operation; Regulation

U F01N 3/20

- • • • specially adapted for catalytic conversion;{Methods of operation or regulation of catalytic converters}{ [F01N 3/22](#) takes precedence )

M F01N 3/2066

- • • • • {Selective catalytic reduction (SCR)}

**WARNING****This subgroup is not complete pending a reorganisation. See also group F01N 3/206 for documents published before March 2004.**

U F01N 3/24

- • • characterised by constructional aspects of converting apparatus( filtering in combination with catalytic reactors [F01N 3/035](#) )

U F01N 3/28

- • • • Construction of catalytic reactors

U F01N 3/2839

- • • • • {Arrangements for mounting catalyst support in housing, e.g. with means for compensating thermal expansion or vibration}

U F01N 3/2853

- • • • • • {using mats or gaskets between catalyst body or housing}

M F01N 3/286

- • • • • • • {the mats or gaskets having corrugations or cavities}

**WARNING****This group is not complete pending a reorganisation. See also F01N 3/2853 and F01N 3/2857**

M F01N 3/2867

- • • • • • • {the mats or gaskets being placed at the front or end face of catalyst body}

**WARNING****This group is not complete pending a reorganisation. See also F01N 3/2853 and F01N 3/2857**

- M F01N 3/2871 . . . . . {the mats or gaskets having an additional, e.g. non-insulating or non-cushioning layer, a metal foil or an adhesive layer}

**WARNING**

This group is not complete pending a reorganisation. See also F01N 3/2853 and F01N 3/2857

- M F01N 5/00 Exhaust or silencing apparatus combined or associated with devices profiting by exhaust energy (predominant aspects of such devices, see the relevant classes for the devices; using kinetic or wave energy of exhaust gases in exhaust systems for charging [F02B](#))

**NOTE**

- in this group the following indexing code is used: F02M 2700/31

- U F01N 5/02 . the devices using heat  
M F01N 5/025 . . {the device being thermoelectric generators}

**WARNING**

This group is not complete pending a reorganisation. See also F01N 5/02

**Project: N/A (F01N)**

- U F01N 2560/00 Exhaust systems with means for detecting or measuring exhaust gas components or characteristics
- U F01N 2560/02 . the means being an exhaust gas sensor  
F01N 2560/021 . . for measuring or detecting ammonia [NH<sub>3</sub>](#)
- U F01N 2570/00 Exhaust treating apparatus eliminating, absorbing or adsorbing specific elements or compounds  
F01N 2570/24 . Hydrogen sulfide ([H<sub>2</sub>S](#))
- U F01N 2900/00 Details of electrical control or of the monitoring of the exhaust gas treating apparatus
- U F01N 2900/06 . Parameters used for exhaust control or diagnosing  
U F01N 2900/16 . . said parameters being related to the exhaust apparatus, e.g. particulate filter or catalyst  
F01N 2900/1616 . . . [NH<sub>3</sub>](#)-slip from catalyst

**Project: N/A (F02D)**

- U F02D 41/00 Electrical control of supply of combustible mixture or its constituents ([F02D 43/00](#) takes precedence)
- F02D 41/30 . {Controlling fuel injection ({ [F02D 41/18A](#) [F02D 41/182](#), } [F02D 41/24](#) take precedence )}

**Project: N/A (F03B)**

- U F03B 3/00 Machines or engines of reaction type; Parts or details peculiar thereto  
F03B 3/02 . with radial flow at high-pressure side and axial flow at low-pressure side of rotors, e.g. Francis turbines ({rotors per se [F03B 3/12C](#) [F03B 3/125](#)})

**Project: N/A (F04C)**

- U F04C 2210/00 Fluid
- U F04C 2210/26 . Refrigerants with particular properties, e.g. HFC-134a  
F04C 2210/265 . . Ammoniac ([NH<sub>3</sub>](#))

**Project: N/A (F04D)**

- U F04D 27/00 Control, e.g. regulation, of pumps, pumping installations or systems**  
WARNING  
 This group is not complete pending a reorganisation. See also group [F04D 27/02](#) which covers also control in general not focussing on surge control
- F04D 27/002 · {by varying geometry within the pumps, e.g. by adjusting vanes}  
WARNING  
 This group is not complete pending a reorganisation. See also group ~~F04D27/02C~~ [F04D 27/0246](#)
- F04D 27/003 · {by throttling( [F04D 27/002](#) takes precedence )}  
WARNING  
 This group is not complete pending a reorganisation. See also group ~~F04D 27/02 D~~ [F04D 27/0253](#) )
- F04D 27/004 · {by varying driving speed}  
WARNING  
 This group is not complete pending a reorganisation. See also group ~~F04D27/02F~~ [F04D 27/0261](#)
- F04D 27/005 · {by changing flow path between different stages or between a plurality of compressors; Load distribution between compressors}  
WARNING  
 This group is not complete pending a reorganisation. See also group ~~F04D 27/02 G~~ [F04D 27/0269](#) ]
- F04D 27/006 · {by influencing fluid temperatures}  
WARNING  
 This group is not complete pending a reorganisation. See also group ~~F04D27/02K~~ [F04D 27/0276](#)
- F04D 27/007 · {Conjoint control of two or more different functions}  
WARNING  
 This group is not complete pending a reorganisation. See also group ~~F04D27/02L~~ [F04D 27/0284](#)
- F04D 27/009 · {by bleeding, by passing or recycling fluid}  
WARNING  
 This group is not complete pending a reorganisation. See also group ~~F04D27/02B~~ [F04D 27/0207](#)

**Project: N/A (F05C)**

- U F05C 2201/00 Metals**
- U F05C 2201/90 · Alloys not otherwise provided for
- F05C 2201/903 · · Aluminium alloy, e.g. AlCuMgPb ~~F34,37~~ [F34,37](#)

**Project: N/A (F16B)**

- U F16B 7/00** Connections of rods or tubes, e.g. of non-circular section, mutually, including resilient connections ( {[F16B 11/008](#), [F16B 17/002](#) take precedence}; umbrella frames [A45B 25/02](#); welding or soldering of connections [B23K](#); vehicle connections in general [B60D](#); railway couplings [B61G](#); bicycle frames [B62K](#); couplings for transmitting rotation [F16D](#); couplings for tubes conveying fluids [F16L](#) )
- F16B 7/10
- Telescoping systems { for vertically adjustable chairs [A47C 3/20](#); telescopic steering columns [B62D 1/18](#)}; for scaffolding [E04G 25/04](#); { telescopic masts, poles or the like [E04H12/18B](#) [E04H 12/182](#); telescopic door or window holders [E05C 17/30](#)}; telescope props for mining [E21D 15/14](#) to [E21D 15/46](#); stands or trestles as supports for apparatus or articles placed thereon { [F16M 11/26](#) }

**Project: MP0108 (F16D)**

- U F16D 3/00** Yielding couplings, i.e. with means permitting movement between the connected parts during the drive( couplings disconnectable simply by axial movement [F16D 1/10](#) ; slip couplings [F16D 7/00](#) )
- U F16D 3/16** · Universal joints in which flexibility is produced by means of pivots or sliding or rolling connecting parts
- U F16D 3/20** · · one coupling part entering a sleeve of the other coupling part and connected thereto by sliding or rolling members( [F16D 3/18](#) , [F16D 3/24](#) take precedence )
- NOTE  
"coupling parts" means the driving member and the driven member of the coupling to be mounted on and rotate as a unit with the shafts or their equivalents between which the coupling is placed. An intermediate member interconnecting these parts is regarded as such an equivalent.
- U F16D 3/22** · · · the rolling members being balls, rollers, or the like, guided in grooves or sockets in both coupling parts
- M F16D 3/223** · · · · the rolling members being guided in grooves in both coupling parts

**WARNINGS**

Groups [F16D 3/2233](#) and [F16D 3/2237](#) are not yet complete pending a reorganisation; see also this group

- U F16D 3/224** · · · · · the groove centre-lines in each coupling part lying on a sphere
- M F16D 3/2245** · · · · · where the groove centres are offset from the joint centre

**WARNINGS**

Not complete pending a reorganisation, see also group [F16D 3/224](#)

**Project: N/A (F16D)**

- U F16D 65/00** Parts or details( similar members for clutches [F16D 13/58](#) )
- F16D 65/14
- Actuating mechanisms for brakes; Means for initiating operation at a predetermined position( brake control systems, parts thereof [B60T](#) )

**NOTE**

Subgroups [F16D 65/16](#) to [F16D65/36](#) are no longer used for classification; documents in these groups are being transferred to groups [F16D65/14B](#) to [F16D65/14P](#)

**Project: MP0108 (F16D)**

- U F16D 2121/00**      **Type of actuator operation force**
- U F16D 2121/02      · Fluid pressure
- M F16D 2121/04      · · acting on a piston-type actuator, e.g. for liquid pressure
- WARNING  
Not complete; see also **F16D121/02**
- M F16D 2121/06      · · · for releasing a normally applied brake
- WARNING  
Not complete; see also **F16D121/12**
- M F16D 2121/08      · · acting on a membrane-type actuator, e.g. for gas pressure
- WARNING  
Not complete; see also **F16D121/02**
- M F16D 2121/10      · · · for releasing a normally applied brake
- WARNING  
Not complete; see also **F16D121/12**
- M F16D 2123/00**      **Multiple operation forces**
- WARNING  
When indexing in this group, each kind of operation force must be indexed in the appropriate subgroups of group F16D 2121/00

**Project: N/A (F16F)**

- U F16F 15/00**      **Suppression of vibrations in systems( { damping of non-rotary systems using inertia effect [F16F 7/10](#) ; prevention or isolation of vibrations in machine tools [B23Q 11/0032](#) ; suppression of driveline vibrations in hybrid vehicle transmissions [B60W 30/20](#) } ; vehicle seat suspension devices [B60N 2/50](#) ; { methods or devices for protecting against, or damping of, acoustic waves, e.g. sound [G10K 11/16](#) } ); Means or arrangements for avoiding or reducing out-of-balance forces, e.g. due to motion( { vibration absorbing or balancing means for aircraft propellers [B64C 11/008](#) , for rotorcraft rotors [B64C 27/001](#) } ; testing static and dynamic balance of machines or structures [G01M 1/00](#) )**
- U F16F 15/10      · Suppression of vibrations in rotating systems by making use of members moving with the system( by balancing [F16F 15/22](#) ; { yielding couplings [F16D 3/00](#) } ; with flywheels acting variably or intermittently [F16H](#) ; { construction providing resilience or vibration-damping for gear elements [F16H 55/14](#) } )
- U F16F 15/12      · · using elastic members or friction-damping members, e.g. between a rotating shaft and a gyratory mass mounted thereon( { [F16F 15/14](#) } , [F16F 15/16](#) take precedence )
- F16F 15/1204      · · · {with a kinematic mechanism or gear system( ~~[F16F15/12L](#)~~[F16F 15/1202](#) , [F16F 15/13157](#) take precedence )}

## Project: MP0108 (F16H)

M F16H

**GEARING**{ steering of motor vehicles by differentially driving ground-engaging elements on opposite vehicle sides [B62D 11/02](#) }

## NOTE

1. Combinations including mechanical gearings are classified in groups [F16H 37/00](#) or [F16H 47/00](#) , unless they are provided for in groups [F16H 1/00](#) to [F16H 35/00](#) .
2. In this subclass, sets of rigidly-connected members are regarded as single members.
3. In this subclass, the following terms or expressions are used with the meanings indicated:
  - "toothed gearing" includes worm gearing and other gearing involving at least one wheel or sector provided with teeth or the equivalent, EXCEPT gearing with chains or toothed belts, which is treated as friction gearing;
  - "conveying motion" includes transmitting energy, and means that the applied and resultant motions are of the same kind, though they may differ in, e.g. speed, direction extent:
  - "rotary" implies that the motion may continue indefinitely;
  - "oscillating" means moving about an axis to an extent which is limited by the construction of the gearing, and which may exceed one revolution, the movement being alternately forwards and backwards during continued operation of the gearing;
  - "reciprocating" means moving substantially in a straight line, the movement being alternately forwards and backwards during continued operation of the gearing;
  - "reversing" or "reversal" means that an applied movement in one direction may produce a resultant movement in either of two opposed directions at will;
  - "central gears" includes any gears whose axis is the main axis of the gearing. Attention is drawn to the following places:

<a href="#">A01D 69/06</a>	Gearings in harvesting machines
<a href="#">A63H 31/00</a>	Gearing for toys
<a href="#">B21B 35/12</a>	Toothed-wheel gearing for metal-rolling mills
<a href="#">B60K</a>	Arrangement of transmissions in vehicles
<a href="#">B61C 9/00</a>	Transmissions for railway locomotives
<a href="#">B62D 3/00</a>	Vehicle steering gears
<a href="#">B62M</a>	Transmissions for cycles
<a href="#">B63H 23/00</a>	Transmissions for marine propulsions
<a href="#">B63H 25/00</a>	Marine steering gears
{ <a href="#">B64C 27/12</a> , <a href="#">B64C 27/58</a>	Transmissions for helicopters
<a href="#">B64D 35/00</a>	Transmissions for aircraft }
<a href="#">F01</a> to <a href="#">F04</a>	Machines, engines, pumps
<a href="#">F15B 15/00</a>	Gearings associated with fluid-actuated devices
<a href="#">G01D 5/04</a>	Gearing used in indicating or recording apparatus in connection with measuring devices
<a href="#">H03J 1/00</a>	Driving arrangements for tuning resonant circuits
<a href="#">H04L 13/04</a>	Driving mechanisms for apparatus for

transmission of coded digital information.

**WARNING**

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

~~F16H 48/00 covered by F16H1/38 ;~~  
~~F16H48/02 covered by B60K;~~  
~~F16H48/04 covered by B60K;~~  
~~F16H 48/06 covered by F16H1/38 ;~~  
~~F16H 48/08 covered by F16H1/40 ;~~  
~~F16H 48/10 covered by F16H1/42 ;~~  
~~F16H 48/12 covered by F16H35/04 ;~~  
~~F16H 48/14 covered by F16H35/04C;~~  
~~F16H 48/16 covered by F16H35/04 ,~~  
~~F16H 41/00 ;~~  
~~F16H 48/18 covered by F16H 39/40 ;~~  
~~F16H 48/20 covered by F16H1/44 ;~~  
~~F16H 48/22 covered by F16H1/44 ;~~  
~~F16H 48/24 covered by F16H1/44 ;~~  
~~F16H 48/26 covered by F16H1/45S ;~~  
~~F16H 48/28 covered by F16H1/45 ,~~  
~~F16H1/45B , F16H1/45C ;~~  
~~F16H 48/30 covered by F16H1/44S .~~

M F16H 57/00

General details of gearing( of screw-and-nut gearing [F16H 25/00](#) ; of fluid gearing [F16H 39/00](#) - [F16H 43/00](#) )

**NOTE**

Groups [F16H 57/01](#) , [F16H 57/021](#) - [F16H 57/039](#) are based on IPC2012.01

Project: N/A (F16H)

F16H 57/0006

- {Vibration-damping or noise reducing means specially adapted for gearings( devices for varying tension of belts, ropes or chains with damping means [F16H 7/0829](#) ; toothed members with construction providing vibration damping [F16H 55/14](#) ; reducing vibrations or noise of the gearbox casing [F16H 57/028](#) ; suppression of vibrations or noise of gear selectors [F16H 59/0208](#) ; control of hydrostatic fluid gearing preventing or reducing vibrations or noise ~~F16H61/40W~~[F16H 61/4183](#) )}

Project: MP0108 (F16H)

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 61/0021

- {Generation or control of line pressure}

M F16H 61/0025

- {Supply of control fluid; Pumps therefore}

**WARNING**

Group [F16H 61/0025](#) and subgroups are not complete pending a reorganisation, see also [F16H61/00K](#)

**Project: N/A (F16H)**

F16H 61/02

- characterised by the signals used{( for shift actuators [F16H 61/28](#) , for continuously variable gearings [F16H 61/66](#) )}

**NOTES**

Control units where gearshift is controlled by an electric circuit, are classified in **F16H61/02E**[F16H 61/0202](#)

Control units where gearshift is controlled by hydraulic signals and a subfunction, e.g. kickdown, is controlled by an electric circuit, are classified in [F16H 61/0262](#) with indexing of the electric features

**Project: MP0108 (F16H)**

U F16H 61/38

- Control of exclusively fluid gearing

U F16H 61/48

- · hydrodynamic

M F16H 61/64

- · · controlled by changing the amount of liquid in the working circuit

**WARNING**

New subgroups of IPC8 introduced in October 2004 are not complete. Documents from F16H 61/00 and subgroups are in the process of being reorganised to the new groups

**Project: N/A (F16K)**

U F16K 31/00

**{Actuating devices;}Operating means; Releasing devices{(regulating means G05D)}**

U F16K 31/02

- electric{( [F16K 31/004](#) takes precedence )}; magnetic

U F16K 31/04

- · using a motor

F16K 31/041

- · · {for rotating valves( [F16K 31/055](#) takes precedence )}

**WARNING**

Subgroups [F16K 31/042](#) to [F16K 31/045](#) are not complete pending a reorganisation, see also **F16K31/04B**[F16K 31/041](#)

**Project: N/A (F17C)**

U F17C 2221/00

**Handled fluid, in particular type of fluid**

U F17C 2221/03

- Mixtures

F17C 2221/037

- · Containing pollutant, e.g. **H<sub>2</sub>S****H<sub>2</sub>S**, Cl

**Project: N/A (F24C)**

U F24C 7/00

**Stoves or ranges heated by electrical energy (electric heating elements or arrangements H05B)**

U F24C 7/08

- Arrangement or mounting of control or safety devices (switches [H01H](#); circuit arrangements for electric heating [H05B](#))

U F24C 7/082

- · { on ranges, e.g. control panels, illumination}

F24C 7/083

- · · { on tops, hot plates}

**WARNING**

Groups [F24C 7/083](#), [F24C 7/085](#), [F24C 7/086](#) are not complete, pending reclassification. See also **F24C7/08B**[F24C 7/082](#)

U F24C 15/00

**Details**

- U F24C 15/02
- Doors specially adapted for stoves or ranges (in general [E06B](#); for combustion chambers [F23M](#))
- F24C 15/025
- • { with air curtain closures}
- WARNING  
Groups [F24C15/02D](#)[F24C 15/025](#)-[F24C 15/028](#) are not complete, pending reclassification. See also [F24C 15/02](#)
- U F24C 15/08
- Foundations or supports plates; legs or pillars; Casings; Wheels ([F24C 15/10](#) takes precedence)
- F24C 15/083
- • { Anti-tip arrangements}
- WARNING  
Groups [F24C15/08A](#)[F24C 15/083](#)-[F24C 15/086](#) are not complete, pending reclassification. See also [F24C 15/08](#)
- U F24C 15/20
- Removing cooking fumes (parts, details or accessories of cooking-vessels for withdrawing or condensing cooking vapours from such vessels [A47J 36/38](#))
- F24C 15/2007
- • { from oven cavities}
- WARNING  
Groups [F24C15/20A](#)[F24C 15/2007](#), [F24C 15/2014](#), [F24C15/20C](#)  
[F24C 15/2028](#)-[F24C 15/2092](#) are not complete, pending reclassification. See also [F24C 15/20](#)

**Project: N/A (F24F)**

- U F24F 1/00
- Rooms units, e.g. receiving primary air from a central station { or with supply of heating or cooling agents from a central station, such as those applied to air-treatment systems included in [F24F 3/00](#) and [F24F 5/00](#) (arrangement or assembly of components for the primary treatment of air [F24F 11/08](#); mixing chambers for air [F24F 13/04](#))}**
- WARNING  
[F24F 1/08](#) to [F24F 1/24](#) and [F24F 1/28](#) to [F24F 1/68](#) not complete pending the completion of a reclassification; see also other groups of [F24F 1/00](#)
- F24F 1/02
- self-contained, i.e. with all apparatus for treatment installed in a common casing {(arrangement or assembly of components for the primary treatment of air in independent units [F24F11/08B](#)[F24F 11/085](#))}

**Project: N/A (F25J)**

- U F25J 2270/00
- Refrigeration techniques used (not used)**
- F25J 2270/90
- External refrigeration, e.g. conventional closed-loop mechanical refrigeration unit using Freon or [NH<sub>3</sub>NH<sub>3</sub>](#), unspecified external refrigeration

**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	<del><a href="#">F26B 3/34</a></del> <a href="#">F26B3/34B</a>
		<a href="#">F26B 3/347</a>

**Project: N/A (F27D)**

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 [F27D3/15A](#) [F27D 3/1509](#)}

**Project: N/A (F28D)**

U 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](#)}**

F28D 21/0001

- { Recuperative heat exchangers}

**WARNING**

the groups ~~[F28D21/00A](#)~~[F28D 21/0001](#)-[F28D 21/0014](#) are not complete, pending reorganisation. See also [F28D 21/00](#)

**Project: N/A (F41G)**

U F41G 11/00

**Details of sighting or aiming apparatus; Accessories {(Tools for adjustment of sights [F41G 1/545](#))}**

U F41G 11/001

- { Means for mounting tubular or beam shaped sighting or aiming devices on firearms}

F41G 11/004

- · { Mountings with clamping means on the device embracing at least a part of the firearm, e.g. the receiver or a dustcover ([F41G1/003](#) [F41G 11/003](#) takes precedence)}

**Project: N/A (F41H)**

- U F41H 5/00 **Armour; Armour plates**(processes for manufacturing or treating [B21](#), [C21](#), { heat treatment [C21D 9/42](#); wall or panel structure for safes [E05G 1/024](#)})
- F41H 5/26
- Peepholes; Windows; { Loopholes} (manufacture or composition of glass [C03](#); Covers therefor){ informative reference: transparent bullet-proof laminates [F41H5/04B](#)[F41H 5/0407](#); layered products essentially comprising glass [B32B 17/06](#)}

**Project: N/A (F42D)**

- F42D **BLASTING**( fuses, e.g. fuse cords, [C06C 5/00](#) ; { for obtaining fluid from wells [E21B 43/00](#) ; for mining or quarrying [E21C 37/00](#) ; for making tunnels or galleries [E21D 9/006](#) } ; cartridges [F42B 3/00](#) )

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:

[F42D7/00](#)[F42D 7/00](#) covered by [F42D 1/00](#) ,  
[F42D 3/00](#)

- F42D 3/00 **Particular applications of blasting techniques**{ explosive welding [B23K 20/08](#) ; explosive bolts or actuators [F42B3/00D](#)[F42B 3/006](#); explosive valves [F16K 13/06](#) ; cutting devices actuated by explosion [B23D15/14B](#) [B23D 15/145](#); pyrotechnical actuators [F15B 15/19](#) ; switching devices actuated by explosion [H01H 39/00](#) }

**Project: N/A (G01B)**

- U G01B 3/00 **Instruments as specified in the subgroups and characterised by the use of mechanical measuring means**( arrangements for measuring particular parameters [G01B 5/00](#) ; devices of general interest specially adapted or mounted for storing and repeatedly paying-out and re-storing lengths of material [B65H 75/34](#) )

- U G01B 3/02
- Rulers or tapes with scales or marks for direct reading
- G01B 3/10
- {flexible, e.g. tape measures}

NOTE

Group [G01B 3/1002](#) takes precedence over groups [G01B 3/1005](#) to [G01B 3/10](#) ~~Z~~[G01B 3/1084](#) ]

- G01B 3/14
- Templates for checking contours({ templates for mounting doors or windows [E04F21/00B](#)[E04F 21/0007](#)})

- U G01B 5/00 **Measuring arrangements characterised by the use of mechanical means**( instruments of the types covered by group [G01B 3/00](#) per se [G01B 3/00](#) )

- U G01B 5/0011
- {Arrangements for eliminating or compensation of measuring errors due to temperature or weight}
- G01B 5/0014
- {due to temperature( on machine tools [B23Q11/00B](#)[B23Q 11/0003](#))}

**Project: N/A (G01J)**

- U G01J 3/00 **Spectrometry; Spectrophotometry; Monochromators; Measuring colour**
- U G01J 3/28
- Investigating the spectrum (using colour filters [G01J 3/51](#))
- U G01J 3/44
- • Raman spectrometry; Scattering spectrometry; {Fluorescence spectrometry}
- G01J 3/4412
- • • {Scattering spectrometry (particle sizing by light scattering [G01N 15/0205](#); optical velocimetry of particles [G01P5/00D](#)[G01P 5/20](#), [G01P 5/26](#))}

**Project: N/A (G01L)**

- U G01L 5/00 Apparatus for, or methods of, measuring force, e.g. due to impact, work, mechanical power, or torque, adapted for special purposes (measuring pressure of a fluent medium [G01L 7/00](#) to [G01L 21/00](#); measuring rapid changes of pressure in gas, steam or liquid [G01L 23/00](#))
- G01L 5/20 · for measuring wheel side-thrust (in balancing [G01M](#) { [47B28](#)[47B28](#)})
- G01L 7/00 Measuring the steady or quasi-steady pressure of a fluid or a fluent solid material by mechanical or fluid pressure-sensitive elements { [G01L 11/004](#) takes precedence}(transmitting or indicating the displacement of mechanical pressure-sensitive elements by electric, { e.g. photoelectric} or magnetic means [G01L 9/00](#); measuring differences of two or more pressure values [G01L 13/00](#); measuring two or more pressure values simultaneously [G01L 15/00](#); measuring tyre pressure or the pressure of other inflated bodies [G01L 17/00](#); vacuum gauges [G01L 21/00](#); hollow bodies deformable or displaceable under internal pressure, per se [G12B 1/04](#); { pressure sensitive switches using Bourbon gauges [H01H 9/00](#); pressure sensitive fluidum level or volume measuring devices [G01F 17/00](#); [G01F 23/14](#), [G01F 23/16](#) pressure sensitive depth meters [G01C13/00B](#) [G01C 13/008](#); aircraft altitude meters [G01C5/00A](#)[G01C 5/005](#)})

**Project: N/A (G01N)**

- U 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 21/62 · Systems in which the material investigated is excited whereby it emits light or causes a change in wavelength of the incident light
- U G01N 21/63 · · optically excited
- U G01N 21/64 · · · Fluorescence; Phosphorescence
- U G01N 21/6428 · · · · {Measuring fluorescence of fluorescent products of reactions or of fluorochrome labelled reactive substances, e.g. measuring quenching effects, using measuring "optodes"( in vivo [A61B 5/00](#) ; immunoassay [G01N 33/53](#) )}
- G01N 21/643 · · · · {non-biological material}  
WARNING  
Not complete, see [G01N21/64H](#)[G01N 21/6428](#)
- G01N 21/645 · · · · {Specially adapted constructive features of fluorimeters}  
WARNING  
Not complete, see also [G01N 21/6428](#) to [G01N21/64M](#)[G01N 21/6447](#)

- U G01N 21/6452 . . . . . {Individual samples arranged in a regular 2D-array, e.g. multiwell plates}  
WARNING  
 Not complete, see also [G01N 21/6428](#) to [G01N 21/645](#) and [G01N 21/253](#)
- G01N 21/6454 . . . . . {using an integrated detector array}  
NOTE  
 Not complete, see **G01N21/64P**[G01N 21/645](#)
- G01N 21/6456 . . . . . {Spatial resolved fluorescence measurements; Imaging}  
WARNING  
 Not complete, see also [G01N 21/6428](#) to **G01N21/64M**[G01N 21/6447](#)
- G01N 21/6458 . . . . . {Fluorescence microscopy( fluorescence microscopes per se [G02B 21/0076](#) and [G02B 21/16](#) )}  
WARNING  
 Not complete, see also [G01N 21/6428](#) to **G01N21/64M**[G01N 21/6447](#)
- G01N 21/648 . . . . . {using evanescent coupling or surface plasmon coupling for the excitation of fluorescence}  
WARNING  
 Not complete, see also [G01N 21/553](#) and **G01N21/64H**[G01N 21/6428](#)
- G01N 21/6486 . . . . . {Measuring fluorescence of biological material, e.g. DNA, RNA, cells( [G01N 21/6428](#) takes precedence )}  
WARNING  
 Not complete, see also [G01N 21/6428](#) to **G01N21/64M**[G01N 21/6447](#)
- 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 2333/90 . 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.)  
 G01N 2333/9029 . . . acting on **-CH<sub>2</sub>CH<sub>2</sub>-** groups (1.17)
- U G01N 2333/906 . . . acting on nitrogen containing compounds as donors(1.4, 1.5, 1.7)  
 G01N 2333/90605 . . . . acting on the CH-**NH<sub>2</sub>NH<sub>2</sub>** group of donors (1.4)

