

Compilation of Changes to the CPC Scheme Between 2016.11 and 2017.01

Presentation Details

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

Project: RP0414 (A01K)

A01K 11/00	Marking of animals (of poultry A01K 35/00 {; {of fish A01K 61/00 A01K 61/90 }; lead-sealing pliers B25B)
C A01K 61/00	<p>Culture of fish, mussels, crayfish, lobsters, sponges, pearls or the like aquatic animals (harvesting oysters, mussels, sponges or the like A01K 80/00 receptacles for live fish, e.g. aquaria, A01K 63/00)</p> <p>WARNING</p> <p>Group A01K 61/00 is impacted by reclassification into groups A01K 61/00, A01K 61/10, A01K 61/13, A01K 61/20, A01K 61/30, A01K 61/40, A01K 61/50, A01K 61/51, A01K 61/53, A01K 61/60, A01K 61/65, A01K 61/80, A01K 61/85, A01K 61/90, and A01K 61/95.</p> <p>All groups listed in this Warning should be considered in order to perform a complete search.</p>
D A01K 61/001	• {Sorting, grading counting or marking live fish; Sex determination (sorting dead fish A22C 25/04; sorting in general B07B, B07C; counting in general G06M)} <administratively transferred to A01K 61/90 >
D A01K 61/002	• {Culture of bivalves, e.g. oysters, mussels} <administratively transferred to A01K 61/54 >
D A01K 61/003	• {Cleaning bottoms or walls of ponds or receptacles (cleaning windows A47L; cleaning in general B08B; tank cleaning specially adapted for vessels B63B 57/00; cleaning devices for hulls B63B 59