**Project: N/A (G01R)**

- U G01R 1/00** Details of instruments or arrangements of the types included in groups [G01R 5/00](#) to [G01R 13/00](#) and [G01R 31/00](#) (constructional details particular to{ electromechanical } arrangements for measuring the electric consumption [G01R 11/02](#) )
- U G01R 1/02 · General constructional details( details of a kind applicable to measuring arrangements not specially adapted for a specific variable [G01D 7/00](#) )
- U G01R 1/06 · · Measuring leads; Measuring probes( [G01R 19/145](#) , [G01R 19/165](#) take precedence; end pieces for leads [H01R 11/00](#) )
- U G01R 1/067 · · · Measuring probes{( plugs, sockets or clips [G01R 1/0408](#) ; testing of connections [G01R 31/04](#) ; contacting IC`s for test purposes when probe design is not the essential feature [G01R 31/2886](#) ; using radiation beam as probe [G01R 31/302](#) ; end pieces for wires terminating in a probe [H01R 11/18](#) )}
- U G01R 1/06711 · · · · {Probe needles; Cantilever beams; "Bump" contacts; Replaceable probe pins}
- U G01R 1/06716 · · · · · {Elastic}
- G01R 1/06727 · · · · · · {Cantilever beams}
- WARNING  
This group is not complete pending a reorganisation; see also other subgroups of ~~G01R1/067C~~[G01R 1/06711](#)
- U G01R 29/00** Arrangements for measuring or indicating electric quantities not covered by groups [G01R 19/00](#) to [G01R 27/00](#)
- U G01R 29/02 · Measuring characteristics of individual pulses, e.g. deviation from pulse flatness, rise time, duration( of amplitude [G01R 19/00](#) ; of repetition rate [G01R 23/00](#) ; of phase difference of two cyclic pulse trains [G01R 25/00](#) ; monitoring pattern of pulse trains [H03K 5/19](#) )
- G01R 29/023 · · {Measuring pulse width}
- WARNING  
This group is incomplete pending a reorganisation. See also [G01R 29/02](#) and ~~G01R29/027C~~[G01R 29/0273](#)
- 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](#) } )
- 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  
~~G09G 3/00~~ ~~E~~ ~~G09G3/00E~~
  - testing of ADCs or DACs [H03M 1/10](#)  
~~T~~ ~~H03M1/10T~~
- G01R 31/34
- Testing dynamo-electric machines( ~~testing electric windings G01R 31/06 methods or apparatus specially adapted for manufacturing, assembling, maintaining or repairing dynamo-electric machines H02K 15/00~~ ){ testing of armature or field winding of dynamo-electric machines [G01R31/06B](#) }
- U G01R 33/00 Arrangements or instruments for measuring magnetic variables**
- U G01R 33/20
- involving magnetic resonance( medical aspects [A61B 5/055](#) ; magnetic resonance gyrometers [G01C 19/00](#) { investigating materials using NMR [G01N 24/00](#) ; prospecting or detecting using NMR [G01V 3/00](#) }
- U G01R 33/44
- using nuclear magnetic resonance [NMR]( [G01R 33/24](#) , [G01R 33/62](#) take precedence )
- WARNING
- Groups [G01R33/44B](#) - [G01R 33/443](#) are not complete pending reclassification. See also this group
- U G01R 33/48
- NMR imaging systems
- U G01R 33/4808
- {Multimodal MR, e.g. MR combined with positron emission tomography [PET], MR combined with ultrasound or MR combined with computed tomography [CT]}
- G01R 33/481
- {MR combined with positron emission tomography [PET]or single photon emission computed tomography [SPECT]}
- WARNING
- Not complete pending reclassification, see also [G01R33/48M](#)  
[G01R 33/4808](#)
- G01R 33/4812
- {MR combined with X-ray or computed tomography [CT]}
- WARNING
- Not complete pending reclassification, see also [G01R33/48M](#)  
[G01R 33/4808](#)
- G01R 33/4814
- {MR combined with ultrasound}
- WARNING
- Not complete pending reclassification, see also [G01R33/48M](#)  
[G01R 33/4808](#)
- U G01R 33/4818
- {MR characterised by data acquisition along a specific k-space trajectory or by the temporal order of k-space coverage, e.g. centric or segmented coverage of k-space}
- U G01R 33/4824
- {using a non-Cartesian trajectory}

- G01R 33/4826 . . . . . {in three dimensions}  
WARNING  
 Not complete pending reclassification, see also **G01R33/48T**  
[G01R 33/4818](#)
- U G01R 33/483 . . . . with selection of signals or spectra from particular regions of the volume, e.g. in vivo spectroscopy
- U G01R 33/4833 . . . . . {using spatially selective excitation of the volume of interest, e.g. selecting non-orthogonal or inclined slices}
- G01R 33/4836 . . . . . {using an RF pulse being spatially selective in more than one spatial dimension, e.g. a 2D pencil-beam excitation pulse}  
WARNING  
 Not complete pending reclassification, see also **G01R33/483B**  
[G01R 33/4833](#)
- U G01R 33/54 . . . . Signal processing systems, e.g. using pulse sequences, {Generation or control of pulse sequences (in general [H03K](#)); Operator Console}
- U G01R 33/56 . . . . . Image enhancement or correction, e.g. subtraction or averaging techniques, {e.g. improvement of signal-to-noise ratio and resolution (image data processing in general [G06T](#))}
- U G01R 33/563 . . . . . of moving material, e.g. flow contrast angiography
- U G01R 33/56375 . . . . . {Intentional motion of the sample during MR, e.g. moving table imaging}
- G01R 33/56383 . . . . . {involving motion of the sample as a whole, e.g. multistation MR or MR with continuous table motion}  
WARNING  
 Not complete pending reclassification, see also **G01R33/563T**  
[G01R 33/56375](#)

**Project: N/A (G01S)**

- U G01S 7/00 **Details of systems according to groups [G01S 13/00](#) , [G01S 15/00](#) , [G01S 17/00](#) {( apparatus for measuring unknown time-intervals by electronic means, e.g. Vernier method [G04F 10/00](#) )}**
- U G01S 7/52 . . . . . of systems according to group [G01S 15/00](#)
- G01S 7/534 . . . . . Details of non-pulse systems {( short-range imaging **G01S7/52S** [G01S 7/52017](#))}

**Project: N/A (G01T)**

- U G01T 1/00 **Measuring X-radiation, gamma radiation, corpuscular radiation, or cosmic radiation( [G01T 3/00](#) , [G01T 5/00](#) take precedence )**
- U G01T 1/16 . . . . . Measuring radiation intensity( [G01T 1/29](#) takes precedence; { self-powered detectors [G01T 3/006](#) ; using an ionisation chamber filled with a liquid or solid, e.g. frozen liquid, dielectric [G01T 3/008](#) } )
- U G01T 1/161 . . . . . Application in the field of nuclear medicine, e.g. in vivo counting{( apparatus for radiation diagnosis [A61B 6/00](#) )}
- G01T 1/1611 . . . . {using both transmission and emission sources sequentially( SPECT imaging [G01T 1/1642](#) ; PET imaging [G01T 1/2985](#) ; detecting hidden objects, e.g. weapons, explosives **G01V5/00D**[G01V 5/0008](#))}
- G01T 1/1615 . . . . {using both transmission and emission sources simultaneously( SPECT imaging [G01T 1/1642](#) ; PET imaging [G01T 1/2985](#) ; detecting hidden objects, e.g. weapons, explosives **G01V5/00D**[G01V 5/0008](#))}

- U G01T 1/24  
G01T 1/249
- • with semiconductor detectors( semiconductor devices per se [H01L 31/00](#) )
  - • • {specially adapted for use in SPECT or PET( SPECT imaging [G01T 1/1642](#) ; PET imaging [G01T 1/2985](#) ; detecting hidden objects, e.g. weapons, explosives ~~G01V5/00D~~[G01V 5/0008](#) )}

## 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 ~~G01V 3/40~~ ~~B~~[G01V3/10B](#) ,  
~~G01V 3/40~~ ~~C~~ [G01V3/10C](#)

## Project: N/A (G02B)

## G02B

**OPTICAL ELEMENTS, SYSTEMS, OR APPARATUS( [G02F](#) takes precedence; measuring-instruments, see the relevant subclass of [G01](#), e.g. optical rangefinders [G01C](#); testing of optical elements, systems, or apparatus [G01M 11/00](#) ; spectacles [G02C](#); sound lenses [G10K 11/30](#) ; electron and ion "optics" [H01J](#); X-ray "optics" [H01J](#), [H05G 1/00](#) ; optical elements structurally combined with electric discharge tubes [H01J 5/16](#) , [H01J 29/89](#) , [H01J 37/22](#) ; microwave "optics" [H01Q](#); combination of optical elements with television receivers [H04N 5/72](#) ; heating arrangements specially adapted for transparent or reflecting areas [H05B 3/84](#) ; {~~optical apparatus 42H~~}; {[optical apparatus 42H](#)})**

NOTE

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

- "simple lens or prism" means a single lens or prism;
- "compound lens or prism" means an optical member, the constituents of which either are close together without air-space or (except in group [G02B11/00](#) ) are "in broken contact", i.e. with the air-space between the constituents having no essential optical influence;
- "objective" means a lens or an optical system designed to produce a real image of a real object;
- "eyepiece" means a lens or an optical system designed to

produce a virtual image for viewing by the eye or by another optical system;  
- "front" or "rear" is determined by looking from the more distant conjugate.

#### WARNING

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

[G02B 11/00](#) - [G02B 11/34](#) covered by [G02B 9/00](#) and subgroups and [G02B 13/00](#) and subgroups

- U G02B 1/00** **Optical elements characterised by the material of which they are made( compositions of optical glasses [C03C 3/00](#) ; cements for glass [C03C 27/00](#) )**
- U G02B 1/10  
G02B 1/105
- {Coatings produced by application to, or surface treatment of, optical elements, e.g. anti-reflection coatings( [G02B 1/08](#) takes precedence; reflecting coatings [G02B 5/08](#) ; coating of glass in general [C03C 17/00](#) )}
  - {Protective coatings( anti-fouling arrangements ~~G02B27/00C~~[G02B 27/0006](#))}
- U G02B 3/00** **Simple or compound lenses( artificial eyes [A61F 2/14](#) ; spectacle lenses or contact lenses for the eyes [G02C](#) ; watch or clock glasses [G04B 39/00](#) )**
- U G02B 3/02  
G02B 3/08
- with non-spherical faces( [G02B 3/10](#) takes precedence )
  - with discontinuous faces, e.g. Fresnel lens{( diffractive Fresnel lenses ~~G02B5/18Z~~[G02B 5/1876](#))}
- U G02B 5/00** **Optical elements other than lenses( light guides [G02B 6/00](#) ; optical logic elements [G02F 3/00](#) )**
- G02B 5/18  
G02B 5/1876
- Diffraction gratings{( holographic optical elements [G02B 5/32](#) , [G03H](#); integrally combined with optical fibres ~~G02B6/02G~~[G02B 6/02057](#); for coupling light guides [G02B 6/34](#) ; integrally combined with optical integrated light guides [G02B 6/12](#) ;grating systems [G02B 27/44](#) )}
  - {Diffractive Fresnel lenses; Zone plates; Kinoforms( ~~G02B5/18L~~[G02B 5/1842](#) , [G02B 5/1847](#) take precedence; optical systems having diffractive correction means [G02B 27/0037](#) ; Fresnel lenses operating by refraction [G02B 3/08](#) )}
- U G02B 6/00** **Light guides**
- 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  
G02B 2006/12052
- {Materials}
  - {Arsenic selenide (~~As2Se3~~[As<sub>2</sub>Se<sub>3</sub>](#))}

- U G02B 26/00** Optical devices or arrangements using movable or deformable optical elements for controlling the intensity, colour, phase, polarisation or direction of light, e.g. switching, gating, modulating( specially adapted to measuring characteristics of light [G01J](#) ; using devices or arrangements the optical operation of which is modified by changing the optical properties of the medium of the devices or the arrangements [G02F 1/00](#) ; control of light in general [G05D 25/00](#) ; control of light sources [H01S 3/10](#) , [H05B 37/00](#) to [H05B 43/00](#) ; mechanically operable parts of lighting devices for the control of light [F21V](#) )
- U G02B 26/08 · for controlling the direction of light( in light guides [G02B 6/35](#) )
- U G02B 26/10 · · Scanning systems( for special applications, see the relevant places, e.g. [G03B 27/32](#), { [G03F 7/20](#) } , [G03G 15/04](#) , [G09G 3/00](#) , [H04N](#) )
- U G02B 26/12 · · · using multifaceted mirrors
- G02B 26/125 · · · · {Details of the optical system between the polygonal mirror and the image plane( [G02B26/12D](#)[G02B 26/123](#), [G02B 26/127](#) take precedence; F-Theta lenses [G02B13/00A](#)[G02B 13/0005](#) )}
- 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](#) )
- U G02B 27/09 · Beam shaping, e.g. changing the cross-sectional area, not otherwise provided for{( adapting the beam shape of a laser diode [G02B19/B3D](#); adapting the beam shape of an LED [G02B19/B3L](#) ; coupling into light guides using intermediate optical elements [G02B 6/4204](#) ; beam shaping specially adapted for lasers [H01S 3/005](#) )}
- U G02B 27/0938 · · {Using specific optical elements}
- U G02B 27/095 · · · {Refractive optical elements}
- U G02B 27/0955 · · · · {Lenses( lenses per se [G02B 3/00](#) )}
- G02B 27/0961 · · · · · {Lens arrays( lens arrays per se [G02B3/00A](#)[G02B 3/0006](#) )}

**Project: N/A (G03C)****G03C**

**PHOTOSENSITIVE MATERIALS FOR PHOTOGRAPHIC PURPOSES(for photomechanical purposes [G03F](#)); PHOTOGRAPHIC PROCESSES, e.g. CINE, X-RAY, COLOUR, STEREO-PHOTOGRAPHIC PROCESSES; AUXILIARY PROCESSES IN PHOTOGRAPHY(photographic processes characterised by the use or manipulation of apparatus classifiable per se in subclass [G03B](#), see [G03B](#); photomechanical production of textured or patterned surfaces [G03F](#); electrophotography, magnetography [G03G](#))**

NOTE

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

- "photosensitive compositions" covers photosensitive substances, e.g. silverhalides, and, if applicable, binders or additives;
- "photosensitive materials" covers the photosensitive compositions, e.g. emulsions, the bases carrying them, and, if applicable, auxiliary layers.

WARNING

The following IPC group is not used in the CPC scheme.

Subject matter covered by this group is classified in the following CPC group:  
- [G03C 9/08](#) covered by [G03F7/00S](#)[G03F 7/0037](#)

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

**G03G 15/00**

**Apparatus for electrographic processes using a charge pattern( [G03G 16/00](#) , [G03G 17/00](#) take precedence; { xerographic printers for data processors per se [G06K 15/14](#) } )**

**NOTES**

~~This group covers also processes in so far as they are characterised by the use or manipulation of apparatus classifiable per se in this group.~~

~~Groups [G03G 15/60](#), [G03G15/00G](#) , [G03G15/00J](#) mostly cover details which are classifiable in more general groups, e.g. [G03B](#), [B41](#), [B65H](#), and which are however described in connection with [G03G](#)~~

- U G03G 15/02
- for laying down a uniform charge, e.g. for sensitising; Corona discharge devices( [G03G 15/14](#) takes precedence )
- G03G 15/0291
- {corona discharge devices, e.g. wires, pointed electrodes, means for cleaning the corona discharge device}
- WARNING  
Groups [G03G 15/0291](#) and [G03G 15/025](#) are not complete pending reorganisation. See also [G03G 15/02](#) - [G03G15/02B](#)[G03G 15/0258](#)
- U G03G 15/04
- for exposing, i.e. imagewise exposure by optically projecting the original image on a photoconductive recording material
- NOTE  
The original image is obtained by direct optical projection or received from other sources, e.g. by computer modified or generated image data, by scanning , e.g. digital copiers
- U G03G 15/04036
- {Details of illuminating systems, e.g. lamps, reflectors( lamp housings for copying cameras, reflex exposure lighting [G03B 27/542](#) )}
- G03G 15/04045
- • {for exposing image information provided otherwise than by directly projecting the original image onto the photoconductive recording material, e.g. digital copiers( [G03G 15/041](#) , [G03G 15/043](#) take precedence )}
- WARNING  
Groups [G03G 15/04054](#) to [G03G 15/04081](#) are not complete pending reorganisation. See also [G03G 15/04](#) , [G03G15/04L](#)[G03G 15/04036](#), [G03G 15/043](#) , [G03G 15/0435](#) and [G03G15/32L](#)[G03G 15/326](#)
- U G03G 15/06
- for developing
- U G03G 15/08
- • using a solid developer, e.g. powder developer
- U G03G 15/0822
- • • {Arrangements for preparing, mixing, supplying or dispensing developer}
- G03G 15/0848
- • • • {Arrangements for testing or measuring developer properties or quality, e.g. charge, size, flowability}
- WARNING  
[G03G 15/0848](#) to [G03G 15/0862](#) are not complete pending reorganisation. See also [G03G 15/08 H](#)[G03G 15/0822](#) - [G03G 15/0831](#)
- U G03G 15/14
- for transferring a pattern to a second base
- U G03G 15/16
- • of a toner pattern, e.g. a powder pattern,{e.g. magnetic transfer}
- U G03G 15/1605
- • • {using at least one intermediate support( [G03G 15/1625](#) takes precedence )}

- G03G 15/1615
- • • {relating to the driving mechanism for the intermediate support, e.g. gears, couplings, belt tensioning}
- WARNING  
Groups [G03G 15/1615](#) and [G03G 15/162](#) are not complete pending reorganisation. See also ~~G03G 15/16 A~~[G03G 15/1605](#) - [G03G 15/161](#)
- U G03G 15/22
- involving the combination of more than one step according to groups [G03G 13/02](#) to [G03G 13/20](#) ( [G03G 15/01](#) takes precedence )
- U G03G 15/221
- {Machines other than electrographic copiers, e.g. electrophotographic cameras, electrostatic typewriters}
- G03G 15/224
- • • {Machines for forming tactile or three dimensional images by electrographic means, e.g. braille, 3d printing}
- WARNING  
Group [G03G 15/224](#) is not complete pending reorganisation. See also ~~G03G15/22A~~[G03G 15/221](#)
- U G03G 15/50
- {Machine control of apparatus for electrographic processes using a charge pattern, e.g. regulating different parts of the machine, multimode copiers, microprocessor control( sequencing control [G03G 21/14](#) )}
- U G03G 15/5033
- • {by measuring the photoconductor characteristics, e.g. temperature, or the characteristics of an image on the photoconductor}
- G03G 15/5041
- • • {Detecting a toner image, e.g. density, toner coverage, using a test patch( [G03G 15/553](#) takes precedence )}
- WARNING  
Groups [G03G 15/5041](#) to [G03G 15/505](#) are not complete, pending reorganisation. See also ~~G03G15/50K~~[G03G 15/5033](#)
- G03G 15/5054
- • {by measuring the characteristics of an intermediate image carrying member or the characteristics of an image on an intermediate image carrying member, e.g. intermediate transfer belt or drum, conveyor belt}
- WARNING  
Groups ~~G03G 15/50 L~~[G03G 15/5054](#) - [G03G 15/5058](#) are not complete, see also [G03G 15/50](#)
- U G03G 15/55
- {Self-diagnostics; Malfunction or lifetime display}
- U G03G 15/553
- • {Monitoring or warning means for exhaustion or lifetime end of consumables, e.g. indication of insufficient copy sheet quantity for a job}
- G03G 15/556
- • • {for toner consumption, e.g. pixel counting, toner coverage detection, toner density measurement( detectors [G03G 15/0831](#) )}
- WARNING  
Group [G03G 15/556](#) is not complete. See also [G03G 15/55](#) - ~~G03G15/55B~~  
[G03G 15/553](#)
- U G03G 15/65
- {Apparatus which relate to the handling of copy material(handling sheets or webs in general [B65H](#); for photographic purposes in general [G03B](#))}
- U G03G 15/6582
- • {Special processing for irreversibly adding or changing the sheet copy material characteristics or its appearance, e.g. stamping, annotation printing, punching}
- G03G 15/6585
- • • {by using non-standard toners, e.g. transparent toner, gloss adding devices}
- WARNING  
Group [G03G 15/6585](#) is not complete, pending reorganisation. See also ~~G03G15/65N~~[G03G 15/6582](#)

- U G03G 15/6588
- {characterised by the copy material, e.g. postcards, large copies, multi-layered materials, coloured sheet material}
- G03G 15/6591
- • {characterised by the recording material, e.g. plastic material, OHP, ceramics, tiles, textiles( details transferring the toner pattern onto particular materials [G03G 15/1625](#) )}
- WARNING  
Groups [G03G 15/6591](#) to [G03G 15/6594](#) are not complete, pending reorganisation. See also [G03G15/65P](#) [G03G 15/6588](#)

**Project: N/A (G04B)**

- U G04B 13/00
- Gearwork {Gearwork for driving the hands [G04B 19/02](#); calibers [G04B 33/00](#); dispositions and components for transmission in general [F16H](#)}**
- G04B 13/02
- Wheels; Pinions; Spindles; Pivots (bearings [G04B 31/00](#)){ chain wheels, spindles for chain wheels, also chains and driving weights [G04B 1/08](#)}
- WARNING  
Groups [G04B13/02E](#)[G04B 13/021](#)-[G04B 13/028](#) are not complete pending reorganisation, see also [G04B13/02R](#)[G04B 13/026](#)
- U G04B 19/00
- Indicating the time by visual means ({ indicating the time optically by electric means [G04C 17/00](#), e.g.} by electric lamps [G04C 17/02](#); display arrangements in general [G09F](#))**
- U G04B 19/28
- Adjustable guide marks or pointers for indicating determined points of time {inscriptions or pictures moved by hand [G04B 45/003](#)}
- U G04B 19/283
- • {on rotatable rings, i.e. bezel (for graduations on the bezels [G04B 19/18](#))}
- G04B 19/286
- • • { with locking means to prevent undesired rotations in both directions}
- WARNING  
Not complete pending reclassification; see also [G04B19/28B](#)[G04B 19/283](#)
- U G04B 47/00
- Time-pieces combined with other articles which do not interfere with the running or the time-keeping of the time-piece ({ clockwork cases for special purposes [G04B 37/12](#); clocks with magnifying glass built in the face [G04B 39/00](#); time-pieces in which parts or cases produce special effects, e.g. aesthetic effects, [G04B 45/00](#), particularly with inscriptions or pictures moved by hand [G04B 45/003](#), with specially shaped cases or parts [G04B 45/0069](#); combination of} writing or drawing implements with devices for indicating time [B43K 29/087](#); combined with cameras, projectors, or photographic printing apparatus [G03B 29/00](#))**
- U G04B 47/06
- with attached measuring instruments, e.g. pedometer, barometer, thermometer or compass {in combination with a tachometer which winds up the clockwork [G04B 5/206](#)}
- G04B 47/063
- • { measuring physiological quantities, e.g. pedometers, heart-rate sensors, blood pressure gauges and the like}
- WARNING  
Not complete pending reclassification; see also [G04B 47/06](#) and [G04B47/06B](#)[G04B 47/061](#)
- G04B 47/066
- • { with a pressure sensor}
- WARNING  
Not complete pending reclassification; see also [G04B 47/06](#) and [G04B47/06B](#)[G04B 47/061](#)

G04B 47/068

- · { with a thermometer}

WARNING

Not complete pending reclassification; see also [G04B 47/06](#) and [G04B47/06B](#) [G04B 47/061](#)

**Project: N/A (G06E)****U G06E 3/00**

**Devices not provided for in group [G06E 1/00](#), e.g. for processing analogue or hybrid data**

WARNING

Not complete. For hybrid devices see also [G06J](#)

G06E 3/008

- { Matrix or vector computation}

WARNING

Not complete. See also [G06E3/00A](#) [G06E 3/001](#)

**Project: N/A (G06F)****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

U G06F 7/491

- · · Computations with decimal numbers{radix 12 or 20.( [G06F 7/4824](#) takes precedence )}

U G06F 7/492

- · · using a binary weighted representation within each denomination{ [G06F 7/498](#) takes precedence }

U G06F 7/493

- · · · the representation being the natural binary coded representation, i.e. 8421-code

WARNING

Not complete. See provisionally also [G06F 7/491](#)

G06F 7/496

- · · · · Multiplying; Dividing

WARNING

Not complete. See provisionally also [G06F7/491B](#) [G06F 7/4915](#), [G06F 7/4917](#)

**U G06F 11/00**

**Error detection; Error correction; Monitoring( methods or arrangements for verifying the correctness of marking on a record carrier [G06K 5/00](#) ; in information storage based on relative movement between record carrier and transducer [G11B](#) , e.g. [G11B 20/18](#) ; in static stores [G11C](#) ; coding, decoding or code conversion, for error detection or error correction, in general [H03M 13/00](#) )**

NOTE

In this group the indexing codes of [G06F 1/00](#) to [G06F 15/00](#) are added

U G06F 11/07

- responding to the occurrence of a fault, e.g. fault tolerance

U G06F 11/16

- · Error detection or correction of the data by redundancy in hardware

U G06F 11/1658

- · · {Data re-synchronization of a redundant component, or initial sync of replacement, additional or spare unit}

- G06F 11/1662 . . . {the resynchronized component or unit being a persistent storage device( re-synchronization of failed mirror storage [G06F 11/2082](#) ; rebuild or reconstruction of parity RAID storage [G06F 11/1008](#) )}

WARNING

Not complete pending a reclassification. See also [G06F11/16D](#)  
[G06F 11/1658](#)

**U G06F 17/00 Digital computing or data processing equipment or methods, specially adapted for specific functions**

- 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](#))}

- G06F 17/30002 . {Interfaces; Database management systems; Updating}

WARNING

~~Not complete; see also [G06F17/30S4T](#) and [G06F17/30S4F9M](#)~~

~~This group is no longer used for the classification of new documents as from April 15, 2012. The backlog of this group is being continuously reclassified to subgroups of [G06F 17/30067](#) and [G06F 17/30286](#)~~

- G06F 17/30283 . {using distributed data base systems, e.g. networks}

WARNING

~~Not complete; see also [G06F17/30S4P3D](#)~~

~~This group is no longer used for the classification of new documents as from April 15, 2012. The backlog of this group is being continuously reclassified to subgroups of [G06F 17/30067](#) and [G06F 17/30286](#)~~

- G06F 17/30286 . {in structured data stores}

WARNING

Not complete pending the completion of a reclassification; see also [G06F17/30B](#) [G06F 17/30002](#), [G06F 17/30008](#) and [G06F 17/30283](#)

- U G06F 17/3061 . {of unstructured textual data( document management systems [G06F 17/30011](#) )}

- U G06F 17/30634 . . . {Querying}

- U G06F 17/30657 . . . {Query processing}

- U G06F 17/3066 . . . . {Query translation}

- G06F 17/30666 . . . . . {Syntactic pre-processing steps, e.g. stopword elimination, stemming( lexical analysis [G06F9/45A](#) [G06F 17/277](#), [G06F 8/425](#) )}

**Project: RP0062 (G06F)**

- G06F 17/30781 . . {of video data (-recognising patterns [G06K 9/00](#); image analysis [G06T 7/00](#); editing or indexing information signals on a record carrier in which information is recorded and accessed based on relative movement between record carrier and transducer [G11B 27/00](#); source coding or decoding of digital video signal ~~[H04N 7/26](#)~~ [H04N 19/00](#); selective content distribution, e.g. interactive television, video on demand [H04N 21/00](#) )}

**Project: N/A (G06G)**

- U G06G 7/00 Devices in which the computing operation is performed by varying electric or magnetic quantities**

- U G06G 7/12
- Arrangements for performing computing operations, e.g. operational amplifiers (amplifiers in general [H03F](#); {adapted for telemeasuring or for indicating or recording the results of the measurement [G01D 1/10](#), [G01D 1/16](#); for fuzzy computing [G06N 7/02](#)})
- G06G 7/22
- - for evaluating trigonometric functions; for conversion of co-ordinates; for computations involving vector quantities (trigonometric computations using simultaneous equations [G06G 7/34](#) { for computations in the complex plane; [G06G 7/20](#), [G06G 7/28](#) take precedence; ~~resolvers 74C5A1~~; [resolvers 74C5A1](#)})

## 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 9/00496
- {Recognising patterns in signals and combinations thereof( signature verification [G06K 9/00154](#) ; analysing specific medical signals, e.g. bioelectric signals, blood pressure [A61B 5/00](#) ; processing radar and similar signals [G01S](#) ; analysis of chromatographic signals [G01N 30/86](#) ; processing seismic signals [G01V 1/28](#) , [G01V 1/46](#) ; acoustic speech processing [G10L](#) ; transmission systems [H04B 1/00](#) )}
- G06K 9/0057
- - {Source localisation; Inverse modelling( electroencephalography [A61B5/476](#) [A61B 5/0476](#) ; source separation [G06K 9/624](#) ; image reconstruction from projection, e.g. tomography [G06T 11/003](#) ; beam formers in general [G10K 11/34](#) ; radio transmission systems for beam forming [H04B 7/04](#) )}
- U G06K 9/00624
- {Recognising scenes, i.e. recognition of a whole field of perception; recognising scene-specific objects( image retrieval [G06F 17/30244](#) ; video retrieval [G06F 17/30781](#) ; image analysis and image segmentation, e.g. pixel labelling [G06T 7/00](#) ; alarm systems [G08B](#); traffic control [G08G](#); pictorial communication [H04N](#) )}

- G06K 9/00711
- {Recognising video content, e.g. extracting audiovisual features from movies, extracting representative key-frames, discriminating news vs. sport content( information retrieval in video databases [G06F 17/30781](#) ; recognition of movements or behaviour [G06K 9/00335](#) ; extracting overlay text [G06K9/32R1T2](#)[G06K 9/3266](#) ; fusion techniques [G06K 9/6288](#) ; speech recognition [G10L 15/00](#); indexing of audio and video or audiovisual data on record media using extracted features or characteristics [G11B 27/28](#) )}
- U G06K 9/36
- Image preprocessing, i.e. processing the image information without deciding about the identity of the image( image data processing or generation, in general [G06T](#) )
- NOTE  
Group [G06K 9/58](#) takes precedence over groups [G06K 9/38](#) to [G06K 9/54](#)
- U G06K 9/46
- • Extraction of features or characteristics of the image{( segmentation of touching or overlapping patterns [G06K 9/34](#) ; edge detection for feature extraction [G06K 9/4604](#) ; segmentation or edge detection for general image processing [G06T 7/0079](#) )}
- U G06K 9/4604
- • • {Detecting partial patterns, e.g. edges or contours, or configurations, e.g. loops, corners, strokes, intersections( extracting features by contour coding [G06K 9/48](#) ; edge-based segmentation for general image processing [G06T 7/0083](#) ; edge detection for general image processing [G06T 7/0085](#) )}
- G06K 9/4638
- • • {by analysing connectivity relationships of elements of the pattern, e.g. by edge linking, by connected component or neighbouring slice analysis, by Markov Random Field [MRF]analysis( segmentation of touching or overlapping patterns involving probabilistic approaches [G06K 9/34](#) ; MRF and other Markovian models in general [G06K 9/6296](#) ; computing shortest geodesic path [G06K9/62M](#)[G06K 9/6215](#) ; segmentation involving probabilistic approaches for general image processing [G06T 7/0087](#) )}
- G06K 9/4642
- • • {by performing operations within image blocks or by using histograms( [G06K 9/4652](#) and [G06K 9/4671](#) take precedence; matching image histograms [G06K9/64S](#)[G06K 9/6212](#) )}

**Project: RP0062 (G06K)**

- U G06K 9/52
- • • by deriving mathematical or geometrical properties from the whole image
- G06K 9/527
- • • {Scale-space domain transformation, e.g. with wavelet analysis( -wavelet transform as such [G06F 17/148](#)-; compression of images with wavelet transform-[H04N 7/26](#) [H04N 19/00](#))}
- 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 9/6232
- • • {Extracting features by transforming the feature space, e.g. multidimensional scaling; Mappings, e.g. subspace methods}
- G06K 9/6249
- • • • {based on a sparsity criterion, e.g. with an overcomplete basis (-specific for source separation [G06K 9/6244](#)-; pictorial communication involving matching pursuit-[H04N 7/26989](#) [H04N 19/97](#))}

**Project: N/A (G06K)**

- G06K 9/6253
- • • {User interactive design( [G06K9/62B10F1](#)[G06K 9/6263](#) takes precedence ) ; Environments; Tool boxes}

- 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 naive labelling( EM techniques [G06K 9/6226](#) ; validation with "oracles" [G06K9/62B10F1](#)[G06K 9/6263](#) )
- G06K 9/6288
  - • {Fusion techniques, i.e. combining data from various sources, e.g. sensor fusion( bootstrap techniques, e.g. boosting [G06K 9/6256](#) ; data unmixing [G06K 9/624](#) ; image matching [G06K 9/64](#) ; fusion of acoustic speaker inputs [G10L17/00B3M](#)[G10L 17/10](#) )}

**Project: N/A (G06T)**

- U G06T 5/00
 

**Image enhancement or restoration, e.g. from bit-mapped to bit-mapped creating a similar image**
- U G06T 5/001
  - {Image restoration}
- G06T 5/002
  - • {Denoising; Smoothing( noise processing or correction adapted to be used in an image pickup device containing and electronic image sensor [H04N 5/217](#) , [H04N 5/357](#) to [H04N 5/365](#) )}
  - WARNING  
Not complete pending reclassification; see also group [G06T5/00D](#) [G06T 5/001](#)
- G06T 5/003
  - • {Deblurring; Sharpening( vibration or motion blur correction for cameras comprising an electronic image sensor [H04N 5/23264](#) )}
  - WARNING  
Not complete pending reclassification; see also group [G06T5/00D](#) [G06T 5/001](#)
- G06T 5/004
  - • • {Unsharp masking}
  - WARNING  
Not complete pending reclassification; see also group [G06T5/00D](#) [G06T 5/001](#)
- G06T 5/005
  - • {Retouching; Inpainting; Scratch removal( detecting, correction, reducing or removing defects, e.g. non-responsive pixels of solid state image sensors [H04N 5/367](#) , scratch removal for cinematographic films scanned by electronic image sensor [H04N 5/253](#) )}
  - WARNING  
Not complete pending reclassification; see also group [G06T5/00D](#) [G06T 5/001](#)
- U G06T 5/007
  - {Dynamic range modification( applied in cameras using an electronic image sensor [H04N 5/2355](#) , [H04N 5/2356](#) )}
  - WARNING  
Not complete pending reclassification; see also groups [G06T 5/001](#) and [G06T 5/40](#)
- G06T 5/008
  - • {Local, e.g. shadow enhancement}
  - WARNING  
Not complete pending reclassification; see also group [G06T5/00D](#) [G06T 5/001](#)

**Project: RP0062 (G06T)**

- U G06T 7/00** **Image analysis, e.g. from bit-mapped to non bit-mapped**  
 G06T 7/20
- Analysis of motion {(movement detection in television systems [H04N 5/144](#); motion estimation for digital video signal compression ~~H04N 7/2676~~ [H04N 19/51](#); recognizing scenes under surveillance and traffic patterns [G06K 9/00771](#); [G06K 9/00785](#))}  
WARNING  
 This group is being reorganised. Documents dealing with shape from motion are reclassified to [G06T 7/0071](#) and a sub-group [G06T 7/2006](#) is created

**Project: N/A (G06T)**

- G06T 19/00** **Manipulating 3D models or images for computer graphics**  
WARNING  
 As from August 1, 2011, documents relating to subject matter covered by subgroups ~~G06T 19/00N~~[G06T 19/003](#), [G06T 19/006](#) are continuously reclassified to said subgroups

**Project: N/A (G07D)**

- G07D 7/00** **Testing specially adapted to determine the identity or genuineness of paper currency or similar valuable papers, e.g. for segregating those which are unacceptable or alien to a currency {(arrangements for verifying the correctness of markings on a record carrier [G06K 5/00](#))}**  
NOTE  
 In this group, groups [G07D 7/16](#) to [G07D 7/20](#) take precedence over groups [G07D 7/02](#) to [G07D 7/14](#).  
WARNING  
 Groups ~~G07D7/00B~~[G07D 7/0006](#), [G07D 7/0046](#) and [G07D 7/0093](#) are not complete pending a reclassification. See also group ~~G07D7/00D~~[G07D 7/004](#)
- G07D 7/004** · { using digital security elements}  
WARNING  
 This group is no longer used for classification of new documents as from January 1st, 2011. The backlog of this group is being continuously reclassified to groups ~~G07D7/00B~~[G07D 7/0006](#), ~~G07D7/00F~~[G07D 7/0046](#), [G07D 7/0093](#)
- 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] ~~G07F19/00F~~ [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 ~~G07F19/00F~~[G07F 19/20](#)  
 Informative reference:  
 - devices dispensing coins [G07D 1/00](#)

**Project: N/A (G10H)**

- U G10H 2220/00** **Input/output interfacing specifically adapted for electrophonic musical tools or instruments**
- U G10H 2220/461 • Transducers, i.e. details, positioning or use of assemblies to detect and convert mechanical vibrations or mechanical strains into an electrical signal, e.g. audio, trigger or control signal (contact microphones for use on musical instrument [H04R 1/46](#))
- U G10H 2220/525 • • Piezoelectric transducers for vibration sensing or vibration excitation in the audio range; Piezoelectric strain sensing, e.g. as key velocity sensor; Piezoelectric actuators, e.g. key actuation in response to a control voltage
- U G10H 2220/531 • • • made of piezoelectric film
- G10H 2220/535 • • • Piezoelectric polymer transducers, e.g. made of stretched and poled polyvinylidene difluoride [PVDF] sheets in which the molecular chains of vinylidene fluoride  $\text{CH}_2\text{CH}_2\text{CF}_2\text{CF}_2$  have been oriented in a preferential direction

**Project: N/A (G11B)****G11B**

**INFORMATION STORAGE BASED ON RELATIVE MOVEMENT BETWEEN RECORD CARRIER AND TRANSDUCER**{ producing carriers of sound records for needle playback [B29C 39/00](#) } ; recording measured values in a way that does not require playback through a transducer [G01D](#); photosensitive materials or processes for photographic purposes [G03C](#); electrography, electrophotography, magnetography [G03G](#); recording or playback apparatus using mechanically marked tape, e.g. punched paper tape, or using unit records, e.g. punched or magnetically marked cards, [G06K](#); transferring data from one type of record carrier to another [G06K 1/18](#) ; printing of data from record carriers [G06K 3/00](#) ; arrangements for producing a permanent visual presentation of the output data [G06K 15/00](#) ; arrangements or circuits for control of indicating devices using static means to present variable information [G09G](#); coding, decoding or code conversion, in general [H03M](#); circuits for coupling output of reproducer to radio receiver [H04B 1/20](#) ; circuits {or arrangements} specially adapted for {pictorial or} television signal recording{ [H04N 1/21](#) } , [H04N 5/76](#) , [H04N 9/79](#) ; loudspeakers, microphones, gramophone pick-ups or like acoustic electromechanical transducers or circuits therefor [H04R](#) )

**NOTES**

This subclass covers :

- recording or playback of information by relative movement between a record track and a transducer, the transducer directly producing, or being directly actuated by, modulation in the track being recorded or played-back, and the extent of modulation corresponding to the signal being recorded or played-back;
- apparatus and machines for recording or playback, and parts thereof such as heads;
- record carriers for use with such apparatus and machines;
- associated working of other apparatus with such apparatus and machines;
- { relative positioning or movement of transducers and record carriers before, during or after transducing operation, e.g. for accessing record carriers or parts thereof, or for track change, selection or acquisition or for track following or for

```
accessing parts of tracks;          }  
-      {      driving or moving of heads or record  
carriers or both heads and record carriers  
for increasing, maintaining or decreasing the relative  
speed before, during or after  
transducing operation          }
```

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

- "head" includes any means for converting sinusoidal or non-sinusoidal electric wave-forms into variations of the physical condition of at least the adjacent surface of the record carrier, or vice versa;  
- "record carrier" means a body, such as a cylinder, disc, card, tape, or wire, capable of permanently holding information, which can be read-off by a sensing element movable relatively to the record carrier.

Documents concerning relative positioning or movement of transducers and record carriers are classified in groups [G11B 3/00](#) to [G11B 7/00](#) and [G11B 21/00](#) when only the transducer is controlled and in groups [G11B 15/00](#) , [G11B 17/00](#) and [G11B 19/00](#) when only the record carrier is controlled. When both record carrier and head are controlled, the documents are classified in **G11B15/18B** [G11B 15/1808](#), [G11B 15/1816](#) , [G11B 19/00](#) and **G11B27/00A**[G11B 27/002](#). When a plurality of record carriers are controlled, the documents are classified in [G11B 15/68](#) , [G11B 17/08](#) , [G11B 17/22](#) and **G11B27/00A**[G11B 27/002](#).

By "access" is meant an operation including a relative movement for positioning between record carrier and head before, during or after transducing; this operation including "seek", "select", "change", "acquire" and "follow" functions for at least a part of a track on at least one record carrier. By "programmed access" is meant a sequence of access operations the result of the sequence being to acquire a wanted sequence of parts of tracks or a wanted sequence of tracks. Relative movement between head and record carrier also covers the movement of a coupling beam such as a light beam between the head and a stationary record carrier.

"Movement of the head" also covers any virtual movement or any physical movement such as obtained by switching between successive transducing parts of the head or by moving the transducing zone of the head, i.e. by "scanning". If different transducing parts of the head are switchable, the number of transducing parts should be much smaller than the number of individual storage areas of the record carrier.

Attention is drawn to the notes of subclass [G11C](#).

#### 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="#">G11B 5/65</a>	covered by	<a href="#">G11B 5/64</a>	to
<b>G11B5/64D3</b>			
<a href="#">G11B 5/667</a>	covered by	<a href="#">G11B 5/66</a>	
<a href="#">G11B 5/673</a>	covered by	<a href="#">G11B 5/66</a>	
<b>G11B7/16</b> <a href="#">G11B 7/16</a>	covered by	<a href="#">G11B 7/135</a>	
<b>G11B7/18</b> <a href="#">G11B 7/18</a>	covered by	<a href="#">G11B 7/135</a>	
<a href="#">G11B 7/30</a>	covered by	<a href="#">G11B 7/00</a>	
<a href="#">G11B 9/12</a>	-	<a href="#">G11B 9/14</a>	covered by
<a href="#">G11B 9/00</a>			
<a href="#">G11B 11/24</a>	-	<a href="#">G11B 11/26</a>	covered by
<a href="#">G11B 11/00</a>			
<a href="#">G11B 13/08</a>	covered by	<a href="#">G11B</a>	

- U G11B 5/00** **Recording by magnetisation or demagnetisation of a record carrier; Reproducing by magnetic means; Record carriers therefor( [G11B 11/00](#) { and [G11B 13/00](#) }take precedence)**
- NOTE  
Subgroups [G11B 5/02](#) to [G11B 5/86](#) take precedence over subgroups [G11B 5/004](#) to [G11B 5/016](#)
- U G11B 5/62** **Record carriers characterised by the selection of the material( selection of magnetic materials in general [H01F 1/00](#) ; thin magnetic films [H01F 10/00](#) )**
- NOTE  
This group does not cover compositions, materials or processes, per se, which are covered by the relevant subclasses of section B or C.
- U G11B 5/68** **· · comprising one or more layers of magnetisable material homogeneously mixed with a bonding agent**
- U G11B 5/70** **· · · on a base layer**
- U G11B 5/706** **· · · · characterised by the composition of the magnetic material**
- U G11B 5/70626** **· · · · · {containing non-metallic substances}**
- U G11B 5/70642** **· · · · · {iron oxides}**
- G11B 5/70652** **· · · · · · {gamma -  $\text{Fe}_2\text{O}_3$   $\text{Fe}_2\text{O}_3$ }**
- 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( sector headers or addresses in preprints [G11B7/007S](#)[G11B 7/00745](#); address data in track wobble [G11B7/007T](#))}**
- WARNING  
Not complete, see also [G11B 7/007](#) and [G11B7/007S](#)[G11B 7/00745](#)
- U G11B 7/24** **· Record carriers characterised by shape, structure or physical properties, or by the selection of the material( characterised by the arrangement of information on the carrier [G11B 7/007](#) )**
- U G11B 7/26** **· · Apparatus or processes specially adapted for the manufacture of record carriers( processes involving a single technical art and for which provision exists elsewhere, see the relevant class, e.g. [B29](#) , [G03](#) ){ manufacture of intermediate mediums, e.g. matrixes for processing [G11B 23/0057](#) }**
- G11B 7/268** **· · · {Post-production operations, e.g. initialising phase-change recording layers, checking for defects( investigating the presence of flaws or contamination in optical discs [G01N21/95B](#)[G01N 21/9506](#))}**
- WARNING  
Not complete, see also [G11B 7/26](#)

**Project: RP0062 (G11B)**

- U G11B 20/00** **Signal processing not specific to the method of recording or reproducing; Circuits therefor**

G11B 20/0007

- {Time or data compression or expansion (-audio compression based on psychoacoustics [G10L 19/00](#); data processing for reproducing audio data at different playback speeds [G10L 21/04](#); video compression ~~H04N 7/26~~ [H04N 19/00](#); data compression per se [H03M 7/30](#))}.

**Project: N/A (H)****H****ELECTRICITY****NOTE**

These notes cover the basic principles and general instructions for use of section H.

Section H covers :

basic electric elements, which cover all electric units and the general mechanical structure of apparatus and circuits, including the assembly of various basic elements into what are called printed circuits and also cover to a certain extent the manufacture of these elements (when not covered elsewhere);

generation of electricity, which covers the generation, conversion, and distribution of electricity together with the controlling of the corresponding gear;

applied electricity, which covers :

general utilisation techniques, viz. those of electric heating and electric lighting circuits;

some special utilisation techniques, either electric or electronic in the strict sense, which are not covered by other sections of the Classification, including :

- electric light sources, including lasers;
- electric X-ray technique;
- electric plasma technique and the generation and acceleration of electrically charged particles or neutrons;

basic electronic circuits and their control;

radio or electric communication technique, including electromechanical transducers in general;

the use of a specified material for the manufacture of the article or element described. In this connection, paragraphs 56 to 58 of the Guide should be referred to.

In this section, the following general rules apply :

subject to the exceptions stated in I (c) above, any electric aspect or part peculiar to a particular operation, process, apparatus, object, or article classified in one of the sections of the Classification other than section H is always classified in the subclass for that operation, process, apparatus, object, or article, or where common characteristics concerning technical subjects of similar nature have been brought out at class level, it is classified, in conjunction with the operation, process, apparatus, object, or article in a subclass which covers entirely the general electrical applications for the technical subject in question;

such electrical applications, either general or particular, include the therapeutic processes and apparatus, in class [A61](#); the electric processes and apparatus used in various laboratory or industrial operations, in classes [B01](#), [B03](#), and subclass [B23K](#);

the electricity supply, electric propulsion and electric lighting of vehicles in general and of particular vehicles, in the "Transporting" subsection of section B;

the electric ignition systems of internal-combustion engines, in subclass [F02P](#), and of combustion apparatus in general, in subclass [F23Q](#);

the whole electrical part of section G, i.e. measuring devices including apparatus for measuring electric variables, checking, signalling, and calculating. Electricity in that section is generally dealt with as a means and not as an end in itself;

all electrical applications, both general and particular, presuppose that the "basic electricity" aspect appears in section H (see 1 (a) above) as regards the electric "basic elements" which they comprise. This rule is also valid for applied electricity, referred to under 1 (c) above, which appears in section H itself.

In this section, the following special cases occur :

among the general applications covered by sections other than section H, it is worth noting that electric heating in general is covered by subclasses [F24D](#) or [F24H](#) or class [F27](#), and that electric lighting in general is partly covered by class [F21](#), since in section H (see 1 (c) above) there are places in [H05B](#) which cover the same technical subjects;

in the above two cases, the subclasses of section F, which deal with the respective subjects, essentially cover in the first place the whole mechanical aspect of the apparatus or devices, whereas the electrical aspect, as such, is covered by subclass [H05B](#);

in the case of lighting, this mechanical aspect should be taken to cover the material arrangement of the various electric elements, i.e. their geometrical, or physical, position in relation to one another; this is covered by subclass [F21V](#), the elements themselves and the primary circuits remaining in section H. The same applies to electric light sources, when combined with light sources of a different kind. These are covered by subclass [H05B](#), whereas the physical arrangement which their combination constitutes is covered by the various subclasses of class [F21](#);

as regards heating, not only the electric elements and circuitry designs, as such, are covered by subclass ~~H05B~~[H05B](#), but also the electric aspects of their arrangement, where these concern cases of general application; electric furnaces being considered as such. The physical disposition of the electric elements in furnaces is covered by section F. If a comparison is made with electric welding circuits which are covered by subclass [B23K](#) in connection with welding, it can be seen that electric heating is not covered by the general rule stated in 2 above.

## 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**

H01F 1/0009

- {Antiferromagnetic materials, i.e. materials exhibiting a Néel transition temperature( [H01F 1/0036](#) takes precedence )}

#### WARNING

This groups is not complete pending the completion of reclassification; see provisionally also [H01F 1/00](#) - ~~H01F1/44R~~[H01F 1/447](#)

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 1/0302

- • • {characterised by unspecified or heterogeneous hardness or specially adapted for magnetic hardness transitions}

- H01F 1/0306 . . . . {Metals or alloys, e.g. LAVES phase alloys of the  $MgCu_2MgCu_2$ -type( [H01F 1/0304](#) takes precedence )}
- U H01F 1/032 . . . of hard-magnetic materials
- U H01F 1/04 . . . . Metals or alloys
- U H01F 1/047 . . . . Alloys characterised by their composition
- NOTE  
In groups [H01F 1/053](#) to [H01F 1/059](#) , an alloy is classified in the last appropriate place
- U H01F 1/053 . . . . . containing rare earth metals
- H01F 1/055 . . . . . and magnetic transition metals, e.g.  $SmCo_5SmCo_5$
- H01F 1/057 . . . . . and IIIa elements, e.g.  $Nd_2Fe_{14B}Nd_2Fe_{14B}$
- H01F 1/058 . . . . . and IVa elements, e.g.  $Gd_2Fe_{14C}Gd_2Fe_{14C}$
- H01F 1/059 . . . . . and Va elements, e.g.  $Sm_2Fe_{17N_2}Sm_2Fe_{17N_2}$
- H01F 1/0593 . . . . . {of tetragonal  $ThMn_{12}ThMn_{12}$ -structure}
- H01F 1/0596 . . . . . {of rhombic or rhombohedral  $Th_2Zn_{17}Th_2Zn_{17}$  structure or hexagonal  $Th_2Ni_{17}Th_2Ni_{17}$  structure}
- U H01F 1/06 . . . . . in the form of particles, e.g. powder( [H01F 1/047](#) takes precedence; { record carriers [G11B 5/70605](#) } )
- H01F 1/068 . . . . . {having a L10 crystallographic structure, e.g. [Co,Fe][Pt,Pd] (nano)particles}
- WARNING  
This groups is not complete pending the completion of reclassification; see provisionally also [H01F 1/06](#) - **H01F1/06E** [H01F 1/066](#)
- H01F 1/10 . . . . Non-metallic substances, e.g. ferrites{e.g. [(Ba,Sr)O( $Fe_2O_3Fe_2O_3$ ) $_6$ ]}ferrites with hexagonal structure}
- H01F 1/40 . . of magnetic semiconductor materials, e.g.  $GdCr_2S_4CdCr_2S_4$ ( devices using galvano-magnetic or similar effects [H01L 43/00](#) )
- U H01F 1/44 . . of magnetic liquids, e.g. ferrofluids( particles in a bonding agent [H01F 1/28](#) , [H01F 1/36](#) , { [H01F 1/37](#) } )
- H01F 1/445 . . {the magnetic component being a compound, e.g.  $Fe_3O_4Fe_3O_4$ ( [H01F 1/447](#) takes precedence )}
- 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](#) ~~to~~ [G01N27/88](#) ; 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](#) )}

**Project: N/A (H01H)**

- U H01H 33/00 High-tension or heavy-current switches with arc-extinguishing or arc-preventing means**
- U H01H 33/02
- H01H 33/021
- Details
  - • {Use of solid insulating compounds resistant to the contacting fluid dielectrics and their decomposition products, e.g. to [SF6SF6](#) (insulators or insulating bodies characterised by the insulating materials, selection of materials for their insulating or dielectric properties per se [H01B 3/00](#))}
- U H01H 33/04
- • Means for extinguishing or preventing arc between current-carrying parts (for switches in general [H01H 9/30](#))
- U H01H 33/12
- • • Auxiliary contacts on to which the arc is transferred from the main contacts (using arcing horns [H01H 33/20](#))
- U H01H 33/121
- H01H 33/122
- • • • {Load break switches}
  - • • • {both breaker and sectionaliser being enclosed, e.g. in [SF6SF6](#)-filled container}
- U H01H 33/53
- • Cases (for switchgear [H02B 1/26](#)); Reservoirs, tanks, piping or valves, for arc-extinguishing fluid; Accessories therefor, e.g. safety arrangements, pressure relief devices
- U H01H 33/56
- H01H 2033/566
- • • Gas reservoirs
  - • • • {Avoiding the use of [SF6SF6](#) }
- U H01H 33/70
- Switches with separate means for directing, obtaining, or increasing flow of arc-extinguishing fluid
- U H01H 33/88
- • the flow of arc-extinguishing fluid being produced or increased by movement of pistons or other pressure-producing parts
- U H01H 33/90
- • • this movement being effected by or in conjunction with the contact-operating mechanism
- U H01H 33/91
- H01H 2033/912
- • • • the arc-extinguishing fluid being air or gas
  - • • • • {Liquified gases, e.g. liquified [SF6SF6](#) }
- U H01H 50/00 Details of electromagnetic relays ({ [H01H 51/28](#) takes precedence;} electric circuit arrangements [H01H 47/00](#); details of electrically-operated select or switches [H01H 63/00](#); { testing of relays [G01R 31/00](#); electromagnets in general [H01F 7/06](#); relays for emergency protective circuit arrangements [H02H](#)})**
- U H01H 50/02
- Bases; Casings; Covers (frames for mounting two or more relays or for mounting a relay and another electric component [H02B 1/01](#), [H04Q 1/08](#), [H05K](#))
- U H01H 50/023
- H01H 2050/025
- • {Details concerning sealing, e.g. sealing casing with resin (in general [H01H 9/04](#))}
  - • • {containing inert or dielectric gasses, e.g. [SF6SF6](#), for arc prevention or arc extinction }

**Project: N/A (H01J)**

U H01J 47/00

Tubes for determining the presence, intensity, density or energy of radiation or particles({ discharge tubes using igniting by associated radioactive materials or fillings, e.g. current stabilising tubes [H01J 17/32](#) } ; photoelectric discharge tubes not involving the ionisation of a gas [H01J 40/00](#) ; { discharge tubes for measuring the pressure, partial pressure of introduced gas or for detecting presence of gas [H01J 41/02](#) ; ionisation chambers using a solid dielectric [G01T 3/008](#) })

H01J 47/12

- Neutron detector tubes, e.g. [BF<sub>3</sub>BF<sub>3</sub>](#) tubes

H01J 47/1272

- • {[BF<sub>3</sub>BF<sub>3</sub>](#) tubes}

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

H01L

**SEMICONDUCTOR DEVICES; ELECTRIC SOLID STATE DEVICES NOT OTHERWISE PROVIDED FOR**(use of semiconductor devices for measuring [G01](#); resistors in general [H01C](#); magnets, inductors{in general} , transformers [H01F](#); capacitors in general [H01G](#); electrolytic devices [H01G 9/00](#) ; batteries, accumulators [H01M](#); waveguides, resonators or lines of the waveguide type [H01P](#); line connectors, current collectors [H01R](#); stimulated emission devices [H01S](#); electromechanical resonators [H03H](#); loudspeakers, microphones, gramophone pick-ups or like acoustic electromechanical transducers [H04R](#); electric light sources in general [H05B](#); printed circuits, hybrid circuits, casings or constructional details of electric apparatus, manufacture of assemblages of electrical components [H05K](#); use of semiconductor devices in circuits having a particular application, see the subclass for the application )

NOTES

This subclass covers electric solid state devices which are not provided for in any other subclass and details thereof. This includes:

- semiconductor devices adapted for rectifying, amplifying, oscillating or switching;
- semiconductor devices sensitive to radiation;
- electric solid state devices using thermoelectric, superconductive, piezo-electric, electrostrictive, magnetostrictive, galvano-magnetic or bulk negative resistance effects and integrated circuit devices.

Also covered by this subclass are photo-resistors, magnetic field dependent resistors, field effect resistors, capacitors with potential-jump barrier, resistors with potential-jump barrier or surface barrier, incoherent light emitting diodes, electromechanical solid state transducers and thin-film or thick-film circuits.

Furthermore, it provides for processes and apparatus adapted for the manufacture or treatment of such devices, except where such processes relate to single step processes for which provision exists elsewhere.

In this subclass:

The expression "solid state body" refers to the body of material within which, or at the surface of which, the physical effects characteristic of the device occur. In thermoelectric devices it includes all materials in the current path.

Regions in or on the body of the device (other than the solid state body itself), which exert an influence on the solid state body electrically, are considered to be "electrodes" whether or not an external electrical connection is made thereto. {Electrodes are often referred to as "contacts" in the literature.} An electrode may include several portions and the term includes metallic regions which exert influence on the solid state body through an insulating region, (e.g. capacitive coupling) and inductive coupling arrangements to the body. The dielectric region in a capacitive arrangement is regarded as part of the electrode. In arrangements including several portions only those portions which exert an influence on the solid state body by virtue of their shape, size or disposition or the material of which they are formed are considered to be part of the electrode.

The other portions are considered to be "arrangements for conducting electric current to or from the solid state body" or "interconnections between solid state components formed in or on a common substrate", i.e. leads.

The word "device" refers to an electric circuit element; where an electric circuit element is one of a plurality or elements formed in or on a common substrate it is referred to as a "component".

A "complete device" is a device in its fully assembled state which may or may not require further treatment, e.g. electro-forming, before it is ready for use but which does not require the addition of further structural units.

The word "parts" includes all structural units which are included in a complete device.

A "container" is an enclosure forming part of the complete device and is essentially a solid construction in which the body of the device is placed, or which is formed around the body without forming an intimate layer thereon. An enclosure which consists of one or more layers formed on the body and in intimate contact therewith is referred to as an "encapsulation".

"Integrated circuit" is a device where all components, e.g. diodes, resistors, are built up on a common substrate and form the device including interconnections between the components.

"Integration processes" are processes for the manufacture of at least two different components where the process is especially adapted to their integration, e.g. to take advantage of it or to reduce their manufacturing cost. Example: in a CMOS process, the same ion implant dopes the p-MOS gate and the n-MNOS source and drain.

Consequently, a process for the manufacture of a component per se is not considered as an integration process, even though that component will be part of an integrated circuit.

"Assembly" of a device is the building up of the device from its component constructional units and includes the provision of fillings in containers.

When referring to the periodic table of the elements, either the new IUPAC notation, i.e. numbering system from 1 to 18, or the previous IUPAC form may be used to indicate an element group, e.g. group IV elements according to the previous IUPAC form correspond to group 14 elements according to the new notation

#### WARNINGS

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

[H01L 21/301](#) covered by [H01L 21/30](#)

[H01L 21/328](#) covered by [H01L 29/66075](#) [H01L 21/329](#) covered by

[H01L 29/66083](#) [H01L 21/33](#) covered by [H01L 29/66227](#) [H01L 21/331](#) covered

by [H01L 29/66234](#) [H01L 21/332](#) covered by [H01L 29/66363](#) [H01L 21/334](#)

covered by [H01L 29/66075](#) [H01L 21/335](#) covered by [H01L 29/66409](#)

[H01L 21/336](#) covered by [H01L 29/66477](#) [H01L 21/337](#) covered by

[H01L 29/66893](#) [H01L 21/338](#) covered by [H01L 29/66848](#) [H01L 21/339](#) covered

by [H01L 29/66946](#) [H01L 21/58](#) covered by [H01L 24/80](#)

[H01L 21/8239](#) covered by [H01L 27/1052](#) [H01L 21/60](#) covered by [H01L 24/80](#)

[H01L 21/66](#) covered by [H01L 22/34](#) [H01L 21/603](#) covered by [H01L 24/80](#)

[H01L 21/607](#) covered by [H01L 24/80](#)

[H01L 21/8242](#) covered by [H01L 27/10844](#)

[H01L 21/8244](#) covered by [H01L 27/11](#) [H01L 21/8246](#) covered by [H01L 27/112](#)

[H01L 21/8247](#) covered by [H01L 27/11517](#) [H01L 21/98](#) covered by [H01L 25/50](#)

[H01L 29/38](#) covered by [H01L 29/04](#) to ~~[H01L29/36D](#)~~ [H01L 29/365](#)

[H01L 29/96](#) covered by [H01L 29/68](#) to [H01L 29/945](#) [H01L 51/30](#) covered by

[H01L 51/0032](#)

[H01L 51/40](#) covered by ~~[H01L51/00A](#)~~ [H01L 51/0001](#)

[H01L 51/46](#) covered by [H01L 51/0032](#)

[H01L 51/48](#) covered by ~~[H01L51/00A](#)~~ [H01L 51/0001](#)

H01L 51/54 covered by [H01L 51/0032](#)

Groups [H01L 23/562](#) to [H01L 23/576](#) do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - [H01L 23/562](#) - [H01L 23/564](#) : [H01L 23/00](#) - [H01L 23/57](#) : [H01L 23/58](#)

Groups [H01L 22/00](#) to [H01L 22/34](#) do not correspond to a former or current IPC group. Concordance CPC : IPC for these groups is as follows: - [H01L 22/00](#) - [H01L 22/34](#) : [H01L 21/66](#)

Groups [H01L 24/00](#) to [H01L 24/98](#) do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - [H01L 24/00](#) - [H01L 24/98](#) : [H01L 23/00](#)

Group [H01L 25/50](#) does not correspond to a former or current IPC group. Concordance CPC : IPC for this group is as follows: - [H01L 25/50](#) : [H01L 21/98](#)

Groups [H01L 28/00](#) - [H01L 28/92](#) do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - [H01L 28/00](#) - [H01L 28/92](#) : [H01L 49/02](#)

**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**  
**H01L 21/02002**

- Manufacture or treatment of semiconductor devices or of parts thereof
- {Preparing wafers}

**NOTE**

1. This group covers processes for manufacturing wafers prior to the fabrication of any device, i.e. between the sawing of ingots (covered by [B28D](#)) and the cleaning of substrates (covered by [H01L 21/02](#) [FH01L 21/02041](#) ).

2. This group does not cover:

- simple use of grinding or polishing machines [B24B](#)
- thermal smoothening [H01L 21/324](#)

**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 21/18**

- the devices having semiconductor bodies comprising elements of the fourth group of the Periodic System or AllIBV 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 AllIBV compounds, even if the material used is not explicitly specified.

- U H01L 21/22 . . . . Diffusion of impurity materials, e.g. doping materials, electrode materials, into or out of a semiconductor body, or between semiconductor regions; {Interactions between two or more impurities; Redistribution of impurities}
- U H01L 21/225 . . . . . using diffusion into or out of a solid from or into a solid phase, e.g. a doped oxide layer{( [H01L 21/221](#) to [H01L 21/222](#) take precedence )}
- U H01L 21/2251 . . . . . {Diffusion into or out of group IV semiconductors}
- U H01L 21/2254 . . . . . {from or through or into an applied layer, e.g. photoresist, nitrides}
- H01L 21/2255 . . . . . {the applied layer comprising oxides only, e.g.  $P_2O_5$ , PSG,  $H_3BO_3$ , doped oxides}
- 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 21/28202 . . . . . {in a nitrogen-containing ambient, e.g. nitride deposition, growth, oxynitridation,  $NH_3$  nitridation,  $N_2O$  oxidation, thermal nitridation, RTN, plasma nitridation, RPN}
- 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 21/31 . . . . . to form insulating layers thereon, e.g. for masking or by using photolithographic techniques( layers forming electrodes [H01L 21/28](#) ; encapsulating layers [H01L 21/56](#) ); After treatment of these layers
- U H01L 21/314 . . . . . Inorganic layers( [H01L 21/3105](#) , [H01L 21/32](#) take precedence )
- WARNING
- This group and subgroups are no longer used for the classification of new documents as from May 1, 2011. The backlog of this group is being continuously reclassified to [H01L 21/02107](#) and subgroups thereof
- U H01L 21/316 . . . . . composed of oxides or glassy oxides or oxide based glass
- WARNING
- This group and subgroups are no longer used for the classification of new documents as from May 1, 2011. The backlog of this group is being continuously reclassified to [H01L 21/02107](#) and subgroups thereof
- U H01L 21/31604 . . . . . {Deposition from a gas or vapour( [H01L 21/31691](#) , [H01L 21/31695](#) take precedence )}
- H01L 21/31637 . . . . . {Deposition of Tantalum oxides, e.g.  $Ta_2O_5$ }

- U H01L 21/67
- Apparatus specially adapted for handling semiconductor or electric solid state devices during manufacture or treatment thereof; Apparatus specially adapted for handling wafers during manufacture or treatment of semiconductor or electric solid state devices or components;{Apparatus not specifically provided for elsewhere( processes per se [H01L 21/30](#) , [H01L 21/46](#) , [H01L 23/00](#) ; simple temporary support means, e.g. using adhesives, electric or magnetic means [H01L 21/68](#) , [H01L 21/302](#) ; apparatus for manufacturing arrangements for connecting or disconnecting semiconductor or solid-state bodies and for methods related thereto [H01L 24/74](#) ; )}

NOTE

In this subgroup the term substrate designates a semiconductor or electric solid state device or component, or a wafer

- U H01L 21/683
- • for supporting or gripping( for conveying [H01L 21/677](#) , for positioning, orientation or alignment [H01L 21/68](#) )
- H01L 21/687
- • • using mechanical means, e.g. chucks, clamps or pinches{( using electrostatic chucks ~~H01L21/683C~~[H01L 21/6831](#))}

**H01L 24/00****{Arrangements for connecting or disconnecting semiconductor or solid-state bodies; Methods or apparatus related thereto}**NOTE

1. This group does not cover: - details of semiconductor bodies or of electrodes of devices provided for in group [H01L 29/00](#) , which details are covered by that group; - details peculiar to devices provided for in a single main group of groups [H01L 31/00](#) to [H01L 51/00](#) , which details are covered by those groups. - printed circuits, which are covered by groups [H05K 1/00](#) to ~~H05K1/18F~~ [H05K 1/189](#); - apparatus or manufacturing processes for printed circuits, which are covered by groups [H05K 3/00](#) to ~~H05K3/46D~~ [H05K 3/4685](#); - manufacture or treatment of parts, which are covered by group [H01L 21/48](#) and subgroups except [H01L 21/4885](#) to [H01L 21/4896](#) ; - assemblies of semiconductor devices, which are covered by groups [H01L 21/50](#) to ~~H01L21/56T~~ [H01L 21/568](#); - applying interconnections to be used for carrying current between separate components within a device, which is covered by group [H01L 21/768](#) and subgroups; - containers or seals, which are covered by groups [H01L 23/02](#) to [H01L 23/10](#) ; - mountings, which are covered by groups [H01L 23/12](#) to [H01L 23/15](#) and subgroups; - arrangements for cooling, heating, ventilating or temperature compensation, which are covered by groups [H01L 23/34](#) to ~~H01L23/473J~~ [H01L 23/4735](#); - arrangements for conducting electric current, which are covered by groups [H01L 23/48](#) to [H01L 23/50](#) , and by groups [H01L 23/52](#) to ~~H01L23/538V~~ [H01L 23/5389](#); - structural electrical arrangements, which are covered by groups [H01L 23/58](#) to [H01L 23/66](#) ; - assemblies of semiconductor or other solid state devices, which are covered by groups [H01L 25/00](#) to [H01L 25/18](#) . 2. In this group the following indexing codes are used : [H01L 24/00](#) [H01L 2224/00](#) , [H01L 2924/00](#) , and subgroups thereof

WARNING

[H01L 21/4885](#) , [H01L 21/58](#) , [H01L 23/48](#) , [H01L 23/482](#) , [H01L 23/485](#) , [H01L 23/488](#)

**U H01L 29/00** Semiconductor devices adapted for rectifying, amplifying, oscillating or switching, or capacitors or resistors with at least one potential-jump barrier or surface barrier, e.g. PN junction depletion layer or carrier concentration layer; Details of semiconductor bodies or of electrodes thereof;{Multistep manufacturing processes therefor}( [H01L 31/00](#) - [H01L 47/00](#) , [H01L 51/05](#) take precedence; processes or apparatus adapted for the manufacture or treatment thereof or of parts thereof [H01L 21/00](#) ; details other than of semiconductor bodies or of electrodes thereof [H01L 23/00](#) ; devices consisting of a plurality of solid state components formed in or on a common substrate [H01L 27/00](#) ; { passive two-terminal components without a potential-jump or surface barrier for integrated circuits, details thereof and multistep manufacturing processes therefor [H01L 28/00](#) ; } resistors in general [H01C](#); capacitors in general [H01G](#),{ e.g. ceramic barrier-layer capacitors [H01G 4/1272](#) }

**NOTE**

In this main group, classification is made both in groups [H01L 29/02](#) to [H01L 29/51](#) and in groups [H01L 29/66](#) to [H01L 29/94](#) if both of these sets of groups are relevant.

- U H01L 29/02 · Semiconductor bodies;{Multistep manufacturing processes therefor}
- U H01L 29/12 · · characterised by the materials of which they are formed
- U H01L 29/24 · · · including, apart from doping materials or other impurities, only semiconductor materials not provided for in groups [H01L 29/16](#) , [H01L 29/18](#) , [H01L 29/20](#) , [H01L 29/22](#) ( including organic materials [H01L 51/00](#) )
- H01L 29/242 · · · · {AIBVI or AIBVII compounds, e.g.  $\text{Cu}_2\text{O}$ ,  $\text{CuI}$ ( [H01L 29/247](#) takes precedence )}
- U H01L 29/40 · Electrodes;{Multistep manufacturing processes therefor}
- U H01L 29/43 · · characterised by the materials of which they are formed
- U H01L 29/49 · · · Metal-insulator-semiconductor electrodes,{e.g. gates of MOSFET( [H01L 29/435](#) takes precedence )}

**NOTE**

This group covers also devices using any other conductor material in place of metal

- H01L 29/4966 · · · · {the conductor material next to the insulator being a composite material, e.g. organic material, TiN,  $\text{MeSi}_2\text{MoSi}_2$ ( [H01L 29/4908](#) , [H01L 29/4983](#) take precedence )}
- H01L 29/4975 · · · · · {being a silicide layer, e.g.  $\text{TiSi}_2$  $\text{TiSi}_2$ }

**U H01L 31/00** Semiconductor devices sensitive to infra-red radiation, light, electromagnetic radiation of shorter wavelength or corpuscular radiation and adapted either for the conversion of the energy of such radiation into electrical energy or for the control of electrical energy by such radiation; Processes or apparatus peculiar to the manufacture or treatment thereof or of parts thereof; Details thereof( [H01L 51/42](#) takes precedence; devices consisting of a plurality of solid state components formed in, or on, a common substrate, other than combinations of radiation-sensitive components with one or more electric light sources, [H01L 27/00](#) ; production of heat using solar heat [F24J 2/00](#) ; measurement of X-radiation, gamma radiation, corpuscular radiation or cosmic radiation with semiconductor detectors [G01T 1/24](#) , with resistance detectors [G01T 1/26](#) ; measurement of neutron radiation with semiconductor detectors [G01T 3/08](#) ; couplings of light guides with optoelectronic elements [G02B 6/42](#) ; obtaining energy from radioactive sources [G21H](#) )

- U H01L 31/0248 · characterised by their semiconductor bodies
- U H01L 31/0256 · · characterised by the material
- U H01L 31/0264 · · · Inorganic materials
- U H01L 31/032 · · · · including, apart from doping materials or other impurities, only compounds not provided for in groups [H01L 31/0272](#) to [H01L 31/0312](#)
- H01L 31/0322 · · · · · {comprising only AIBIIICVI chalcopyrite compounds, e.g. Cu In  $\text{Se}_2\text{Se}_2$ , Cu Ga  $\text{Se}_2\text{Se}_2$ , Cu In Ga  $\text{Se}_2\text{Se}_2$ }
- H01L 31/0326 · · · · · {comprising AIBIIICIVDVI kesterite compounds, e.g.  $\text{Cu}_2\text{ZnSnSe}_4$ ,  $\text{Cu}_2\text{ZnSnS}_4$ ,  $\text{Cu}_2\text{ZnSnS}_4$ }

- U H01L 39/00** **Devices using superconductivity; Processes or apparatus peculiar to the manufacture or treatment thereof or of parts thereof( devices consisting of a plurality of solid state components formed in or on a common substrate [H01L 27/00](#) ; { light detection [G01J](#) , [G02F 2/00](#) ; application to memories [G11C 11/44](#) , [G11C 15/00](#) , [G11C 19/32](#) } ; superconducting conductors cables or transmission lines [H01B 12/00](#) ; { microwaves [H01P 7/00](#) , [H01P 11/00](#) } ; superconductive coils or windings [H01F](#) ; amplifiers using superconductivity [H03F 19/00](#) ; { impulse generators and logic circuits [H03K 3/38](#) , [H03K 17/92](#) , [H03K 19/195](#) ; lasers [H01S 3/00](#) , [H01S 5/00](#) } )**

NOTE

In this group, in the absence of an indication to the contrary, an invention is classified in the last appropriate place

- U H01L 39/02 · Details
- U H01L 39/12 · · characterised by the material
- U H01L 39/121 · · · {Organic materials}
- H01L 39/123 · · · · {Fullerene superconductors, e.g. soccerball-shaped allotrope of carbon, e.g.  $\text{C}_{60}$ ,  $\text{C}_{94}$ ( fullerenes in general [C07C 13/00](#) )}
- U H01L 39/14 · Permanent superconductor devices
- H01L 39/141 · · {comprising metal borides, e.g.  $\text{MgB}_2\text{MgB}_2$ }
- U H01L 39/22 · Devices comprising a junction of dissimilar materials, e.g. Josephson-effect devices
- U H01L 39/223 · · {Josephson-effect devices}
- H01L 39/226 · · · {comprising metal borides, e.g.  $\text{MgB}_2\text{MgB}_2$ }
- U H01L 39/24 · Processes or apparatus peculiar to the manufacture or treatment of devices provided for in [H01L 39/00](#) or of parts thereof
- H01L 39/2409 · · {of devices comprising an intermetallic compound of type A-15, e.g.  $\text{Nb}_3\text{SnNb}_3\text{Sn}$ }
- H01L 39/2487 · · {of devices comprising metal borides, e.g.  $\text{MgB}_2\text{MgB}_2$ }

- 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](#)

- H01L 41/08
- Piezo-electric or electrostrictive devices
- WARNING  
Pending reorganisation, the groups ~~H01L41/08C~~[H01L 41/0805](#), ~~H01L41/08F~~[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](#))
- H01L 41/0906
- • • {using longitudinal or thickness displacement combined with bending, shear or torsion displacement}
- WARNING  
Pending reorganisation, the groups [H01L 41/0913](#) to [H01L 41/092](#) are not complete, see provisionally also ~~H01L41/09B~~[H01L 41/0906](#)
- 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](#) )**
- U H01L 51/0032
- {Selection of organic semiconducting materials, e.g. organic light sensitive or organic light emitting materials}
- NOTE  
This group only covers the selection of organic materials for their electrical or other properties insofar as they are specific for their use in devices covered by the group [H01L 51/00](#) .  
For the materials per se, see the relevant subclasses.  
Attention is drawn to the following places:  
- organic materials in general [C07C](#), [C07D](#), [C07F](#), [C08L](#);  
- organic materials as electrical conductors [H01B 1/12](#) ;  
- organic materials as electrical insulators [H01B 3/18](#)
- U H01L 51/0045
- • {Carbon containing materials, e.g. carbon nanotubes, fullerenes( per se [C01B 31/0206](#) )}
- H01L 51/0046
- • • {Fullerenes, e.g. ~~G60~~[C<sub>60</sub>](#), ~~G70~~[C<sub>70</sub>](#)}
- U H01L 2225/00
- Details relating to assemblies covered by the group [H01L 25/00](#) but not provided for in its subgroups**
- U H01L 2225/03
- All the devices being of a type provided for in the same subgroup of groups [H01L 27/00](#) to [H01L 51/00](#)
- U H01L 2225/04
- • the devices not having separate containers
- U H01L 2225/065
- • • the devices being of a type provided for in group [H01L 27/00](#)
- U H01L 2225/06503
- • • • Stacked arrangements of devices
- H01L 2225/06596
- • • • • Structural arrangements for testing( testing or measuring during manufacture or treatment ~~H01L21/66~~[H01L 22/00](#) ; testing electrical properties or locating electrical faults [G01R 31/00](#) )
- 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 2924/049
- Nitrides composed of metals from groups of the periodic table
- U H01L 2924/0504
- • 14th Group

- H01L 2924/05042 . . .  $\text{Si}_3\text{N}_4$
- U H01L 2924/10 . Details of semiconductor or other solid state devices to be connected
- U H01L 2924/102 . . Material of the semiconductor or solid state bodies
- U H01L 2924/1025 . . . Semiconducting materials
- U H01L 2924/1026 . . . . Compound semiconductors
- U H01L 2924/1032 . . . . . III-V
- H01L 2924/10327 . . . . . Boron arsenide [BAs,  $\text{B}_{12}\text{As}_2\text{B}_{12}\text{As}_2$ ]
- U H01L 2924/1052 . . . . . IV-VI
- H01L 2924/10524 . . . . . Tin sulfide [ $\text{SnS}$ ,  $\text{SnS}_2\text{SnS}_2$ ]
- H01L 2924/10527 . . . . . Thallium tin telluride [ $\text{Tl}_2\text{SnTe}_5$   $\text{Tl}_2\text{SnTe}_5$ ]
- H01L 2924/10528 . . . . . Thallium germanium telluride [ $\text{Tl}_2\text{GeTe}_5$   $\text{Tl}_2\text{GeTe}_5$ ]
- U H01L 2924/1057 . . . . . V-VI
- H01L 2924/10571 . . . . . Bismuth telluride [ $\text{Bi}_2\text{Te}_3$   $\text{Bi}_2\text{Te}_3$ ]
- U H01L 2924/1062 . . . . . II-V
- H01L 2924/10621 . . . . . Cadmium phosphide [ $\text{Cd}_3\text{P}_2$   $\text{Cd}_3\text{P}_2$ ]
- H01L 2924/10622 . . . . . Cadmium arsenide [ $\text{Cd}_3\text{As}_2$   $\text{Cd}_3\text{As}_2$ ]
- H01L 2924/10623 . . . . . Cadmium antimonide [ $\text{Cd}_3\text{Sb}_2$   $\text{Cd}_3\text{Sb}_2$ ]
- H01L 2924/10624 . . . . . Zinc phosphide [ $\text{Zn}_3\text{P}_2$   $\text{Zn}_3\text{P}_2$ ]
- H01L 2924/10625 . . . . . Zinc arsenide [ $\text{Zn}_3\text{As}_2$   $\text{Zn}_3\text{As}_2$ ]
- H01L 2924/10626 . . . . . Zinc antimonide [ $\text{Zn}_3\text{Sb}_2$   $\text{Zn}_3\text{Sb}_2$ ]
- U H01L 2924/1072 . . . . . Layered
- H01L 2924/10721 . . . . . Lead(II)iodide [ $\text{PbI}_2$   $\text{PbI}_2$ ]
- H01L 2924/10722 . . . . . Molybdenum disulfide [ $\text{MoS}_2$   $\text{MoS}_2$ ]
- H01L 2924/10725 . . . . . Bismuth sulfide [ $\text{Bi}_2\text{S}_3$   $\text{Bi}_2\text{S}_3$ ]
- U H01L 2924/1077 . . . . . Magnetic diluted [DMS]
- H01L 2924/10775 . . . . . Lanthanum calcium manganate [ $\text{La}_{0.7}\text{Ca}_{0.3}\text{MnO}_3$   $\text{La}_{0.7}\text{Ca}_{0.3}\text{MnO}_3$ ]
- H01L 2924/1078 . . . . . Chromium(III)bromide [ $\text{CrBr}_3$   $\text{CrBr}_3$ ]
- U H01L 2924/1082 . . . . . Other
- H01L 2924/10821 . . . . . Copper indium gallium selenide, CIGS [ $\text{Cu}[\text{In},\text{Ga}]\text{Se}_2$   $\text{Se}_2$ ]
- H01L 2924/10822 . . . . . Copper zinc tin sulfide, CZTS [ $\text{Cu}_2\text{ZnSnS}_4$   $\text{Cu}_2\text{ZnSnS}_4$ ]
- H01L 2924/10823 . . . . . Copper indium selenide, CIS [ $\text{CuInSe}_2$   $\text{CuInSe}_2$ ]
- H01L 2924/10824 . . . . . Silver gallium sulfide [ $\text{AgGaS}_2$   $\text{AgGaS}_2$ ]
- H01L 2924/10825 . . . . . Zinc silicon phosphide [ $\text{ZnSiP}_2$   $\text{ZnSiP}_2$ ]
- H01L 2924/10826 . . . . . Arsenic selenide [ $\text{As}_2\text{S}_3$   $\text{As}_2\text{S}_3$ ]
- H01L 2924/10828 . . . . . Bismuth(III)iodide [ $\text{BiI}_3$   $\text{BiI}_3$ ]
- H01L 2924/10829 . . . . . Mercury(II)iodide [ $\text{HgI}_2$   $\text{HgI}_2$ ]
- H01L 2924/10832 . . . . . Silver sulfide [ $\text{Ag}_2\text{S}$   $\text{Ag}_2\text{S}$ ]
- H01L 2924/10833 . . . . . Iron disulfide [ $\text{FeS}_2$   $\text{FeS}_2$ ]
- U H01L 2924/15 . Details of package parts other than the semiconductor or other solid state devices to be connected
- U H01L 2924/151 . . Die mounting substrate
- U H01L 2924/156 . . . Material

- U H01L 2924/15786 . . . . with a principal constituent of the material being a non metallic, non metalloid inorganic material
- H01L 2924/15787 . . . . . Ceramics, e.g. crystalline carbides, nitrides or oxides [glass ceramics **T01L224/15788**]
- U H01L 2924/161 . . Cap
- U H01L 2924/163 . . . Connection portion e.g. seal
- U H01L 2924/164 . . . . Material
- U H01L 2924/16586 . . . . . with a principal constituent of the material being a non metallic, non metalloid inorganic material
- H01L 2924/16587 . . . . . Ceramics, e.g. crystalline carbides, nitrides or oxides [glass ceramics **T01L224/16588**]
- U H01L 2924/171 . . Frame
- U H01L 2924/176 . . . Material
- U H01L 2924/17786 . . . . with a principal constituent of the material being a non metallic, non metalloid inorganic material
- H01L 2924/17787 . . . . . Ceramics, e.g. crystalline carbides, nitrides or oxides [glass ceramics **T01L224/17788**]

**Project: RP0088 (H01L)**

- D H01L 2925/00** **Details related to assemblies consisting of a plurality of individual semiconductor or other solid state devices, which are covered by the group H01L 25/00 but not provided for in its subgroups**
- D H01L 2925/03 . all the devices being of a type provided for in the same subgroup of groups H01L 27/00 to H01L 49/00 and H01L 51/00 , e.g. assemblies of rectifier diodes
- D H01L 2925/04 . . the devices not having separate containers
- D H01L 2925/065 . . . the devices being of a type provided for in group H01L 27/00
- D H01L 2925/0655 . . . . Stacked arrangements of devices

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

- U H01M 2/00** **Constructional details or processes of manufacture of the non-active parts**
- U H01M 2/02 . Cases, jackets or wrappings (working of plastics or substances in plastic state [B29](#))
- U H01M 2/025 . . {for cells or batteries working under specific conditions such as high temperature, gas diffusion, external electrolyte circulation, external supply of reactants}
- H01M 2/0252 . . . {High- temperature cells or batteries, e.g. Na-S cells, Li- $\text{Cl}_2\text{Cl}_2$  cells}
- U H01M 4/00** **Electrodes (electrodes for electrolytic processes [C25](#), { electrodes for hybrid or electric double capacitor [H01G 11/22](#)})**
- U H01M 4/02 . Electrodes composed of or comprising active material
- U H01M 4/36 . . Selection of substances as active materials, active masses, active liquids {(electrode materials of hybrid or double layer capacitors [H01G 11/30-H01G 11/50](#))}
- U H01M 4/38 . . . of elements or alloys
- U H01M 4/383 . . . . {Hydrogen absorbing alloys}
- H01M 4/385 . . . . . { of the type  $\text{LaNi}_5\text{LaNi}_5$ }

**Project: N/A (H01Q)**

- U H01Q 5/00** Arrangements for simultaneous operation of aerials on two or more different wavebands, {e.g. dual- or multi-band like arrangements for broad wavebands} ( length of elements adjustable [H01Q 9/14](#) ; combinations of separate active aerial units operating in different wavebands and connected to a common feeder system [H01Q 21/30](#) ; { non-simultaneous operation of aerials with adjustable lengths or elements [H01Q 9/14](#) ; broad/multi-band operation in general without specific features [H01Q 5/00](#) } )
- H01Q 5/0003 · {Single aerial units operating on two or more wavebands( [H01Q 5/02](#) takes precedence )}
- WARNING  
This group is no longer used for the classification of new documents as from September 1, 2011. The back log of this group is being continuously reclassified to subgroups ~~H01Q5/00G~~[H01Q 5/001](#), [H01Q 5/0024](#), [H01Q 5/0072](#) and ~~H01Q5/00P~~[H01Q 5/0093](#)
- H01Q 5/0006 · {Imbricated structures( [H01Q 5/02](#) takes precedence )}
- WARNING  
This group and subgroups thereof are no longer used for the classification of new documents as from September 1, 2011. The back log of these groups is being continuously reclassified to subgroups ~~H01Q5/00G~~[H01Q 5/001](#), [H01Q 5/0024](#), [H01Q 5/0072](#) and [H01Q 5/0093](#)

**Project: N/A (H01R)**

- U H01R 13/00** Details of coupling devices of the kinds covered by groups [H01R 12/70](#) or [H01R 24/00-H01R 33/00](#) {(electro-optical connectors [G02B 6/24](#) )}
- H01R 13/646 · Specially adapted for high-frequency, e.g. structures providing an impedance match or phase match (non-coaxed protective earth or shield arrangements [H01R 13/648](#) -[H01R 13/6599](#); coaxial connectors specifically adapted for high frequency [H01R 24/40](#)- [H01R 24/56](#))
- WARNING  
This group and its subgroups are not complete pending completion of a reclassification, see also [H01R 9/035](#), [H01R 13/6658](#), [H01R 24/44](#), ~~H01R23/00B~~[H01R 23/005](#), ~~H01R23/68D~~[H01R 23/6873](#), [H01R 23/688](#)
- U H01R 13/648 · Protective earth or shield arrangements on coupling devices (coaxially arranged shields [H01R 24/38](#)){ e.g. anti-static shielding}
- H01R 13/658 · High frequency shielding arrangements, e.g. against EMI [Electro-Magnetic Interference] or EMP [Electro-Magnetic Pulse] {(coaxial coupling devices specially adapted for high frequency [H01R 24/40](#); for flat or ribbon cable connectors [H01R 12/774](#); for coaxial cable [H01R 9/05](#))}
- WARNING  
This group is not complete pending reclassification, see also ~~H01R9/03S~~[H01R 9/032](#), [H01R 13/658](#), [H01R 23/6873](#) and their respective subgroups
- U H01R 13/66 · Structural association with built-in electrical component (Coupling devices having concentrically or coaxially-arranged contacts [H01R 24/38](#)-[H01R 24/56](#))
- U H01R 13/6608 · {with built-in single component ([H01R 13/68](#), [H01R 13/70](#) take precedence)}
- H01R 13/6641 · · { with diode (with LED ~~H01R13/717L~~[H01R 13/7175](#))}

## H01R 24/00

Two-part coupling devices, or either of their cooperating parts, characterised by their overall structure (specially adapted for printed circuits, flat or ribbon cables, or like structures [H01R 12/00](#); specially adapted for supporting apparatus [H01R 33/00](#))

NOTE

In this group, it is desirable to add the indexing codes of groups [H01R101/00](#) to [H01R107/00](#)

In this group, it is desirable to add the indexing codes of groups [H01R101/00](#) to [H01R107/00](#)

WARNING

This group and its subgroups are not complete pending reclassification; see also groups [H01R15/00](#), [H01R 2201/16](#), [H01R19/00](#), [H01R 2201/16](#), [H01R21/02](#) and their respective subgroups, and [H01R 23/00](#), [H01R 23/26](#), [H01R 23/27](#)

This group and its subgroups are not complete pending reclassification; see also groups [H01R 2201/16](#), [H01R 2201/16](#) and their respective subgroups, and [H01R 23/00](#), [H01R 23/26](#), [H01R 23/27](#)

## Project: N/A (H01S)

## H01S

## DEVICES USING STIMULATED EMISSION

NOTE

This subclass covers:

devices for the generation or amplification, by using stimulated emission, of coherent electromagnetic waves or other forms of wave energy; such functions as modulating, demodulating, controlling, or stabilising such waves.

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:

- [H01S 3/098](#) covered by [H01S3/08M](#)[H01S 3/08018](#), [H01S 3/11](#) and s.gr.

## U H01S 3/00

**Lasers, i.e. devices for generation, amplification, modulation, demodulation, or frequency-changing, using stimulated emission, of infra-red, visible, or ultra-violet waves({ stimulated Brillouin or Raman effects [H01S 3/30](#) } ; semiconductor lasers [H01S 5/00](#) )**

## U H01S 3/14

• characterised by the material used as the active medium

## U H01S 3/16

• • Solid materials

## U H01S 3/163

• • • {characterised by a crystal matrix}

## U H01S 3/1631

• • • • {aluminate}

## H01S 3/1633

• • • • • {[BeAl2O4](#)[BeAl2O4](#) i.e. Chrysoberyl}

## H01S 3/1635

• • • • • {[LaMgAl11O19](#)[LaMgAl11O19](#)(LNA, Lanthanum Magnesium Hexaluminate)}

## U H01S 3/1645

• • • • {halide}

## H01S 3/1646

• • • • • {[BaY2F8](#)[BaY2F8](#)}

## H01S 3/1651

• • • • • {[SrAlF5](#)[SrAlF5](#)}

## H01S 3/1653

• • • • • {[YLiF4](#)[YLiF4](#)(YLF, LYF)}

## U H01S 3/1655

• • • • {silicate}

## H01S 3/1658

• • • • • {[Mg2SiO4](#)[Mg2SiO4](#) (Forsterite)}

- H01S 3/166 . . . . . {[La<sub>3</sub>Ga<sub>5</sub>SiO<sub>14</sub>](#)[La<sub>3</sub>Ga<sub>5</sub>SiO<sub>14</sub>](#) (LGS)}
- H01S 3/1661 . . . . . {[Y<sub>2</sub>SiO<sub>5</sub>](#)[Y<sub>2</sub>SiO<sub>5</sub>](#) (YSO)}
- U H01S 3/1663 . . . . . {beryllate}
- H01S 3/1665 . . . . . {[La<sub>2</sub>Be<sub>2</sub>O<sub>5</sub>](#)[La<sub>2</sub>Be<sub>2</sub>O<sub>5</sub>](#) (BEL)}
- U H01S 3/1671 . . . . . {vanadate, niobate, tantalate}
- H01S 3/1673 . . . . . {[YVO<sub>4</sub>](#)[YVO<sub>4</sub>](#) (YVO)}
- U H01S 3/1675 . . . . . {titanate, germanate, molybdate, tungstate}
- H01S 3/1676 . . . . . {[Li<sub>4</sub>Ge<sub>5</sub>O<sub>12</sub>](#)[Li<sub>4</sub>Ge<sub>5</sub>O<sub>12</sub>](#)}
- H01S 3/1678 . . . . . {[LaBGeO<sub>5</sub>](#)[LaBGeO<sub>5</sub>](#)}
- U H01S 3/17 . . . . . amorphous, e.g. glass{( glass manufacture, shaping or supplementary processes [C03B](#); compositions for laserable glass [C03C 4/0071](#) )}
- H01S 3/173 . . . . . {fluoride glass, e.g. fluorozirconate or ZBLAN [[ZrF<sub>4</sub>ZrF<sub>4</sub>](#)[BaF<sub>2</sub>BaF<sub>2</sub>](#)[LaF<sub>3</sub>LaF<sub>3</sub>](#)[AlF<sub>3</sub>AlF<sub>3</sub>](#)-NaF]}
- U H01S 3/22 . . . . . Gases
- U H01S 3/223 . . . . . the active gas being polyatomic, i.e. containing more than one atom([H01S 3/227](#) takes precedence )
- H01S 3/2237 . . . . . {Molecular nitrogen ([N<sub>2</sub>N<sub>2</sub>](#)), e.g. in noble gas-[N<sub>2</sub>N<sub>2</sub>](#) systems}

**Project: N/A (H02P)**

- U H02P 7/00 **Arrangements for regulating or controlling the speed or torque of electric DC motors (starting [H02P 1/00](#); stopping or slowing [H02P 3/00](#); { synchronous motors or other dynamo-electric motors with electronic commutators in dependence on the rotor position [H02P 6/00](#); motors rotating step by step [H02P 8/00](#);} vector control [H02P 21/00](#))**
- U H02P 7/06 . . . . . for regulating or controlling an individual dc dynamo-electric motor by varying field or armature current
- U H02P 7/18 . . . . . by master control with auxiliary power
- U H02P 7/24 . . . . . using discharge tubes or semiconductor devices
- U H02P 7/28 . . . . . using semiconductor devices
- NOTE
- Group [H02P 7/281](#) takes precedence over groups [H02P 7/282](#) to [H02P 7/298](#)
- U H02P 7/281 . . . . . {the DC-motor being operated in the four quadrants}
- H02P 7/2815 . . . . . {whereby the speed is regulated by measuring the motor speed and comparing it with a given physical value}
- NOTE
- Groups [H02P 7/2815](#)takes precedence over groups **[H02P7/28R](#)**  
~~[H02P 7/2825](#) , [H02P 7/2855](#)~~

**Project: N/A (H03H)**

- U H03H 7/00 **Multiple-port networks comprising only passive electrical elements as network components( receiver input circuits [H04B 1/18](#) ; networks simulating a length of communication cable [H04B 3/40](#) )**
- U H03H 7/01 . . . . . Frequency selective two-port networks

- H03H 7/17
- {Structural details of sub-circuits of frequency selective networks}
- WARNING  
not complete, pending reorganisation, see provisionally also **H03H7/01A** [H03H 7/0107](#), [H03H 7/0123](#) to [H03H 7/07](#), [H03H 7/09](#) to [H03H 7/13](#) and [H03H 7/42](#)
- U H03H 7/42
- Balance/unbalance networks
- H03H 7/425
- {Balance-balance networks}
- WARNING  
not complete, pending reorganisation, see provisionally also [H03H 1/00](#) to **H03H1/00A**[H03H 1/0007](#), **H03H7/01A**[H03H 7/0107](#), [H03H 7/0123](#) to [H03H 7/07](#), [H03H 7/09](#) to [H03H 7/13](#), [H03H 7/42](#) and **H03H7/42B** [H03H 7/422](#)
- H03H 7/427
- • {Common-mode filters( [H02J 3/01](#) and [H02M 1/126](#) takes precedence )}
- WARNING  
not complete, pending reorganisation, see provisionally also [H03H 1/00](#) to **H03H1/00A**[H03H 1/0007](#), **H03H7/01A**[H03H 7/0107](#), [H03H 7/0123](#) to [H03H 7/07](#), [H03H 7/09](#) to [H03H 7/13](#) and [H03H 7/42](#)

**Project: RP0062 (H03M)**

- U H03M 3/00
- Conversion of analogue values to or from differential modulation**
- H03M 3/04
- Differential modulation with several bits, e.g. differential pulse code modulation [DPCM] ({~~-~~[H03M 3/30](#) takes precedence; voice coding [G10L 19/00](#); image coding ~~H04N 7/26~~ [H04N 19/00](#)})

**Project: N/A (H03M)**

- U H03M 7/00
- Conversion of a code where information is represented by a given sequence or number of digits to a code where the same information{or similar information or a subset of information}is represented by a different sequence or number of digits**
- H03M 7/02
- Conversion to or from weighted codes, i.e. the weight given to a digit depending on the position of the digit within the block or code word({~~Booth encoders~~ **G06F7/52C2D1**, **G06F7/52C2D2A** )}

**Project: RP0062 (H03M)**

- U H03M 7/30
- Compression( speech analysis-synthesis for redundancy reduction [G10L 19/00](#) ; for image communication [H04N](#) ); Expansion; Suppression of unnecessary data, e.g. redundancy reduction({ for data acquisition [G06F 17/40](#) ; for image data processing [G06T 9/00](#) ; redundancy reduction in data recording [G11B 20/14](#) ; for transmission [H04B 1/66](#) )}
- U H03M 7/3002
- {Conversion to or from differential modulation}
- H03M 7/3044
- • {Conversion to or from differential modulation with several bits only, i.e. the difference between successive samples being coded by more than one bit, e.g. differential pulse code modulation [DPCM] (~~-~~[H03M 7/3004](#) takes precedence; voice coding [G10L 19/00](#); image coding~~-~~[H04N 7/26](#) [H04N 19/00](#))}
- H03M 7/3082
- {Vector coding (~~-~~for television signals, see ~~H04N 7/28~~ [H04N 19/94](#))}

## 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 13/03 • Error detection or forward error correction by redundancy in data representation, i.e. code words containing more digits than the source words
- U H03M 13/05 • • using block codes, i.e. a predetermined number of check bits joined to a predetermined number of information bits{( [H03M 13/2906](#) takes precedence )}
- U H03M 13/13 • • • Linear codes
- H03M 13/132 • • • • {Algebraic geometric codes, e.g. Goppa codes}
- WARNING  
[H03M 13/13-A](#)[H03M 13/132](#) - [H03M 13/138](#) are not complete, see provisionally also [H03M 13/13](#)
- U H03M 13/29 • combining two or more codes or code structures, e.g. product codes, generalised product codes, concatenated codes, inner and outer codes
- H03M 13/2933 • • {using a block and a convolutional code( [H03M 13/2957](#) takes precedence )}
- WARNING  
[H03M 13/29-C](#)[H03M 13/2933](#) - [H03M 13/2954](#) are not complete, see provisionally also [H03M 13/29](#)
- H03M 13/33 • Synchronisation based on error coding or decoding{( for transmission [H04L 7/048](#) )}
- WARNING  
Groups [H03M 13/33-F](#)[H03M 13/333](#) - [H03M 13/336](#) are not complete pending reclassification; see also this group
- H03M 13/333 • • {Synchronisation on a multi-bit block basis, e.g. frame synchronisation}
- WARNING  
[H03M 13/33-F](#)[H03M 13/333](#) - [H03M 13/336](#) are not complete, see provisionally also [H03M 13/33](#)
- U H03M 13/37 • Decoding methods or techniques, not specific to the particular type of coding provided for in groups [H03M 13/03](#) to [H03M 13/35](#)
- H03M 13/3707 • • {Adaptive decoding and hybrid decoding, e.g. decoding methods or techniques providing more than one decoding algorithm for one code}
- WARNING  
[H03M 13/37-A](#)[H03M 13/3707](#) - [H03M 13/3792](#) are not complete, see provisionally also [H03M 13/37](#)
- U H03M 13/39 • • Sequence estimation, i.e. using statistical methods for the reconstruction of the original codes

- H03M 13/3944
- • {for block codes, especially trellis or lattice decoding thereof}
- WARNING  
~~H03M 13/39 B~~~~H03M 13/3944~~ - [H03M 13/3994](#) are not complete, see provisionally also [H03M 13/39](#)
- U H03M 13/45
- • Soft decoding, i.e. using symbol reliability information( [H03M 13/41](#) takes precedence )
- H03M 13/451
- • {using a set of candidate code words, e.g. ordered statistics decoding [OSD]}
- WARNING  
~~H03M 13/45 C~~~~H03M 13/451~~ - [H03M 13/458](#) are not complete, see provisionally also [H03M 13/45](#)

**Project: N/A (H04B)****H04B**

**TRANSMISSION**(transmission systems for measured values, control or similar signals [G08C](#); coding, decoding, code conversion, in general [H03M](#); broadcast communication [H04H](#); multiplex systems [H04J](#); secret communication [H04K](#); transmission of digital information [H04L](#))

NOTE

This subclass covers the transmission of information-carrying signals, the transmission being independent of the nature of the information, and includes monitoring and testing arrangements and the suppression and limitation of noise and interference.

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:

~~H04B 10/04~~ covered by ~~H04B 10/50~~ ~~H04B 10/06~~  
~~covered by~~ ~~H04B 10/60~~ ~~H04B 10/08~~ ~~covered by~~  
~~H04B 10/07~~ ~~H04B 10/10~~ ~~covered by~~ ~~H04B 10/11~~  
~~H04B 10/13~~ ~~covered by~~ ~~H04B 10/2581~~ ~~H04B 10/26~~  
~~covered by~~ ~~H04B10/24B~~ ~~H04B 10/28~~ ~~covered by~~  
~~H04B 10/43~~

- 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](#)

- H04B 1/38
- Transceivers, i.e. devices in which transmitter and receiver form a structural unit and in which at least one part is used for functions of transmitting and receiving{( construction of portable transceivers [H04B 1/034](#) ; specially adapted to be fitted into airplanes [B64D 43/00](#) ; paging systems [G08B 3/10](#) ; traffic between a small number of stations with amplifiers or loudspeakers ~~H04M9/00A~~~~H04M 9/001~~; selecting arrangements for radio-calling systems [H04W](#) ; wireless communication networks [H04W](#) )}
- U H04B 1/40
- • Circuits
- U H04B 1/54
- • • using the same frequency for both directions of communication( [H04B 1/44](#) takes precedence )

- H04B 1/58
- • • Hybrid arrangements, i.e. for transition from single-path two-way transmission to single transmission on each of two paths, or vice-versa{ ( multiport networks [H03H 7/48](#) ; for two-way amplifiers [H03F 3/62](#) ; in multiplex communication [H04J 1/10](#) ; balance/unbalance networks [H03H 7/42](#) , [H03H 11/32](#) ; ~~construction of transformers 95G2, H01F~~; [construction of transformers 95G2, H01F](#); conjugate coupling devices of the waveguide type [H01P 5/16](#) )}
- H04B 1/66
- for reducing bandwidth of signals(in pictorial communication systems [H04N](#)); for improving efficiency of transmission( [H04B 1/68](#) takes precedence; ~~{vocoders 42T2B, G10L}~~; [{vocoders 42T2B, G10L}](#) )}

**Project: RP0062 (H04B)**

- H04B 1/667
- {using a division in frequency subbands (-for TV signals ~~H04N 7/26388~~ [H04N 19/63](#))}

**Project: N/A (H04H)**

- U H04H 60/00 Arrangements for broadcast applications with a direct linking to broadcast information or broadcast space-time; Broadcast-related systems**
- U H04H 60/68
- Systems specially adapted for using specific information, e.g. geographical or meteorological information
- H04H 60/72
- • using EPGs (Electronic Programme Guides)(focusing on identifying broadcast space-time [H04H 60/39](#); { menu type display of EPG in television receivers ~~H04N5/445M~~[H04N 5/44543](#)})

**Project: N/A (H04L)**

**H04L TRANSMISSION OF DIGITAL INFORMATION, e.g. TELEGRAPHIC COMMUNICATION**(typewriters [B41J](#); order telegraphs, fire or police telegraphs [G08B](#); visual telegraphy [G08B](#), [G08C](#); teleautographic systems [G08C](#); ciphering or deciphering apparatus per se [G09C](#); coding, decoding or code conversion, in general [H03M](#); arrangements common to telegraphic and telephonic communication [H04M](#); selecting [H04Q](#))

NOTE

This subclass covers transmission of signals having been supplied in digital form and includes data transmission, telegraphic communication and methods or arrangements for monitoring.

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="#">H04L 12/20</a>	covered by	<a href="#">H04L 29/00</a>
<a href="#">H04L 25/04</a>	"	<a href="#">H04L 25/03</a>
<a href="#">H04L 25/17</a>	"	<a href="#">H03H</a>
<a href="#">H04L 25/18</a>	"	<b><a href="#">H04L25/02G1C</a></b>
<a href="#">H04L 25/28</a>	"	<b><a href="#">H04L25/02G1A</a></b>
<a href="#">H04L 25/30</a>	"	<a href="#">H04L 25/061</a>
<a href="#">H04L 25/32</a>	"	<a href="#">H04L 25/49</a>
<a href="#">H04L 25/34</a>	"	<a href="#">H04L 25/4917</a>
<b><a href="#">H04L25/36</a></b> <a href="#">H04L 25/36</a>	"	"
<a href="#">H04L 25/48</a>	"	<a href="#">H04L 25/49</a>
<b><a href="#">H04L25/50</a></b> <a href="#">H04L 25/50</a>	"	<b><a href="#">H04L25/02A</a></b>
<a href="#">H04L 25/52</a>	"	<a href="#">H04L 25/20</a>
<a href="#">H04L 25/54</a>	"	<a href="#">H04L 25/20</a>
<a href="#">H04L 25/56</a>	"	<a href="#">H04L 25/202</a>
<a href="#">H04L 25/58</a>	"	<a href="#">H04L 25/20</a>
<a href="#">H04L 25/60</a>	"	<a href="#">H04L 25/207</a>

H04L 25/62 " [H04L 25/205](#)  
H04L 25/64 " [H04L 25/245](#)  
H04L 25/66 " [H04L 25/247](#)

- 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 12/2401 · · · {involving integration or standardization}  
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 41/02](#)
- H04L 12/2404 · · · · {Multivendor or multistandard integration}  
WARNING  
WARNING: This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to **H04L41/02C**[H04L 41/022](#) ]
- 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](#)
- U H04L 12/2465 · · · · {Managing SLA [Service Level Agreement]or interaction between SLA and QoS [Quality of Service]}  
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 41/5003](#)
- H04L 12/2472 · · · · · {Ensuring SLA( flow or congestion control at network level [H04L 12/569](#) )}  
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 **H04L41/50B**[H04L 41/5019](#)
- H04L 12/2476 · · · · · {Generating service level reports}  
WARNING  
This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to **H04L41/50D**[H04L 41/5032](#)

- H04L 12/2485 . . . {Customer care}  
WARNING  
 This subgroup is no longer used for classification as from 01.05.2012.  
 The backlog of this subgroup is being continuously reclassified to  
**H04L41/50J**H04L 41/5061
- U H04L 12/28 . characterised by path configuration, e.g. local area networks (LAN), wide area networks (WAN)
- U H04L 12/2803 . . {Home automation networks}
- U H04L 12/2807 . . . {Exchanging configuration information on appliance services in a home automation network( adress allocation [H04L 29/12207](#) ; arrangements for maintenance or administration involving network analysis for automatically determining the actual topology of a network [H04L 12/2416](#) ; hardware or software tools for network management using graphical user interfaces [H04L 12/2458](#) )}
- H04L 12/2812 . . . {describing content present in a home automation network, e.g. audio video content( retrieval from the Internet **G06F17/30W**G06F 17/30861)}
- H04L 12/2814 . . . {Exchanging control software or macros for controlling appliance services in a home automation network( arrangements for maintenance or administration involving configuration of the network and network elements **H04L12/24E**H04L 12/2424)}
- U H04L 12/2816 . . . {Controlling appliance services of a home automation network by calling their functionalities( arrangements in telecontrol or telemetry systems for selectively calling a substation from a main station; in which substation desired apparatus is selected for applying a control signal thereto or for obtaining measured values therefrom [H04Q 9/00](#) )}
- H04L 12/2818 . . . {from a device located outside both the home and the home network( access arrangements [H04L 12/2856](#) ; protocols for network applications involving the use of web-based technology for remote control or remote monitoring [H04L 29/08099](#) ; telephonic communication systems adapted for combination with remote control systems **H04M11/00B**H04M 11/007; arrangements for transmitting signals characterised by the use of a wireless eletrical link [G08C 17/00](#) )}
- H04L 12/282 . . . {based on user interaction within the home( receiver circuitry for displaying additional information being controlled by a remote control apparatus **H04N5/445R**H04N 5/44582)}
- H04L 12/2821 . . . {Avoiding conflicts related to the use of home appliances( arrangements for network security **H04L29/06S**H04L 29/06551)}
- U H04L 12/2823 . . . {Reporting information sensed by appliance or service execution status of appliance services in a home automation network( device-related reporting [H04L 43/065](#) ; arrangements in telecontrol or telemetry systems for selectively calling a substation from a main station, in which substation desired apparatus is selected for applying a control signal thereto or for obtaining measured values therefrom [H04Q 9/00](#) )}
- H04L 12/2825 . . . {Reporting to a device located outside the home and the home network( access arrangements [H04L 12/2856](#) ; protocols for network applications involving the use of web-based technology for remote control or remote monitoring [H04L 29/08099](#) ; telephonic communication systems adapted for combination with telemetering systems **H04M11/00A**H04M 11/002)}
- U H04L 12/283 . . . {Processing of data at an internetworking point of a home automation network}

- H04L 12/2836
- • • {Protocol conversion between an external network and a home network( protocol conversion [H04L29/06E](#)[H04L 29/06068](#); adaptation of digital video signals for transport over a specific home network [H04N7/24T6](#) ; controlling appliance services of a home automation network from a device located outside the home and the home network [H04L 12/2818](#) )}
- H04L 12/2838
- • • {Distribution of signals within a home automation network, e.g. involving splitting/multiplexing signals to/from different paths( adaptations of television systems for transmission by electric cable for domestic distribution [H04N7/10H](#)[H04N 7/106](#); hybrid transport [H04L12/64B](#) [H04L 12/6418](#); home network arrangements specially adapted for distribution of digital video signals [H04N7/24N](#))}
- U H04L 12/2854
- {Wide area networks, e.g. public data networks}
- H04L 12/2856
- • • {Access arrangements, e.g. Internet access( asynchronous transfer mode networks [H04L 12/5601](#) ; broadband local area networks [H04L 12/2801](#) ; optical access or distribution networks [H04Q 11/0067](#) ; access to open networks [H04L 12/5691](#) ; digital subscriber line end-user equipment and bit-level processing of data on a PSTN-based network [H04M 11/00](#) ; home network gateways [H04L 12/2834](#) ; wireless access networks [H04W](#) )}

#### NOTE

(1) This group covers:

- access to a public data network, such as an IP network, for subscribers, i.e. customers of a network service provider, over a wired network.
- communication of generic types of data between end-user equipments, located typically at the subscriber premises, and an access server, which acts as interface between the access network and the public data network.

(2) This group does not cover:

- wireless access networks, which are covered by [H04W](#)
- optical distribution networks, which are covered by [H04Q 11/0067](#)
- bit-level, or PHY layer, processing of data between digital subscriber line equipments, which is covered by [H04M 11/06](#)
- design of DSL, digital subscriber line, modems, which is covered by [H04M 11/06](#)
- exchange of data related to functionalities of home network appliances between a home network and an external network, which is covered by [H04L12/28H](#)[H04L 12/2803](#)
- management of WDM parameters in optical multiplex systems, which is covered by [H04J 14/02](#)
- circuit-switched access networks, which are covered by [H04M7/12H](#) [H04M 7/1205](#)
- access arrangements for providing telephone service in networks other than PSTN/ISDN, which are covered by [H04M 7/0066](#)

(3) In this group the following terms or expressions are used with the meaning indicated:

- ATM means Asynchronous Transfer Mode
- LAN means Local Area Network
- BRAS means Broadband Remote Access Server
- DSLAM means Digital Subscriber Line Access Multiplexer
- MSAN means MultiService Access Node
- DSL means Digital Subscriber Line
- IP means Internet Protocol
- WDM means Wavelength Division Multiplexing
- SDH means Synchronous Digital Hierarchy
- OTN means Optical Transport Network
- PSTN means Public Switched Telephone Network
- ISDN means Integrated Services Digital Network
- TDM means Time-Division Multiplexing

- TDMA means Time Division Multiple Access

WARNING

Subgroups of [H04L 12/2856](#) are not complete pending reorganisation. See also [H04L 12/5691](#)

- U H04L 12/40
  - • Bus networks
- U H04L 12/40052
  - • • {High-speed IEEE 1394 serial bus( bus transfer protocol on a daisy chain bus using an embedded synchronisation [G06F 13/426](#) )}
- H04L 12/40065
  - • • • {Bandwidth and channel allocation( home automation networks [H04L12/28H](#)[H04L 12/2803](#); flow control [H04L12/56D](#)[H04L 12/569](#))}
- H04L 12/40071
  - • • • {Packet processing; Packet format( packet switches [H04L12/56S](#)[H04L 12/5696](#); intermediate storage or scheduling [H04L12/56Q](#)[H04L 12/5694](#); Adaptation of digital video signals for transport over a specific network [H04N7/24T6](#)[H04N 21/2381](#), [H04N 21/4363](#), [H04N 21/4381](#) )}
- H04L 12/40078
  - • • • {Bus configuration( home automation networks [H04L12/28H](#)[H04L 12/2803](#); Arrangements for maintenance or administration [H04L 12/24](#) )}
- H04L 12/40104
  - • • • {Security; Encryption; Content protection( arrangements for network security [H04L29/06S](#)[H04L 29/06551](#))}
- H04L 12/40117
  - • • • {Interconnection of audio or video/imaging devices( home automation networks [H04L12/28H](#)[H04L 12/2803](#); bitstream network arrangements specially adapted for distribution of digital video signals [H04N7/24N](#))}
- H04L 12/40123
  - • • • {Interconnection of computers and peripherals( printer information exchange with computer [G06F3/12C](#)[G06F 3/1293](#))}
- U H04L 12/403
  - • • with centralised control, e.g. polling
- H04L 12/4035
  - • • • {in which slots of a TDMA packet structure are assigned based on a contention resolution carried out at a master unit( TDM/TDMA multiplex systems per se [H04J3/16D](#)[H04J 3/1694](#); hybrid switching systems [H04L 12/64](#) )}
- U H04L 12/42
  - • Loop networks
- H04L 12/422
  - • • {Synchronisation for ring networks( Time Division Multiplex ring networks, e.g. SDH/SONET [H04J3/08A](#)[H04J 3/085](#))}
- U **H04L 27/00** **Modulated-carrier systems**{( code shift keying in combination with frequency multiplexing [H04L 5/06](#) ; simultaneous bidirectional transmission of ac signals [H04L 5/143](#) ; code shift keying [H04L 23/02](#) ; polarisation shift keying [H04B 14/008](#) ; transmission of data during the active part of a television frame [H04N 7/025](#) )}
- U H04L 27/0014
  - {Carrier regulation( of chaotic carriers [H04L 27/001](#) ; for multicarrier receivers [H04L 27/2657](#) )}
- U H04L 2027/0044
  - • {Control loops for carrier regulation}
- U H04L 2027/0063
  - • • {Elements of loops}
- H04L 2027/0065
  - • • • {Frequency error detectors( ~~T04L27-00R7E3~~[H04L 2027/0067](#) takes precedence )}
- 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
- U H04L 29/08      · · · Transmission control procedure, e.g. data link level control procedure
- 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 29/08558    · · · · · {adapted for proprietary or special purpose networking environments, e.g. medical networks, sensor networks, networks in a car( digital computing or data processing equipment or methods, specially adapted for specific applications [G06F 19/00](#) ; home automation networks [H04L12/28H04L 12/2803](#); total factory control characterised by the network communication [G05B19/418NG05B 19/4185](#); games involving transmission [A63F 13/30](#) )}
- H04L 29/08648   · · · · · {Arrangements for service discovery, e.g. Service Location Protocol(SLP)( address allocation to terminals or nodes connected to a network [H04L29/12AH04L 29/12009](#))}
- H04L 29/08675   · · · · · {Arrangements for tracking the activity of the application user( monitoring arrangements in general [H04L12/26MH04L 12/2602](#); e-ommerce [G06Q 30/00](#) )}
- H04L 29/08684   · · · · · {Arrangements for presence management( instant messaging [H04L12/58BH04L 12/581](#))}

**Project: RP0062 (H04L)**

- U H04L 29/08702   · · · · · {involving intermediate processing or storage in the network, e.g. proxy( billing provisions [H04L 12/14](#) ; network management provisions [H04L 12/24](#) ; monitoring provisions [H04L 12/2602](#) ; multimedia network architectures; gateways and control entities [H04L 29/0621](#) ; multimedia handling; encoding and conversion [H04L 29/06476](#) ; security provisions [H04L 29/06551](#) ; addressing provisions [H04L 29/12009](#) )}

WARNING

The subgroups [H04L 29/08711](#) , [H04L 29/08738](#) to [H04L 29/08783](#) , and [H04L 29/08801](#) to [H04L 29/08855](#) are not complete pending reorganisation. See also [H04L 29/0872](#) , [H04L 29/08729](#) and [H04L 29/08792](#) )

- H04L 29/08783    · · · · · · {Arrangements for reducing the amount or size of exchanged application data (-protocols for header compression [H04L 29/0604](#)-; optimizing visualization of content [G06F 17/30905](#)-; digital video compression-[H04N 7/26](#) [H04N 19/00](#))}
- H04L 29/08792    · · · · · · {Arrangements for data reduction and/or adaptation (-protocols for data compression [H04L 29/0604](#)-; optimising the visualization of content [G06F 17/30905](#)-; digital video signal compression-[H04N 7/26](#) [H04N 19/00](#))}

WARNING

This group is no longer used for the classification of new documents as from December 1, 2009. The backlog of this group is being continuously reclassified to the subgroups [H04L 29/08711](#) to [H04L 29/08909](#)

**Project: N/A (H04L)**

- H04L 29/08945 . . . . {Arrangements for scheduling and organising the servicing of requests, e.g. requests for data transmissions involving the analysis and optimisation of the requires network resources( broadcast or conference with schedule organisation **H04L12/18S**[H04L 12/1881](#))}
- 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 29/12047 . . . {Directories; name-to-address mapping( telephone directories in user terminals [H04M 1/27](#) )}
- 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 61/15](#)
- H04L 29/12169 . . . . {Metadirectories, i.e. all encompassing global directory which interfaces to various underlying directories}
- WARNING**  
 This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to **H04L61/15I**[H04L 61/1576](#)
- H04L 29/12198 . . . . {Address books, i.e. directories containing contact information about correspondents, e.g. on a user device( directories providing the best way to reach a correspondent [H04L 29/12122](#) )}
- WARNING**  
 This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to **H04L61/15L**[H04L 61/1594](#)
- 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 29/12264 . . . . {involving the solving of address allocation conflicts; involving testing 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 **H04L61/20C**[H04L 61/2046](#)

- U H04L 29/1233 . . . {Mapping of addresses of the same type; Address translation}  
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 61/25](#)
- H04L 29/12339 . . . . {Internet Protocol (IP) address translation}  
WARNING  
 This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to ~~H04L61/25A~~[H04L 61/2503](#)
- H04L 29/12584 . . . . {Non-IP address translation}  
WARNING  
 This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to ~~H04L61/25B~~[H04L 61/2596](#)
- 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](#)
- H04L 29/12943 . . . . {Short 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 ~~H04L61/60G~~[H04L 61/6072](#)
- 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 do not correspond to former or current IPC groups.  
 Concordance CPC : IPC for this groups is as follows:  
 - [H04L 47/00](#) - ~~H04L47/82J~~[H04L 47/829](#) : [H04L 12/56](#)
- 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 ~~H04L12/24E~~  
[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 : **H04L61/60L**
- 61/60L : [H04L 29/12](#)

#### H04L 65/00

{Network arrangements or protocols for real-time communications( computer conference [H04L 12/1813](#) ; real time or near real time messaging in message switching systems e.g. instant messaging [H04L 12/581](#) ; television systems [H04N 7/00](#) ; selective video distribution [H04N 21/00](#); 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 67/00](#) )}

#### NOTE

#### WARNING

Groups [H04L 65/00](#) - [H04L 65/80](#) do not correspond to former or current IPC groups. Concordance CPC : IPC for these groups is as follows: - [H04L 65/00](#) - [H04L 65/80](#) : [H04L 29/06](#) ] Notes 1. This group covers: - only communications which fulfill the following two conditions: i. they are based on packet data; ii. 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 a. the transmission of the multimedia data itself, b. the user-to-user, user-to-network, inter-network or intra-network signalling supporting: b1. the establishment of a session for the subsequent transmission of the multimedia data, or b2. the maintenance of the session or b3. 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 67/06](#) - multimedia store or forward messaging as in e-mail, MMS or the like, which is covered by [H04L 12/58](#) - analogue video streaming, as in analogue television systems, which is covered by [H04N 7/00](#) - selective distribution of MPEG elementary or transport streams, containing video and additional data, which is covered by [H04N 21/00](#) - bit streaming, i.e. not packet-based, as in ISDN which is covered by [H04Q 11/0428](#) - 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 - flow control in packet switching networks, which is covered by ~~H04L 12/56D~~ [H04L 12/569](#). 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 - RTSP means Real Time Streaming Protocol. - SIP means Session Initiation Protocol - SPAM means unsolicited electronic mail - SPIT means SPAM Prevention in IP Telephony]

**Project: RP0062 (H04L)**

- 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 67/28** . {for the provision of proxy services, e.g. intermediate processing or storage in the network( network management provisions [H04L 12/24](#) ; network monitoring provisions [H04L 12/2602](#) ; media manipulation, adaptation or conversion in real-time communications [H04L 65/601](#) ; protocol conversion [H04L 69/08](#) ; proxies for network security [H04L 63/0281](#) )}
- U H04L 67/2823** . . {for conversion or adaptation of application content or format( protocol conversion [H04L 69/08](#) ; media manipulation, adaptation or conversion in real-time communications [H04L 65/601](#) ; message adaptation based on network or terminal capabilities [H04L 12/5825](#) ; optimising visualization of content for web browsing [G06F 17/30905](#) )}
- H04L 67/2828** . . . {for reducing the amount or size of exchanged application data (-protocols for data compression [H04L 69/04](#)-; digital video compression-~~[H04N 7/26](#)~~ [H04N 19/00](#))}

**Project: N/A (H04M)**

- U H04M 15/00** Arrangements for metering, time-control or time indication { ; Metering, charging or billing arrangements for voice wireline or wireless communications, e.g. VoIP}

H04M 15/02

- Severing connection after predetermined time

WARNING

This subgroup is no longer used for classification as from 01.05.2012. The backlog of this subgroup is being continuously reclassified to **H04M15/88G**  
**H04M 15/888**

**Project: RP0062 (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 :

- ~~H04N5/31~~ ~~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 7/38~~
- ~~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](#)

#### Project: N/A (H04N)

##### U H04N 1/00

**Scanning, transmission or reproduction of documents or the like, e.g. facsimile transmission; Details thereof({ recording arrangements for measuring instruments [G01D](#) ; sensing record carriers [G06K 7/00](#) ; character or pattern recognition [G06K 9/00](#) ; mosaic printer telegraph systems [H04L 21/00](#) )}**

- U H04N 1/00127 · {Connection or combination of a still picture apparatus with another apparatus, e.g. for storage, processing or transmission of still picture signals or of information associated with a still picture}
- U H04N 1/00281 · · {with a telecommunication apparatus, e.g. a switched network of teleprinters for the distribution of text-based information, a selective call terminal( details of transmission [H04N 1/00095](#) ; establishing a communication with one of a facsimile machine or another apparatus sharing a single line [H04N 1/32704](#) ; interfacing cordless telephone terminals with an accessory to increase the functionality of user interface [H04M 1/72527](#) )}
- H04N 1/00307 · · · {with a mobile telephone apparatus( constructional features of portable telephone sets ~~H04M1/02A~~[H04M 1/0202](#); mobile radio systems [H04W 84/00](#) )}
- H04N 1/00344 · · {with a management, maintenance, service or repair apparatus( monitoring ~~H04N1/00A~~[H04N 1/00002](#))}

#### Project: RP0062 (H04N)

##### H04N 1/41

- Bandwidth or redundancy reduction( by scanning [H04N 1/17](#) ; { ~~H04N 7/26~~[H04N 19/00](#) takes precedence; for data acquisition [G06F 17/40](#) ; coding for image data processing in general [G06T 9/00](#) ; data compression in general [H03M 7/30](#) )}

- U H04N 1/46  
H04N 1/64
- Colour picture communication systems{( colorimetry [G01J 3/46](#) )}
  - • Systems for the transmission or the storage of the colour picture signal; Details therefor, e.g. coding or decoding means therefor{( [H04N 7/26](#)[H04N 19/00](#) takes precedence )}
- 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 5/14  
H04N 5/144  
H04N 5/145
- Picture signal circuitry for video frequency region( [H04N 5/222](#) takes precedence )
  - • {Movement detection( for video coding [H04N 7/368](#)[H04N 19/503](#) ; analysis of motion in general [G06T 7/20](#) )}
  - • • {Movement estimation( for video coding [H04N 7/2676](#)[H04N 19/51](#) )}

**Project: N/A (H04N)**

- U H04N 5/222
- Studio circuitry; Studio devices; Studio equipment;{Cameras comprising an electronic image sensor, e.g. digital cameras, video cameras, TV cameras, video cameras, camcorders, webcams, camera modules for embedding in other devices e.g. mobile phones, computers or vehicles}
- U H04N 5/225  
H04N 5/2251
- • Television cameras;{Cameras comprising an electronic image sensor, e.g. digital cameras, video cameras, video cameras, camcorders, webcams, camera modules for embedding in other devices e.g. mobile phones, computers or vehicles( optical systems [G02B](#); associated working of recording or reproducing apparatus with TV camera or receiver in which the television signal is not significantly involved [G11B 31/006](#) ; tubes [H01J](#) )}
  - • • {Constructional details( arrangement comprising a plurality of cameras [H04N 5/247](#) ; stereoscopic cameras having a single image sensor [H04N13/02A1](#)[H04N 13/0207](#) )}
- H04N 7/00
- Television systems ( -details [H04N 3/00](#) , [H04N 5/00](#) ; systems specific to colour television [H04N 11/00](#) ; stereoscopic television systems [H04N 13/00](#) ; methods or arrangements, for coding, decoding, compressing or decompressing digital video signals [H04N 19/00](#) ; selective content distribution [H04N 21/00](#) - )**

**Project: RP0062 (H04N)**

- H04N 7/01  
H04N 7/0135  
H04N 7/014
- Conversion of standards{involving analogue television standards or digital television standards processed at pixel level( video transcoding [H04N 7/26941](#)[H04N 19/40](#) ; image scaling in general [G06T 3/40](#) ; adapting incoming signals to the display format of the display terminal [G09G 5/005](#) )}
  - • {involving interpolation processes( interpolation-based image scaling [G06T 3/4007](#) ; interpolation for video coding [H04N 7/46](#)[H04N 19/587](#) ,[H04N 19/59](#) )}
  - • • {involving the use of motion vectors( motion estimation and compensation in video coding [H04N 7/2676](#) , [H04N 7/361](#)[H04N 19/51](#) )}

**Project: N/A (H04N)**

- U H04N 7/24
- Systems for the transmission of television signals using pulse code modulation( [H04N 21/00](#) takes precedence )

- D H04N 7/26
- • using bandwidth reduction; {Source coding or decoding of digital video signal, e.g. digital video signal compression; Pre- or postprocessing therefor} (information reduction by code conversion in general H03M 7/30)
- NOTE
- In this group classification is done in all relevant subgroups, e.g. a document disclosing a motion-adaptive MPEG bitrate transcoder using vector quantisation must be classified in **H04N7/26T**, H04N 7/28, H04N 7/50, H04N 7/26053, H04N 7/26132 and any other relevant group
- WARNING
- This subgroup is no longer used for the classification of new documents as from 01.06.2012 and the backlog is being continuously reclassified in H04N 19/00 and subgroups
- D H04N 7/26005
- • • {Adaptive or control aspects therefor}
- NOTES
- In this group documents must be classified in all relevant subgroups of H04N 7/2601 (controlled element or parameter), H04N 7/26117 (controlling element, parameter or criteria), H04N 7/26239 (unit of control) and H04N 7/26303 (methods, elements or tools for adaptive control).
- Control techniques that are specific only for a particular coding method are to be classified in all subgroups relating to such coding method, e.g. control of subband structure H04N 7/2642
- D H04N 7/2601
- • • • {Controlled element or parameter}
- D H04N 7/26015
- • • • • Predictor
- D H04N 7/26021
- • • • • {Coding or prediction mode selection (H04N 7/26111 takes precedence)}
- D H04N 7/26026
- • • • • • {Intra coding, e.g. selection among a plurality of spatially predictive coding modes}
- D H04N 7/26031
- • • • • • {Refresh, i.e. intra-coding mode decision, e.g. at macroblock or picture level}
- D H04N 7/26037
- • • • • • {Inter coding, i.e. selection among a plurality of temporally predictive coding modes}
- D H04N 7/26042
- • • • • • {Picture structure, e.g. interlaced/progressive}
- D H04N 7/26047
- • • • • • {Group-of-pictures (GOP) structure (H04N 7/26031 takes precedence)}
- D H04N 7/26053
- • • • • {Target code amount}
- D H04N 7/26058
- • • • • {Filtering, e.g. for pre- or post-processing (subband or wavelet filter banks H04N 7/26425)}
- D H04N 7/26063
- • • • • {Grid, i.e. regular pattern of elementary coding units in a picture, e.g. block grid}
- D H04N 7/26069
- • • • • {Encoder, i.e. selection among a plurality of heterogeneous encoders}
- D H04N 7/26074
- • • • • {Encoding parameters processing, e.g. initialization, alteration, compression (H04N 7/26819, H04N 7/26861 and subgroups take precedence)}
- D H04N 7/26079
- • • • • {Quantiser}
- D H04N 7/26085
- • • • • • {Details of quantisation, normalisation or weighting functions, e.g. normalisation parameters or matrices, variable uniform quantisers, weighting matrices}
- D H04N 7/2609
- • • • • • {Resource allocation}

- D H04N 7/26095 . . . . {Transform coefficients scan, e.g. zig-zag scan}
  - D H04N 7/26101 . . . . {Transformer, e.g. 8x8 or 2x4x8 DCT, selection among a plurality of different transform operations}
  - D H04N 7/26106 . . . . {Variable length coding (VLC) or entropy coding, e.g. Huffmann or arithmetic coding}
  - D H04N 7/26111 . . . . {Skipping or zeroing of coding units, e.g. adaptive decimation, frame skipping, transform coefficient masking}
- NOTE  
In this group it is obligatory to classify subject-matter also in the most appropriate subgroup of H04N 7/26239
- D H04N 7/26117 . . . . {Controlling element, parameter or criteria}
  - D H04N 7/26122 . . . . {Input video signal characteristics}
  - D H04N 7/26127 . . . . . {Complexity, e.g. activity, edges( H04N 7/26159 takes precedence )}
  - D H04N 7/26132 . . . . . {Motion, e.g. field or frame difference}
  - D H04N 7/26138 . . . . . {using motion vectors}
  - D H04N 7/26143 . . . . . {Scene cut( scene cut detection in conjunction with bandwidth reduction H04N 7/26898 )}
  - D H04N 7/26148 . . . . . {Chrominance}
  - D H04N 7/26154 . . . . . {Rate distortion criteria}
  - D H04N 7/26159 . . . . . {Data rate or code amount}
  - D H04N 7/26164 . . . . . {using a combination of feedforward and feedback control}
  - D H04N 7/2617 . . . . . {using feedforward control}
  - D H04N 7/26175 . . . . . {based on model-estimated code amount}
  - D H04N 7/2618 . . . . . {based on off-line generated code amount}
  - D H04N 7/26186 . . . . . {Feedback control, i.e. control using output code amount, e.g. buffer fullness}
  - D H04N 7/26191 . . . . . {Single-pass constant bit rate (CBR) encoding}
  - D H04N 7/26196 . . . . . {Visual quality}
  - D H04N 7/26202 . . . . . {Resource availability}
  - D H04N 7/26207 . . . . . {Coding mode}
  - D H04N 7/26212 . . . . . {Picture or macroblock type, e.g. I,P,B}
  - D H04N 7/26218 . . . . . {Picture structure, e.g. interlaced/progressive}
  - D H04N 7/26223 . . . . . {User input}
  - D H04N 7/26228 . . . . . {Receiver or channel}
  - D H04N 7/26234 . . . . . {Transmission errors}
  - D H04N 7/26239 . . . . {Unit of control, i.e. structural or semantic portion of the video signal being the object of the control}
  - D H04N 7/26244 . . . . . {Block or macroblock}
  - D H04N 7/2625 . . . . . {Transform coefficient}
  - D H04N 7/26255 . . . . . {Pixel}
  - D H04N 7/2626 . . . . . {Group-of-pictures (GOP)}
  - D H04N 7/26265 . . . . . {Slice, e.g. line of blocks, group of blocks( H04N 7/26244 takes precedence )}
  - D H04N 7/26271 . . . . . {Picture}
  - D H04N 7/26276 . . . . . {Image region, e.g. region of interest (ROI), object( H04N 7/26244 , H04N 7/26265 take precedence )}

- D H04N 7/26281 . . . . {Scene or shot( scene cut detection in conjunction with bandwidth reduction H04N 7/26898 )}
- D H04N 7/26287 . . . . {Bit}
- D H04N 7/26292 . . . . {Chrominance}
- D H04N 7/26297 . . . . {Layer}
- D H04N 7/26303 . . . . {Methods, elements or tools for adaptive control}
- D H04N 7/26308 . . . . {Lagrangian method}
- D H04N 7/26313 . . . . {Side information}
- D H04N 7/26319 . . . . {Iterative methods}
- D H04N 7/26324 . . . . {Two pass methods}
- D H04N 7/26329 . . . {Compressed domain processing( H04N 7/26813 takes precedence )}
- D H04N 7/26335 . . . {Decoder-specific arrangements}
- D H04N 7/2634 . . . . {for compensating inverse transform mismatch, e.g. IDCT mismatch( discrete orthonormal transforms G06F 17/147 )}
- D H04N 7/26345 . . . {involving coding of different picture or data components( H04N 7/26638 takes precedence )}
- D H04N 7/26351 . . . . {involving separate coding of the error signal, i.e. the difference between the original picture and the locally reconstructed one( H04N 7/26388 takes precedence )}
- D H04N 7/26356 . . . . {involving arrangements for adaptive allocation of coded information to different channels}
- D H04N 7/26361 . . . . {involving multi-layer decomposition( H04N 7/26388 takes precedence )Subsequent reconstruction}
- D H04N 2007/26367 . . . . {involving a plurality of video object planes}
- D H04N 7/26372 . . . . {involving the insertion of extra data, e.g. in the video data, in the coding parameters or by modification of said video data or parameters( arrangements for embedding at bitstream level H04N 21/8358 )}
- D H04N 7/26377 . . . {Filtering( H04N 7/26888 takes precedence )}
- D H04N 7/26382 . . . . {in a prediction loop}
- D H04N 7/26388 . . . {involving sub-band coding}
- D H04N 7/26393 . . . . {of a single image}
- D H04N 7/26398 . . . . {in more than two frequency dimensions( H04N 7/2659 takes precedence )}
- D H04N 7/26404 . . . . {of arbitrarily shaped image segments}
- D H04N 7/26409 . . . . {Control aspects therefor}
- D H04N 7/26414 . . . . {Controlled element}
- D H04N 7/2642 . . . . . {Subband structure, e.g. number of subbands}
- D H04N 7/26425 . . . . . {Filter type or filtering coefficients}
- D H04N 7/2643 . . . . . {Error protection, detection or correction}
- D H04N 7/26436 . . . . . {Scan or transmission order of coefficients or bitplanes}
- D H04N 7/26441 . . . . . {Switching of direction, e.g. horizontal, diagonal, vertical}
- D H04N 7/26446 . . . . . {Unit of control}
- D H04N 7/26452 . . . . . {relating to sub-band structure}
- D H04N 7/26457 . . . . . {Hierarchical level(H04N 7/26526, H04N 7/26617 take precedence)}

- D H04N 7/26462 . . . . . {Directional tree, e.g. low-high (LH), high-low (HL), high-high (HH)}
- D H04N 7/26468 . . . . . {Object or region}
- D H04N 7/26473 . . . . . {Element used for control}
- D H04N 7/26478 . . . . . {Position or location within image, e.g. center or periphery of picture}
- D H04N 7/26484 . . . . . {involving user interaction or information input by receiving side( television systems with two-way working H04N 7/173 )}
- D H04N 7/26489 . . . . . {with details relating to the sub-band filter( data processing equipment for wavelet transforms G06F 17/148 )}
- D H04N 7/26494 . . . . . {concerning filter definition}
- D H04N 7/265 . . . . . {concerning filter implementation}
- D H04N 7/26505 . . . . . {with at least one adaptive element}
- D H04N 7/2651 . . . . . {involving variable length or entropy coding, e.g. Huffmann or arithmetic coding}
- D H04N 7/26515 . . . . . {involving normalisation or quantising}
- D H04N 7/26521 . . . . . {involving a bit-rate or bit-amount target}
- D H04N 7/26526 . . . . . {with adaptive target allocation among the components}
- D H04N 7/26531 . . . . . {with prediction other than mere runlength(H04N 7/26585 takes precedence)}
- D H04N 7/26537 . . . . . {Intraband}
- D H04N 7/26542 . . . . . {Interband}
- D H04N 7/26547 . . . . . {involving the arranging of coefficients or bits, e.g. for scalability or progressive transmission}
- D H04N 7/26553 . . . . . {involving scan according to levels, e.g. breadth-first}
- D H04N 7/26558 . . . . . {involving scan according to trees, e.g. depth-first}
- D H04N 7/26563 . . . . . {Coding of bitplanes or significance, e.g. zerotree}
- D H04N 7/26569 . . . . . {involving error protection, detection or correction}
- D H04N 7/26574 . . . . . {suited to a bitstream syntax}
- D H04N 7/26579 . . . . . {with grouping into blocks}
- D H04N 7/26585 . . . . . {in combination with temporal predictive coding, e.g. in `inter` mode}
- D H04N 7/2659 . . . . . {with motion compensated temporal filtering}
- D H04N 7/26595 . . . . . {with at least one adaptive element}
- D H04N 7/26601 . . . . . {involving variable length or entropy coding, e.g. Huffmann or arithmetic coding}
- D H04N 7/26606 . . . . . {involving normalisation or quantising}
- D H04N 7/26611 . . . . . {involving a bit-rate or bit-amount target}
- D H04N 7/26617 . . . . . {with adaptive target allocation among the components}
- D H04N 7/26622 . . . . . {with interframe prediction not only of coefficient values}
- D H04N 7/26627 . . . . . {suited to an interframe bitstream syntax}
- D H04N 7/26632 . . . . . {using sub-band domain temporal integration}
- D H04N 7/26638 . . . . . {involving video objects}
- D H04N 7/26643 . . . . . {Shape coding therefor( contour coding for image data processing or generation in general G06T 9/20 )}
- D H04N 7/26648 . . . . . {using binary alpha-plane coding, e.g. Context based Arithmetic Encoding (CAE)}

- D H04N 7/26654 . . . . {Model-based coding therefor( model-based coding for image data processing or generation in general G06T 9/001 )}
- D H04N 7/26659 . . . . . {using a three-dimensional model}
- D H04N 7/26664 . . . . {coding of regions that are present throughout a whole video segment, e.g. sprites}
- D H04N 7/26667 . . . . . {of static sprites, e.g. background, mosaic}
- D H04N 7/26675 . . . . {Scene description coding, e.g. binary format for scenes(BIFS)compression( command descriptors and the like H04N 21/00 ; system and interactivity aspects H04N 7/17318 )}
- D H04N 7/26668 . . . . {involving both synthetic and natural picture components, e.g. synthetic natural hybrid coding (SNHC)}
- D H04N 7/26686 . . . . {Scalability, e.g. involving base and at least one enhancement video object layers (VOL)}
- D H04N 7/26691 . . . . . {Spatial scalability}
- D H04N 7/26696 . . . . . {Temporal scalability, e.g. layered VOP frame rate}
- D H04N 7/26702 . . . {Implementation arrangements, e.g. implementation by hardware or software( H04N 7/265 takes precedence )}
- D H04N 7/26707 . . . . {Memory arrangements}
- D H04N 7/26712 . . . . . {Memory downsizing methods}
- D H04N 7/26718 . . . . . {Display on the fly, e.g. simultaneous writing to and reading from decoder memory}
- D H04N 7/26723 . . . . . . {with 3:2 pulldown}
- D H04N 7/26728 . . . . . . {Recompression}
- D H04N 7/26734 . . . . . . {Decimation}
- D H04N 7/26739 . . . . {Motion estimation and/or compensation hardware}
- D H04N 7/26744 . . . . . {Data flow inside motion estimator}
- D H04N 7/2675 . . . . . {Access to external memory}
- D H04N 7/26755 . . . . . {Parallel arrangements}
- D H04N 7/2676 . . . {Motion estimation therefor( H04N 7/26739 takes precedence, picture signal circuitry for movement estimation for video frequency region H04N 5/144 ); Processing of motion vectors for bandwidth reduction purposes( Analysis of motion G06T 7/20 )}
- D H04N 7/26765 . . . . {Methods}
- D H04N 7/26771 . . . . . {Global motion vector estimation}
- D H04N 7/26776 . . . . . {Multiresolution or hierarchical method}
- D H04N 7/26781 . . . . . {Multistep search method, e.g. 3-step, 2D-log, One-at-a-Time Search (OTS)}
- D H04N 7/26787 . . . . . {Non-block-based processing}
- D H04N 7/26792 . . . . . . {using feature points or meshes}
- D H04N 7/26797 . . . . . . {using regions}
- D H04N 7/26803 . . . . . . {Contour motion estimation}
- D H04N 7/26808 . . . . . {Sub-pixel accuracy}
- D H04N 7/26813 . . . . . {Transform domain motion estimation}
- D H04N 7/26819 . . . . . {Details}
- D H04N 7/26824 . . . . . {Spatially constrained motion estimation, e.g. at image or region borders}
- D H04N 7/26829 . . . . . {Dealing with occlusions}

- D H04N 7/26835 . . . . {Early exit, i.e. stopping a systematic computation based on a certain criteria, e.g. error magnitude is too large}
  - D H04N 7/2684 . . . . {Search initialization, i.e. estimating a good candidate to initiate a search}
  - D H04N 7/26845 . . . . {Padding, i.e. filling non-object values in an arbitrary shaped block for motion estimation purposes}
  - D H04N 7/26851 . . . . {Rate-distortion criteria}
  - D H04N 7/26856 . . . . {Variable search window size or shape}
  - D H04N 7/26861 . . . . {Processing of motion vectors}
  - D H04N 7/26867 . . . . {Encoding}
  - D H04N 7/26872 . . . . . {Predictive encoding}
  - D H04N 7/26877 . . . {involving subsampling at the transmitter and restitution of the omitted samples by interpolation}
  - D H04N 7/26882 . . . {involving preprocessing or postprocessing therefor}
  - D H04N 7/26888 . . . . {involving reduction of coding artifacts, e.g. of blockiness}
  - D H04N 7/26893 . . . . {involving cinematographic video sequences, e.g. sequences originated from film and converted to video through 3:2 pulldown}
  - D H04N 7/26898 . . . . {involving scene cut detection in conjunction with bandwidth reduction( circuitry for scene change detection H04N 5/147 )}
  - D H04N 2007/26904 . . . . {involving motion}
  - D H04N 2007/26909 . . . . . {Devices for motion estimation}
  - D H04N 2007/26914 . . . . . . {Dataflow techniques}
  - D H04N 2007/2692 . . . . . . {Memory access techniques}
  - D H04N 7/26925 . . . . {Standard related documents}
  - D H04N 7/2693 . . . . {Normative references, e.g. working documents of standardisation bodies like ISO/IEC, ITU-T, SMPTE in the domain of digital image and video coding}
  - D H04N 7/26936 . . . . {Illustrative references, e.g. overviews, reviews}
  - D H04N 7/26941 . . . . {Transcoding therefor, i.e. conversion of video data, coding parameters, syntax or the like in order to realise interoperability between different video coding standards( Transcoding for telecommunication protocol H04L 29/06 ; Transcoding for mobile radio systems H04W 88/181 ; Conversion of standards for analog television, e.g. PAL, SECAM or NTSC H04N 7/01 ; Reformatting video signals for video conference systems H04N 7/152 ; Multimodal adaptation H04N 21/00 ; Distillation of HTML documents for optimising th visualization of content G06F 17/30905 ; File format conversion G06F 17/30005 )}
  - D H04N 7/26946 . . . . {Syntax aspects, e.g. source coding bistream syntax( syntax aspects related to a packetised or transport video stream H04N 7/24 , H04N 7/52 or subgroups )}
- WARNING  
Not complete, provisionally see also H04N 7/5073
- D H04N 7/26952 . . . . { Specific techniques not provided for in other subgroups of H04N 7/26 (not used)}
  - D H04N 7/26957 . . . . {Adaptive dynamic range coding (ADRC)}
  - D H04N 7/26962 . . . . {involving both PCM encoding and DPCM encoding}
  - D H04N 7/26968 . . . . {using a dither signal}
  - D H04N 7/26973 . . . . {using noise or error feedback, e.g. quantisation noise feedback}
  - D H04N 7/26978 . . . . {involving N-Tree coding, e.g. quadtree, octree}

- D H04N 7/26984 . . . . {involving run-length coding}
- D H04N 7/26989 . . . . {involving matching pursuit}
- D H04N 7/26994 . . . . {involving fractal coding}
- D H04N 7/28 . . . using vector coding
- D H04N 7/30 . . . involving transform coding(, e.g. using discrete cosine transform (DCT)){(H04N 7/26388 , H04N 7/26638 and } H04N 7/50 take precedence; digital computers for performing complex mathematical operations, e.g. domain transformation G06F 17/14 )
- D H04N 7/3005 . . . . {transforming in more than two dimensions}
- D H04N 7/3011 . . . . {of arbitrarily shaped image segments}
- D H04N 7/3016 . . . . {involving the use of at least one adaptive element, e.g. Joint Photographic Experts Group (JPEG) coding}
- D H04N 7/3022 . . . . {involving variable length or entropy coding, e.g. Huffman or arithmetic coding}
- D H04N 7/3027 . . . . {Quantisation, normalisation or weighting techniques therefor, e.g. normalisation parameters or matrices, variable uniform quantisers, weighting matrices}
- D H04N 7/3033 . . . . {the output data rate being minimised down to or below the channel capacity}
- D H04N 7/3038 . . . . . {with feedback control only of the data rate, e.g. buffer fullness being used}
- D H04N 7/3044 . . . . . {with feedforward control only of the data rate, e.g. information amount estimator or sorter being used}
- D H04N 7/305 . . . . . {with feedforward and feedback control of the data rate}
- D H04N 7/3055 . . . . . {with iterative control of the data rate}
- D H04N 7/3061 . . . . . {the output quality being above a minimum}
- D H04N 7/3066 . . . . . {Adaptive scanning order of DCT coefficients, e.g. alternate scanning}
- D H04N 7/3072 . . . . {involving hierarchical transmission of the transform coefficients, e.g. progressive JPEG( H04N 7/3066 takes precedence )}
- D H04N 7/3077 . . . . {involving error detection or error correction}
- D H04N 7/3083 . . . . {involving pre-processing of the picture element samples before transform coding or post-processing of the same after transform decoding}
- D H04N 7/3088 . . . . {involving zonal sampling}
- D H04N 2007/3094 . . . . {Intraframe prediction of transform coefficients, e.g. of AC coefficients from DC coefficients}
- D H04N 7/32 . . . involving predictive coding( ( H04N 7/26388 , H04N 7/26638 } , H04N 7/48 , H04N 7/50 take precedence )
- D H04N 7/322 . . . . {at least one coding element being controlled by the buffer fullness}
- D H04N 7/325 . . . . {with an adaptive quantiser characteristic, e.g. controlled by forward or backward adaptation}
- D H04N 7/327 . . . . {with error correction}
- D H04N 7/34 . . . . using spatial prediction( ( H04N 7/36 takes precedence ) )
- D H04N 7/345 . . . . . {by separate coding of pixel blocks}
- D H04N 7/36 . . . . using temporal prediction( ( H04N 7/46 takes precedence ) )
- D H04N 7/361 . . . . . {using motion compensation, e.g. by means of motion vectors( hardware implementations therefor H04N 7/26739 )}
- D H04N 7/362 . . . . . {Block-based}
- D H04N 7/363 . . . . . . {using overlapping blocks}

- D H04N 7/364 . . . . . {with sub-pixel accuracy}
- D H04N 7/365 . . . . . {Non block-based}
- D H04N 7/366 . . . . . {Multiple frame prediction( H04N 7/46 takes precedence )}
- D H04N 7/367 . . . . . {Long-term prediction( H04N 7/2667 takes precedence )}
- D H04N 7/368 . . . . . {using motion detection, e.g. with detection of moving zones(  
H04N 7/361 takes precedence, movement detection per se H04N 5/144  
)}
- D H04N 7/369 . . . . . {involving conditional replenishment}
- D H04N 7/38 . . . . . involving delta modulation( systems using differential pulse code  
modulation in general H04B 14/06 ){{not used}}
- D H04N 7/46 . . . . . using subsampling at the coder and{or}sample restitution by interpolation  
at the coder or decoder
- D H04N 7/461 . . . . . {with adaptive prediction}
- D H04N 7/462 . . . . . {with motion compensated interpolation, e.g. involving bidirectional  
frame interpolation, i.e. use of B-pictures}
- D H04N 7/464 . . . . . {involving a generalised motion field, e.g. non block-based  
processing}
- D H04N 7/465 . . . . . {involving spatial subsampling or upsampling; Alteration of picture size  
or resolution}
- D H04N 7/467 . . . . . {involving temporal subsampling, e.g. frame decimation( H04N 7/26111  
takes precedence )}
- D H04N 7/468 . . . . . {with control of frame rate, skipping or repetition at encoding or  
decoding side}
- D H04N 7/48 . . . . . involving pulse code modulation and predictive coding{{not used}}
- D H04N 7/50 . . . . . involving transform and predictive coding,{e.g. hybrid coding, Motion  
Picture Experts Group(MPEG)coding( H04N 7/26388 , H04N 7/26638 take  
precedence )}
- D H04N 7/5006 . . . . . {involving the use of at least one adaptive element}
- D H04N 7/5013 . . . . . {involving variable length or entropy coding, e.g. Huffmann or arithmetic  
coding}
- D H04N 7/502 . . . . . {Quantisation, normalisation or weighting techniques therefor, e.g.  
normalisation parameters or matrices, variable uniform quantisers,  
weighting matrices}
- D H04N 7/5026 . . . . . {the output data rate being minimised down to or below the channel  
capacity}
- D H04N 7/5033 . . . . . {with feedback control only of the data rate, e.g. buffer fullness being  
used}
- D H04N 7/504 . . . . . {with feedforward control only of the data rate, e.g. information  
amount estimator or sorter being used}
- D H04N 7/5046 . . . . . {with feedforward and feedback control of the data rate}
- D H04N 7/5053 . . . . . {with iterative control of the data rate, e.g. multipass}
- D H04N 7/506 . . . . . {involving adaptive allocation of the frame type, e.g. adaptive group-of-  
pictures (GOP) structure}
- D H04N 7/5066 . . . . . {motion adaptive}
- D H04N 7/5073 . . . . . {multiplexing arrangements therefor, e.g. suited to a video bitstream  
syntax}
- D H04N 7/508 . . . . . {using non-transform coding for certain blocks}
- D H04N 7/5086 . . . . . {forced updating therefor, e.g. refresh techniques, intra/inter-coding mode  
selection at macroblock or picture level}

- D H04N 7/5093      · · · {using transform domain integration, i.e. the transform being operated outside the prediction loop}
- D H04N 7/64        · · Systems for detection or correction of transmission errors( coding, decoding or code conversion for error detection or error correction in general H03M 13/00 )

WARNING

This subgroup is no longer used for the classification of new documents as from 01.06.2012 and the backlog is being continuously reclassified in H04N 19/00 and subgroups

- D H04N 7/66        · · · using redundant codes
- D H04N 7/68        · · · using error concealment

**Project: RP0062 (H04N)****U H04N 13/00      Stereoscopic{or multiview}television systems; Details thereof**NOTE

This group covers systems where a three-dimensional effect or different views according to the viewpoint location are provided to one or more viewers by means of electronic signals representing a plurality of images or signals including depth information, e.g. taken from different viewpoint locations representing the interocular distance (optical systems for producing stereoscopic or other three dimensional effects [G02B 27/22](#) )]

- H04N 13/0003      · {Stereoscopic image signal coding, multiplexing, processing, recording or transmission( television signal bandwidth reduction [H04N 7/26](#)[H04N 19/00](#) ; image coding for general purpose image data processing [G06T 9/00](#) ; transformation of the video signal for recording, including multiplexing of another television signal [H04N 5/9205](#) ; for colour signals, [H04N 9/8227](#) ; selective content distribution, e.g. interactive television, VOD [H04N 21/00](#) ; assembling of a multiplex stream, e.g. transport stream, by combining a video stream with other content or additional data, remultiplexing of multiplex streams, insertion of stuffing bits into the multiplex stream, assembling of a packetized elementary stream [H04N 21/236](#) ; disassembling of a multiplex stream, e.g. demultiplexing audio and video streams or extraction of additional data from a video stream, remultiplexing of multiplex streams, extraction or processing of service information at client side, disassembling of packetized elementary stream [H04N 21/434](#) )}
- H04N 13/0007      · · {Processing stereoscopic image signals( [H04N 19/00769](#)[H04N 19/597](#) , [H04N 13/004](#) take precedence; image processing as such [G06T](#) )}
- H04N 13/0048      · · {Encoding, multiplexing or demultiplexing different image signal components in stereoscopic image signals} ( [H04N 19/00769](#)[H04N 19/597](#) takes precedence; assembling of a multiplex stream, e.g. transport stream, by combining a video stream with other content or additional data, remultiplexing of multiplex streams, insertion of stuffing bits into the multiplex stream, assembling of a packetized elementary stream [H04N 21/236](#) ; disassembling of a multiplex stream, e.g. demultiplexing audio and video streams or extraction of additional data from a video stream, remultiplexing of multiplex streams, extraction or processing of service information at client side, disassembling of packetized elementary stream [H04N 21/434](#) ; demultiplexing of several video streams [H04N 21/4347](#) )

**Project: N/A (H04N)**

- U H04N 13/02        · Picture signal generators

- H04N 13/0285
- {having a monoscopic mode and a separate stereoscopic mode}
- WARNING  
this group is not complete, pending a reorganization. Documents classified before 6/10/2011 which, in the present scheme, should be classified in this group can be found in **H04N13/02N**[H04N 13/0292](#).
- H04N 13/0289
- • {details relating to the switching between said modes}
- WARNING  
this group is not complete, pending a reorganization. Documents classified before 6/10/2011 which, in the present scheme, should be classified in this group can be found in **H04N13/02N**[H04N 13/0292](#).
- U H04N 13/04
- Picture reproducers({ optical systems for producing stereoscopic or other three dimensional effects [G02B 27/22](#) )}
- H04N 13/0452
- {having a monoscopic mode and a separate stereoscopic mode}
- WARNING  
this group is not complete, pending a reorganization. Documents classified before 6/10/2011 which, in the present scheme, should be classified in this group are provisionally classified in **H04N13/04N**[H04N 13/0456](#).
- H04N 13/0454
- • {details of mode switching}
- WARNING  
this group is not complete, pending a reorganization. Documents classified before 6/10/2011 which, in the present scheme, should be classified in this group are provisionally classified in **H04N13/04N**[H04N 13/0456](#).
- H04N 19/00** **{Methods or arrangements for coding, decoding, compressing or decompressing digital video signals}**
- WARNING
- 1. This group does not correspond to current or future IPC. It is likely to be introduced in IPC2014.01. 2. this group is not complete pending reclassification; see provisionally H04N 7/26 and subgroups, H04N 7/64 and subgroups**
- D H04N 19/00006
- {using adaptive coding}
- D H04N 19/00012
- • {characterised by an element, parameter or selection affected, i.e. controlled, by the adaptive coding}
- D H04N 19/00018
- • • {Coding or prediction mode selection}
- D H04N 19/00024
- • • • {Selection of the reference unit for prediction within a chosen coding or prediction mode, e.g. weighted prediction or adaptive choice of position and number of pixels used for prediction}
- D H04N 19/0003
- • • • {between spatial and temporal predictive coding, e.g. picture refresh or intra-inter mode decision}
- D H04N 19/00036
- • • • {among a plurality of temporal predictive coding modes}
- D H04N 19/00042
- • • • {among a plurality of spatial predictive coding modes}
- D H04N 19/00048
- • • • {suitable for a given display mode, e.g. for interlaced or progressive display mode}
- D H04N 19/00054
- • • • {Structure of a group of pictures [GOP], e.g. number of B-frames between two anchor frames( H04N 19/0003 takes precedence )}
- D H04N 19/0006
- • • {Code volume assigned before coding to a coding unit}
- D H04N 19/00066
- • • {Filter, e.g. for pre- or post-processing( sub-band filter banks H04N 19/00824 )}

- D H04N 19/00072 . . . {Selection of the subdivision of a picture into coding blocks, e.g. having a rectangular or non-rectangular shape}
- D H04N 19/00078 . . . {Selection from a plurality of transforms or standards, e.g. selection between discrete cosine transform [DCT] and subband or selection between H.263 and H.264}
- D H04N 19/00084 . . . . {Selection of transform size, e.g. 8x8 or 2x4x8 DCT, or subband transforms of varying structure or type}
- D H04N 19/0009 . . . {Quantisation}
- D H04N 19/00096 . . . . {characterized by details about quantisation, normalisation or weighting functions, e.g. normalisation parameters or matrices, variable uniform quantisers or weighting matrices}
- D H04N 19/00103 . . . {Prioritisation of hardware or computational resources}
- D H04N 19/00109 . . . {Scanning of coding units, e.g. zig-zag scan of transform coefficients}
- D H04N 19/00115 . . . . {using flexible macroblock ordering [FMO]}
- D H04N 19/00121 . . . . {Adaptive entropy coding, e.g. adaptive variable length coding, Huffman or arithmetic coding}
- D H04N 19/00127 . . . . {Sampling, masking or truncation of coding units, e.g. adaptive resampling, frame skipping, frame interpolation or high frequency transform coefficient masking}
- D H04N 19/00133 . . . {characterised by an element, parameter or criterion affecting, i.e. controlling, the adaptive coding}
- D H04N 19/00139 . . . . {Incoming video signal characteristics or properties}
- D H04N 19/00145 . . . . {Measure of motion inside a coding unit, e.g. average field, frame or block difference}
- D H04N 19/00151 . . . . . {using motion vectors}
- D H04N 19/00157 . . . . {Measure of coding unit complexity, e.g. activity measure or edge presence estimation( H04N 19/00169 takes precedence )}
- D H04N 19/00163 . . . . {Detection of scene cut or change}
- D H04N 19/00169 . . . . {Data rate or code amount at the encoder output}
- D H04N 19/00175 . . . . {related to rate distortion( rate distortion as a criterion for motion estimation H04N 19/00672 )}
- D H04N 19/00181 . . . . . {with estimation of the code amount by means of a model, e.g. mathematical model or statistical model}
- D H04N 19/00187 . . . . . {with measurement and check of actual compressed data size at the memory before deciding storage at the transmission buffer}
- D H04N 19/00193 . . . . . {with measurement of buffer fullness}
- D H04N 19/002 . . . . {Objective or estimated subjective visual quality after decoding, e.g. measurement of distortion( use of rate distortion criteria H04N 19/00175 )}
- D H04N 19/00206 . . . . {Availability of hardware or computational resources, e.g. encoding based on power-saving criteria}
- D H04N 19/00212 . . . . {Assigned coding mode, i.e. the coding mode is predefined or preselected to be further used for selection of another element or parameter}
- D H04N 19/00218 . . . . . {Prediction type, e.g. intra, inter or bidirectional}
- D H04N 19/00224 . . . . . {suitable for a given display mode, e.g. for interlaced or progressive display mode}
- D H04N 19/0023 . . . . {User input}
- D H04N 19/00236 . . . . {Feedback from the receiver or from the transmission channel}
- D H04N 19/00242 . . . . . {Measure of transmission errors, e.g. bit-error-rate [BER]}
- D H04N 19/00248 . . . . {Position within a video image, e.g. region of interest [ROI]}

- D H04N 19/00254
  - • {characterised by the structural or semantic portion of the video signal being the object or the subject of the adaptive control during the coding, i.e. the coding unit( H04N 19/00012 , H04N 19/00133 take precedence )}
- D H04N 19/0026
  - • • {the unit being an image region, e.g. object}
- D H04N 19/00266
  - • • • {where the region is a picture, frame or field}
- D H04N 19/00272
  - • • • {where the region is a slice, e.g. line of blocks or group of blocks}
- D H04N 19/00278
  - • • • {where the region is a block or a macroblock}
- D H04N 19/00284
  - • • {the unit being a group of pictures [GOP]}
- D H04N 19/0029
  - • • {the unit being a scene or shot}
- D H04N 19/00296
  - • • {the unit being a set of transform coefficients}
- D H04N 19/00303
  - • • {the unit being a pixel, e.g. luminance value}
- D H04N 19/00309
  - • • {the unit being bits, e.g. of the compressed video stream}
- D H04N 19/00315
  - • • {the unit being a colour or chrominance component}
- D H04N 19/00321
  - • • {the unit being a scalable video layer}
- D H04N 19/00327
  - • • {the unit being a video data packet, e.g. a network abstraction layer [NAL] unit}
- D H04N 19/00333
  - • • {the unit relating to sub-band structure, e.g. hierarchical level, directional tree, e.g. low-high [LH], high-low [HL], high-high [HH]}
- D H04N 19/00339
  - • • {the unit being a variable length codeword}
- D H04N 19/00345
  - • {characterised by a formulation applied to the adaptation, e.g. adaptation method or type}
- D H04N 19/00351
  - • • {using Lagrange multiplier based optimisation}
- D H04N 19/00357
  - • • {the formulation being iterative or recursive}
- D H04N 19/00363
  - • • • {involving two passes}
- D H04N 19/00369
  - • • {adapted to the computation of encoding parameters, e.g. by averaging previously computed encoding parameters( H04N 19/00684 takes precedence )}
- D H04N 19/00375
  - • • • {including determination of the initial value of an encoding parameter( H04N 19/0066 takes precedence )}
- D H04N 19/00381
  - • • • {including smoothing of a sequence of encoding parameters, e.g. by averaging, by choice of the maximum, minimum or median value}
- D H04N 19/00387
  - {using video object coding}
- D H04N 19/00393
  - • {with binary alpha-plane coding for video objects, e.g. context based arithmetic encoding [CAE]}
- D H04N 19/004
  - • {with coding of regions that are present throughout a whole video segment, e.g. sprites, background or mosaic}
- D H04N 19/00406
  - • {with scene description coding, e.g. binary format for scenes [BIFS] compression}
- D H04N 19/00412
  - • {involving both synthetic and natural picture components, e.g. synthetic natural hybrid coding [SNHC]}
- D H04N 19/00418
  - • {involving scalability at the object level, e.g. video object layers [VOL]}
- D H04N 19/00424
  - {using hierarchical techniques, e.g. scalability( H04N 19/00818 takes precedence )}
- D H04N 19/0043
  - • {in the temporal domain}
- D H04N 19/00436
  - • {in the spatial domain}
- D H04N 19/00442
  - • {Scalability techniques involving progressive bit-plane based encoding of enhancement layer, e.g. fine granular scalability [FGS]}

- D H04N 19/00448 . . {Scalability techniques involving formatting the layers as function of picture distortion after decoding, e.g. signal-to-noise [SNR] scalability}
- D H04N 19/00454 . . {with arrangements to assign different transmission priorities to video input data or to video coded data}
- D H04N 19/0046 . . {involving multiple description coding [MDC], i.e. separate layers are structured as independently decodable descriptions of input picture data, e.g. for an input picture sending an I-frame and a P-frame of the same picture}
- D H04N 19/00466 . . {involving distributed video coding [DVC], e.g. Wyner-Ziv video coding or Slepian-Wolf video coding}
- D H04N 19/00472 . {using video transcoding, i.e. partial or full decoding of a coded input stream and re-encoding of the decoded output stream}
- D H04N 19/00478 . {characterised by implementation details or hardware specific for video compression or decompression, e.g. dedicated software implementation, memory arrangements, parallel processing or hardware for motion estimation or compensation( H04N 19/00824 takes precedence )}
- D H04N 19/00484 . . {involving memory arrangements( H04N 19/00515 takes precedence )}
- D H04N 19/0049 . . . {using memory downsizing methods}
- D H04N 19/00496 . . . {Display on the fly, e.g. simultaneous writing to and reading from decoding memory}
- D H04N 19/00503 . . . {Recompression, e.g. by spatial or temporal decimation}
- D H04N 19/00509 . . {hardware especially adapted for motion estimation or compensation}
- D H04N 19/00515 . . . {characterised by techniques for memory access}
- D H04N 19/00521 . . {using parallelised computational arrangements}
- D H04N 19/00527 . . {using cascaded computational arrangements for performing a single operation, e.g. filtering}
- D H04N 19/00533 . {Decoders specifically adapted therefor, e.g. video decoders which are asymmetric with the encoder}
- D H04N 19/00539 . . {performing compensation of the inverse transform mismatch, e.g. Inverse Discrete Cosine Transform [IDCT] mismatch}
- D H04N 19/00545 . {for transmitting additional information in the video signal during the compression process, e.g. the additional information being encoding parameters( H04N 19/0069 , H04N 19/00872 , H04N 19/00884 take precedence )}
- D H04N 19/00551 . . {by compressing encoding parameters before transmission}
- D H04N 19/00557 . . {characterised by embedding the information to be invisible}
- D H04N 19/00563 . {using compressed domain processing techniques other than decoding, e.g. modification of transform coefficients, of VLC data or of run-length data( motion estimation in a transform domain H04N 19/00636 ; Processing of decoded motion vectors H04N 19/00684 )}
- D H04N 19/00569 . {using predictive coding( H04N 19/00781 takes precedence )}
- D H04N 19/00575 . . {involving temporal prediction}
- D H04N 19/00581 . . . {using conditional replenishment}
- D H04N 19/00587 . . . {Motion estimation or compensation therefor}
- D H04N 19/00593 . . . . {Global motion vector estimation}
- D H04N 19/006 . . . . {Multiresolution motion estimation}
- D H04N 19/00606 . . . . {Motion estimation using multistep search, e.g. 3-step, 2D-log or one-at-a-time search [OTS]}
- D H04N 19/00612 . . . . {Non block-based motion estimation}
- D H04N 19/00618 . . . . . {using feature points or meshes}

- D H04N 19/00624 . . . . {using regions}
- D H04N 19/0063 . . . . {Motion estimation with sub-pixel accuracy}
- D H04N 19/00636 . . . . {performed in a transform domain}
- D H04N 19/00642 . . . . {Motion estimation with spatial constraints, e.g. at image or region borders}
- D H04N 19/00648 . . . . {Motion estimation dealing with occlusions}
- D H04N 19/00654 . . . . {Motion estimation characterised by stopping computation or iteration based on certain criteria, e.g. error magnitude is too large or early exit}
- D H04N 19/0066 . . . . {Motion estimation with initialization of the vector search, e.g. estimating a good candidate to initiate a search}
- D H04N 19/00666 . . . . {Motion estimation with padding, i.e. filling non-object values in an arbitrary shaped picture block or region for estimation purposes}
- D H04N 19/00672 . . . . {Motion estimation based on rate-distortion criteria}
- D H04N 19/00678 . . . . {Motion estimation characterised by having a search window with variable size or shape}
- D H04N 19/00684 . . . . {Processing of motion vectors, e.g. details on the further processing of determined or generated motion vectors}
- D H04N 19/0069 . . . . . {by encoding}
- D H04N 19/00696 . . . . . {the encoding being predictive}
- D H04N 19/00703 . . . . . {for estimating the reliability of the determined motion vectors or motion vector field, e.g. for smoothing the motion vector field or for correcting motion vectors}
- D H04N 19/00709 . . . . {Motion compensation with overlapping blocks}
- D H04N 19/00715 . . . . {with multiple frame prediction using more than one reference frame in a given prediction direction}
- D H04N 19/00721 . . . . {with bidirectional frame interpolation, i.e. use of B-pictures}
- D H04N 19/00727 . . . . {with long-term prediction, i.e. the reference frame for a current frame is not the temporally closest one (H04N 19/004 takes precedence)}
- D H04N 19/00733 . . . . {Block-based motion compensation (H04N 19/00709 takes precedence)}
- D H04N 19/00739 . . . . {Motion compensation with sub-pixel interpolation}
- D H04N 19/00745 . . . . {Non block-based motion compensation}
- D H04N 19/00751 . . {involving temporal sub-sampling or interpolation, e.g. decimation or subsequent interpolation of pictures in a video sequence}
- D H04N 19/00757 . . {involving spatial sub-sampling or interpolation, e.g. alteration of picture size or resolution}
- D H04N 19/00763 . . {involving spatial prediction techniques}
- D H04N 19/00769 . . {adapted to multi-view video sequence encoding}
- D H04N 19/00775 . {using transform coding}
- D H04N 19/00781 . . {in combination with predictive coding}
- D H04N 19/00787 . . . {using motion compensated temporal filtering [MCTF]}
- D H04N 19/00793 . . . {using sub-band intra-band or inter-band prediction}
- D H04N 19/008 . . . {the transform being operated outside the prediction loop}
- D H04N 19/00806 . . {by transforming in more than two frequency dimensions}
- D H04N 19/00812 . . {the transform being discrete cosine transform [DCT]}
- D H04N 19/00818 . . {the transform being sub-band based, e.g. wavelets}
- D H04N 19/00824 . . . {characterised by filter definition or implementation details}
- D H04N 19/0083 . . . {characterised by ordering of coefficients or bits for transmission}

- D H04N 19/00836 . . . . {by grouping of coefficients into blocks after the transform}
- D H04N 19/00842 . . . . {using significance based coding, e.g. Embedded Zerotrees of Wavelets [EZW] or Set Partitioning in Hierarchical Trees [SPIHT]}
- D H04N 19/00848 . . {the transform being applied to non-rectangular image segments}
- D H04N 19/00854 . {using error resilience, e.g. data partitioning, resync markers or reversible VLC [RVLC]}
- D H04N 19/0086 . . {involving data partitioning, i.e. separation of data into packets or partitions according to importance}
- D H04N 19/00866 . . {involving unequal error protection, i.e. providing more protection according to the importance of the data}
- D H04N 19/00872 . . {involving the insertion of resynchronisation markers into the bitstream}
- D H04N 19/00878 . . {involving reversible variable length codes}
- D H04N 19/00884 . {characterised by syntax aspects related to video coding, e.g. in relation with compression standards}
- D H04N 19/0089 . . {Details of filtering operation specially adapted to video compression, e.g. for pixel interpolation( H04N 19/00824 , H04N 19/00909 take precedence)}
- D H04N 19/00896 . . {involving filtering within a prediction loop}
- D H04N 19/00903 . {using pre-processing or post-processing specially adapted to video compression}
- D H04N 19/00909 . . {involving reduction of coding artifacts, e.g. of blockiness}
- D H04N 19/00915 . . . {with detection of the former encoding block subdivision in decompressed video}
- D H04N 19/00921 . . {involving scene cut or change detection in conjunction with video compression}
- D H04N 19/00927 . . {involving rearrangement of data among different coding units, e.g. shuffling, interleaving, scrambling, permutation of pixel data or permutation of transform coefficient data among different blocks}
- D H04N 19/00933 . . {including methods or arrangements for detection of transmission errors at the decoder}
- D H04N 19/00939 . . . {in combination with error concealment}
- D H04N 19/00945 . {using special coding techniques not provided for in groups H04N 19/00006 - H04N 19/00939 , e.g. vector quantisation, quad-tree, matching pursuit or fractals }
- D H04N 19/00951 . . {for entropy coding, e.g. variable length coding [VLC], arithmetic coding( entropy coding in adaptive coding H04N 19/00121 )}
- D H04N 19/00957 . . {involving run-length coding}
- D H04N 19/00963 . . {Vector quantisation}
- D H04N 19/00969 . . {Tree coding, e.g. quad-tree}
- D H04N 19/00975 . . {Matching pursuit coding}
- D H04N 19/00981 . . {Adaptive-dynamic-range coding [ADRC]}
- D H04N 19/00987 . . {using noise or error feedback, e.g. quantisation noise feedback}
- D H04N 19/00993 . . {involving fractal coding}
- N H04N 19/10 . using adaptive coding

**NOTE**

When classifying in this group, each aspect relating to adaptive coding should, insofar as possible, be classified in each one of subgroups [H04N 19/102](#), [H04N 19/134](#), [H04N 19/169](#) and [H04N 19/189](#).

- N H04N 19/102
    - • characterised by the element, parameter or selection affected or controlled by the adaptive coding
  - N H04N 19/103
    - • • Selection of coding mode or of prediction mode
  - N H04N 19/105
    - • • • Selection of the reference unit for prediction within a chosen coding or prediction mode, e.g. adaptive choice of position and number of pixels used for prediction
  - N H04N 19/107
    - • • • between spatial and temporal predictive coding, e.g. picture refresh
  - N H04N 19/109
    - • • • among a plurality of temporal predictive coding modes
  - N H04N 19/11
    - • • • among a plurality of spatial predictive coding modes
  - N H04N 19/112
    - • • • according to a given display mode, e.g. for interlaced or progressive display mode
  - N H04N 19/114
    - • • • Adapting the group of pictures [GOP] structure, e.g. number of B-frames between two anchor frames ([H04N 19/107](#) takes precedence)
  - N H04N 19/115
    - • • Selection of the code volume for a coding unit prior to coding
  - N H04N 19/117
    - • • Filters, e.g. for pre-processing or post-processing (sub-band filter banks [H04N 19/635](#))
  - N H04N 19/119
    - • • Adaptive subdivision aspects e.g. subdivision of a picture into rectangular or non-rectangular coding blocks
  - N H04N 19/12
    - • • Selection from among a plurality of transforms or standards, e.g. selection between discrete cosine transform [DCT] and sub-band transform or selection between H.263 and H.264
- NOTE
- When classifying in this group, each compression algorithm is further classified in the relevant subgroups of groups [H04N 19/60](#) or [H04N 19/90](#).
- N H04N 19/122
    - • • • Selection of transform size, e.g. 8x8 or 2x4x8 DCT; Selection of sub-band transforms of varying structure or type
  - N H04N 19/124
    - • • Quantisation
  - N H04N 19/126
    - • • • Details of normalisation or weighting functions, e.g. normalisation matrices or variable uniform quantisers
  - N H04N 19/127
    - • • Prioritisation of hardware or computational resources
  - N H04N 19/129
    - • • Scanning of coding units, e.g. zig-zag scan of transform coefficients or flexible macroblock ordering [FMO]
  - N H04N 19/13
    - • • Adaptive entropy coding, e.g. adaptive variable length coding [AVLC] or context adaptive binary arithmetic coding [CABAC]
  - N H04N 19/132
    - • • Sampling, masking or truncation of coding units, e.g. adaptive resampling, frame skipping, frame interpolation or high-frequency transform coefficient masking
  - N H04N 19/134
    - • characterised by the element, parameter or criterion affecting or controlling the adaptive coding
  - N H04N 19/136
    - • • Incoming video signal characteristics or properties
  - N H04N 19/137
    - • • • Motion inside a coding unit, e.g. average field, frame or block difference
  - N H04N 19/139
    - • • • • Analysis of motion vectors, e.g. their magnitude, direction, variance or reliability
  - N H04N 19/14
    - • • • Coding unit complexity, e.g. amount of activity or edge presence estimation ([H04N 19/146](#) takes precedence)
  - N H04N 19/142
    - • • Detection of scene cut or scene change
  - N H04N 19/146
    - • • Data rate or code amount at the encoder output
  - N H04N 19/147
    - • • • according to rate distortion criteria (rate-distortion as a criterion for motion estimation [H04N 19/567](#))

- N H04N 19/149 . . . . by estimating the code amount by means of a model, e.g. mathematical model or statistical model
- N H04N 19/15 . . . . by monitoring actual compressed data size at the memory before deciding storage at the transmission buffer
- N H04N 19/152 . . . . by measuring the fullness of the transmission buffer
- N H04N 19/154 . . . . Measured or subjectively estimated visual quality after decoding, e.g. measurement of distortion (use of rate-distortion criteria [H04N 19/147](#))
- N H04N 19/156 . . . . Availability of hardware or computational resources, e.g. encoding based on power-saving criteria
- N H04N 19/157 . . . . Assigned coding mode, i.e. the coding mode being predefined or preselected to be further used for selection of another element or parameter
- N H04N 19/159 . . . . Prediction type, e.g. intra-frame, inter-frame or bidirectional frame prediction
- N H04N 19/16 . . . . for a given display mode, e.g. for interlaced or progressive display mode
- N H04N 19/162 . . . . User input
- N H04N 19/164 . . . . Feedback from the receiver or from the transmission channel
- N H04N 19/166 . . . . concerning the amount of transmission errors, e.g. bit error rate [BER]
- N H04N 19/167 . . . . Position within a video image, e.g. region of interest [ROI]
- N H04N 19/169 . . . . characterised by the coding unit, i.e. the structural portion or semantic portion of the video signal being the object or the subject of the adaptive coding
- N H04N 19/17 . . . . the unit being an image region, e.g. an object
- N H04N 19/172 . . . . the region being a picture, frame or field
- N H04N 19/174 . . . . the region being a slice, e.g. a line of blocks or a group of blocks
- N H04N 19/176 . . . . the region being a block, e.g. a macroblock
- N H04N 19/177 . . . . the unit being a group of pictures [GOP]
- N H04N 19/179 . . . . the unit being a scene or a shot
- N H04N 19/18 . . . . the unit being a set of transform coefficients
- N H04N 19/182 . . . . the unit being a pixel
- N H04N 19/184 . . . . the unit being bits, e.g. of the compressed video stream
- N H04N 19/186 . . . . the unit being a colour or a chrominance component
- N H04N 19/187 . . . . the unit being a scalable video layer
- N H04N 19/188 . . . . {the unit being a video data packet, e.g. a network abstraction layer [NAL] unit}
- N H04N 19/1883 . . . . {the unit relating to sub-band structure, e.g. hierarchical level, directional tree, e.g. low-high [LH], high-low [HL], high-high [HH]}
- N H04N 19/1887 . . . . {the unit being a variable length codeword}
- N H04N 19/189 . . . . characterised by the adaptation method, adaptation tool or adaptation type used for the adaptive coding
- N H04N 19/19 . . . . using optimisation based on Lagrange multipliers
- N H04N 19/192 . . . . the adaptation method, adaptation tool or adaptation type being iterative or recursive
- N H04N 19/194 . . . . involving only two passes
- N H04N 19/196 . . . . being specially adapted for the computation of encoding parameters, e.g. by averaging previously computed encoding parameters (processing of motion vectors [H04N 19/513](#))
- N H04N 19/197 . . . . {including determination of the initial value of an encoding parameter ([H04N 19/56](#) takes precedence)}

- N H04N 19/198
  - . . . {including smoothing of a sequence of encoding parameters, e.g. by averaging, by choice of the maximum, minimum or median value}
- N H04N 19/20
  - . using video object coding
- N H04N 19/21
  - . with binary alpha-plane coding for video objects, e.g. context-based arithmetic encoding [CAE]
- N H04N 19/23
  - . with coding of regions that are present throughout a whole video segment, e.g. sprites, background or mosaic
- N H04N 19/25
  - . with scene description coding, e.g. binary format for scenes [BIFS] compression
- N H04N 19/27
  - . involving both synthetic and natural picture components, e.g. synthetic natural hybrid coding [SNHC]
- N H04N 19/29
  - . involving scalability at the object level, e.g. video object layer [VOL]
- N H04N 19/30
  - . using hierarchical techniques, e.g. scalability ([H04N 19/63](#) takes precedence)
- N H04N 19/31
  - . in the temporal domain
- N H04N 19/33
  - . in the spatial domain
- N H04N 19/34
  - . Scalability techniques involving progressive bit-plane based encoding of the enhancement layer, e.g. fine granular scalability [FGS]
- N H04N 19/36
  - . Scalability techniques involving formatting the layers as a function of picture distortion after decoding, e.g. signal-to-noise [SNR] scalability
- N H04N 19/37
  - . with arrangements for assigning different transmission priorities to video input data or to video coded data
- N H04N 19/39
  - . involving multiple description coding [MDC], i.e. with separate layers being structured as independently decodable descriptions of input picture data
- N H04N 19/395
  - . {involving distributed video coding [DVC], e.g. Wyner-Ziv video coding or Slepian-Wolf video coding}
- N H04N 19/40
  - . using video transcoding, i.e. partial or full decoding of a coded input stream followed by re-encoding of the decoded output stream
- N H04N 19/42
  - . characterised by implementation details or hardware specially adapted for video compression or decompression, e.g. dedicated software implementation ([H04N 19/635](#) takes precedence)
- N H04N 19/423
  - . characterised by memory arrangements ([H04N 19/433](#) takes precedence)
- N H04N 19/426
  - . . . using memory downsizing methods
- N H04N 19/427
  - . . . . {Display on the fly, e.g. simultaneous writing to and reading from decoding memory}
- N H04N 19/428
  - . . . . {Recompression, e.g. by spatial or temporal decimation}
- N H04N 19/43
  - . Hardware specially adapted for motion estimation or compensation
- N H04N 19/433
  - . . . characterised by techniques for memory access
- N H04N 19/436
  - . using parallelised computational arrangements
- N H04N 19/439
  - . {using cascaded computational arrangements for performing a single operation, e.g. filtering}
- N H04N 19/44
  - . Decoders specially adapted therefor, e.g. video decoders which are asymmetric with respect to the encoder
- N H04N 19/45
  - . {performing compensation of the inverse transform mismatch, e.g. Inverse Discrete Cosine Transform [IDCT] mismatch}
- N H04N 19/46
  - . Embedding additional information in the video signal during the compression process ([H04N 19/517](#), [H04N 19/68](#), [H04N 19/70](#) take precedence)
- N H04N 19/463
  - . by compressing encoding parameters before transmission
- N H04N 19/467
  - . characterised by the embedded information being invisible, e.g. watermarking

- N H04N 19/48
  - using compressed domain processing techniques other than decoding, e.g. modification of transform coefficients, variable length coding [VLC] data or run-length data (motion estimation in a transform domain [H04N 19/547](#); processing of decoded motion vectors [H04N 19/513](#))
- N H04N 19/50
  - using predictive coding ([H04N 19/61](#) takes precedence)
- N H04N 19/503
  - · involving temporal prediction (adaptive coding with adaptive selection between spatial and temporal predictive coding [H04N 19/107](#); adaptive coding with adaptive selection among a plurality of temporal predictive coding modes [H04N 19/109](#))
- N H04N 19/507
  - · · using conditional replenishment
- N H04N 19/51
  - · · Motion estimation or motion compensation
- N H04N 19/513
  - · · · Processing of motion vectors
- N H04N 19/517
  - · · · · by encoding
- N H04N 19/52
  - · · · · by predictive encoding
- N H04N 19/521
  - · · · · {for estimating the reliability of the determined motion vectors or motion vector field, e.g. for smoothing the motion vector field or for correcting motion vectors}
- N H04N 19/523
  - · · · with sub-pixel accuracy
- N H04N 19/527
  - · · · Global motion vector estimation
- N H04N 19/53
  - · · · Multi-resolution motion estimation; Hierarchical motion estimation
- N H04N 19/533
  - · · · Motion estimation using multistep search, e.g. 2D-log search or one-at-a-time search [OTS]
- N H04N 19/537
  - · · · Motion estimation other than block-based
- N H04N 19/54
  - · · · · using feature points or meshes
- N H04N 19/543
  - · · · · using regions
- N H04N 19/547
  - · · · Motion estimation performed in a transform domain
- N H04N 19/55
  - · · · Motion estimation with spatial constraints, e.g. at image or region borders
- N H04N 19/553
  - · · · Motion estimation dealing with occlusions
- N H04N 19/557
  - · · · Motion estimation characterised by stopping computation or iteration based on certain criteria, e.g. error magnitude being too large or early exit
- N H04N 19/56
  - · · · Motion estimation with initialisation of the vector search, e.g. estimating a good candidate to initiate a search
- N H04N 19/563
  - · · · Motion estimation with padding, i.e. with filling of non-object values in an arbitrarily shaped picture block or region for estimation purposes
- N H04N 19/567
  - · · · Motion estimation based on rate distortion criteria
- N H04N 19/57
  - · · · Motion estimation characterised by a search window with variable size or shape
- N H04N 19/573
  - · · · Motion compensation with multiple frame prediction using two or more reference frames in a given prediction direction
- N H04N 19/577
  - · · · Motion compensation with bidirectional frame interpolation, i.e. using B-pictures
- N H04N 19/58
  - · · · Motion compensation with long-term prediction, i.e. the reference frame for a current frame not being the temporally closest one ([H04N 19/23](#) takes precedence)
- N H04N 19/583
  - · · · Motion compensation with overlapping blocks
- N H04N 19/587
  - · involving temporal sub-sampling or interpolation, e.g. decimation or subsequent interpolation of pictures in a video sequence
- N H04N 19/59
  - · involving spatial sub-sampling or interpolation, e.g. alteration of picture size or resolution

- N H04N 19/593
  - • involving spatial prediction techniques
- N H04N 19/597
  - • specially adapted for multi-view video sequence encoding
- N H04N 19/60
  - using transform coding
- N H04N 19/61
  - • in combination with predictive coding
- N H04N 19/615
  - • • using motion compensated temporal filtering [MCTF]
- N H04N 19/619
  - • • {the transform being operated outside the prediction loop}
- N H04N 19/62
  - • by frequency transforming in three dimensions ([H04N 19/63](#) takes precedence)
- N H04N 19/625
  - • using discrete cosine transform [DCT]
- N H04N 19/63
  - • using sub-band based transform, e.g. wavelets
- N H04N 19/635
  - • • characterised by filter definition or implementation details
- N H04N 19/64
  - • • characterised by ordering of coefficients or of bits for transmission
- N H04N 19/645
  - • • • by grouping of coefficients into blocks after the transform
- N H04N 19/647
  - • • • {using significance based coding, e.g. Embedded Zerotrees of Wavelets [EZW] or Set Partitioning in Hierarchical Trees [SPIHT]}
- N H04N 19/649
  - • {the transform being applied to non rectangular image segments}
- N H04N 19/65
  - using error resilience
- N H04N 19/66
  - • involving data partitioning, i.e. separation of data into packets or partitions according to importance
- N H04N 19/67
  - • involving unequal error protection [UEP], i.e. providing protection according to the importance of the data
- N H04N 19/68
  - • involving the insertion of resynchronisation markers into the bitstream
- N H04N 19/69
  - • involving reversible variable length codes [RVLC]
- N H04N 19/70
  - characterised by syntax aspects related to video coding, e.g. related to compression standards
- N H04N 19/80
  - Details of filtering operations specially adapted for video compression, e.g. for pixel interpolation ([H04N 19/635](#), [H04N 19/86](#) take precedence)
- N H04N 19/82
  - • involving filtering within a prediction loop
- N H04N 19/85
  - using pre-processing or post-processing specially adapted for video compression
- N H04N 19/86
  - • involving reduction of coding artifacts, e.g. of blockiness
- N H04N 19/865
  - • • {with detection of the former encoding block subdivision in decompressed video}
- N H04N 19/87
  - • involving scene cut or scene change detection in combination with video compression
- N H04N 19/88
  - • involving rearrangement of data among different coding units, e.g. shuffling, interleaving, scrambling or permutation of pixel data or permutation of transform coefficient data among different blocks
- N H04N 19/89
  - • involving methods or arrangements for detection of transmission errors at the decoder
- N H04N 19/895
  - • • in combination with error concealment
- N H04N 19/90
  - using coding techniques not provided for in groups [H04N 19/10-H04N 19/85](#), e.g. fractals
- N H04N 19/91
  - • Entropy coding, e.g. variable length coding [VLC] or arithmetic coding
- N H04N 19/93
  - • Run-length coding
- N H04N 19/94
  - • Vector quantisation
- N H04N 19/96
  - • Tree coding, e.g. quad-tree coding

- N H04N 19/97      • • Matching pursuit coding
- N H04N 19/98      • • Adaptive-dynamic-range coding [ADRC]
- N H04N 19/99      • • {involving fractal coding}

**Project: RP0062 (H04N)**

- U 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](#) )**

NOTES

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 21/20
  - {Servers specifically adapted for the distribution of content, e.g. VOD servers; Operations thereof}
- U H04N 21/23
  - · {Processing of content or additional data; Elementary server operations; Server middleware}
- H04N 21/234
  - · · {Processing of video elementary streams, e.g. splicing of content streams, manipulating MPEG-4 scene graphs( video encoding or transcoding processes per se [H04N-7/26](#)[H04N 19/00](#) )}
- H04N 21/2343
  - · · · {involving reformatting operations of video signals for distribution or compliance with end-user requests or end-user device requirements( media manipulation, adaptation or conversion at the source in one way streaming for real-time multimedia communications [H04L 29/06489](#) ; video transcoding [H04N-7/26941](#)[H04N 19/40](#) )}
- 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 21/44
  - • • {Processing of video elementary streams, e.g. splicing a video clip retrieved from local storage with an incoming video stream, rendering scenes according to MPEG-4 scene graphs}
- H04N 21/4402
  - • • • {involving reformatting operations of video signals for household redistribution, storage or real-time display( adapting incoming signals to the display format of the display terminal [G09G 5/005](#) ; media manipulation, adaptation or conversion at the destination in one way streaming for real-time multimedia communications [H04L 29/06496](#) ; details of conversion of video standards at pixel level [H04N 7/01](#) ; video transcoding [H04N 7/26941](#)[H04N 19/40](#) )}
- U H04N 21/80
  - {Generation or processing of content or additional data by content creator independently of the distribution process; Content per se( arrangements for generating broadcast information [H04H 60/02](#) )}
- U H04N 21/83
  - • {Generation or processing of protective or descriptive data associated with content; Content structuring}
- U H04N 21/835
  - • • {Generation of protective data, e.g. certificates( protecting software against unauthorised usage in a vending or licensing environment [G06F 21/10](#) )}
- H04N 21/8358
  - • • • involving watermark{( protecting executable software by watermarking [G06F 21/16](#) ; image watermarking in general [G06T 1/0021](#) ; watermarks inserted in still images for transmission purposes [H04N 1/32144](#) ; inserting watermarks during video coding [H04N 7/26372](#)[H04N 19/467](#) )}

**Project: N/A (H04N)**

- U H04N 2201/00 **Indexing scheme relating to scanning, transmission or reproduction of documents or the like, and to details thereof**
- U H04N 2201/024
  - deleted
- H04N 2201/02402
  - • Arrangements for positioning heads, e.g. with respect to other elements of the apparatus

NOTE  
Subgroups [H04N 2201/02402](#) to [H04N 2201/02404](#) and [H04N 2201/02487](#) to [H04N 2201/02497](#) are for use with subgroups [H04N 1/024](#) to **[H04N1/031E](#)** [H04N 1/0318](#)

**Project: N/A (H04R)**

- U H04R 25/00 Deaf-aid sets{providing an auditory perception; Electric tinnitus maskers providing an auditory perception}{ constructions of transducers per se [H04R 9/00](#) to [H04R 23/00](#) ; { non-electric hearing aids [A61F 11/008](#) ; replacing direct auditory perception by another kind of perception [A61F 11/04](#) ; electrical stimulation of auditory nerves to promote the auditory function [A61N 1/36032](#) } ; structural combination with spectacle frames [G02C 11/06](#) ; processing of speech signals [G10L 21/00](#) )
- NOTE  
Classification should be directed to groups [H04R 25/02](#) , [H04R 25/04](#) or [H04R 25/50](#) and its subgroups, if and only if the technical subject in consideration cannot be classified elsewhere under the main group [H04R 25/00](#)
- WARNING  
Groups [H04R 25/30](#) to [H04R 25/75](#) do not correspond to former or current IPC groups.
- U H04R 25/65 · {Housing parts, e.g. shells, tips or moulds, or their manufacture}
- U H04R 25/652 · · {Ear tips; Ear moulds}
- H04R 25/656 · · · {Non-customized, universal ear tips, i.e. ear tips which are not specifically adapted to the size or shape of the ear or ear canal}
- WARNING  
Not complete pending a reorganization, see also [H04R25/65B](#)[H04R 25/652](#)

**Project: N/A (H04T)**

- U H04T 2029/00 Standards related to data transmission protocols not covered by any of the codes [H04T 2001/00](#) to [H04T 2012/00](#)
- H04T 2029/06 · Internet Standards
- NOTE  
The indexing codes of this scheme are to be used mainly with classification in subgroups [H04L 29/06](#) to [H04L29/06R](#)[H04L 29/06544](#). In this scheme [H04T 2029/06](#) codes are mapped whenever possible or appropriate to the corresponding entries and have the same meaning

**Project: N/A (H05H)**

- U H05H 1/00 **Generating plasma; Handling plasma**
- U H05H 1/02 · Arrangements for confining plasma by electric or magnetic fields; Arrangements for heating plasma ({ [G21B 1/00](#) takes precedence;} electron optics [H01J](#))
- U H05H 1/10 · · using externally-applied magnetic field only {e.g. Q-machines, Yin-Yang, base-ball}
- H05H 1/14 · · · wherein the containment vessel is straight and has magnetic mirrors  
{~~electron mirrors~~ [G21K1/08B](#)}

**Project: N/A (H05K)**

- U H05K 9/00 Screening of apparatus or components against electric or magnetic fields( devices for absorbing radiation from an aerial [H01Q 17/00](#) ; { screening of semiconductor devices [H01L 24/00](#) , [H01L 23/58](#) ; screening structurally associated with dynamo-electric machines [H02K 11/00](#) ; shielding against nuclear radiation [G21F](#) })
- H05K 9/0007 · {Casings( standardised racks [H05K9/00C](#)[H05K 9/0062](#))}

**Project: N/A (Y02C)**

- Y02C 10/00** **CO<sub>2</sub> capture or storage (not used, see subgroups)**
- Y02C 10/14 · Subterranean or submarine CO<sub>2</sub> storage
- Y02C 20/00** **Capture or disposal of greenhouse gases [GHG] other than CO<sub>2</sub> (not used, see subgroups)**
- Y02C 20/10 · of nitrous oxide (N<sub>2</sub>O)
- Y02C 20/30 · of perfluorocarbons [PFC], hydrofluorocarbons [HFC] or sulfur hexafluoride [SF<sub>6</sub>]

**Project: N/A (Y02E)**

- U Y02E 10/00** **Energy generation through renewable energy sources**
- U Y02E 10/50 · Photovoltaic [PV] energy
- U Y02E 10/54 · · Material technologies (not used; see subgroups)
- Y02E 10/541 · · · CuInSe<sub>2</sub>CuInSe<sub>2</sub> material PV cells
- U Y02E 20/00** **Combustion technologies with mitigation potential**
- U Y02E 20/30 · Technologies for a more efficient combustion or heat usage (not used, see subgroups)
- Y02E 20/32 · · Direct CO<sub>2</sub> mitigation (not used, see subgroups)
- Y02E 20/34 · · Indirect CO<sub>2</sub> mitigation, i.e. by acting on non CO<sub>2</sub> directly related matters of the process, e.g. more efficient use of fuels (not used, see subgroups)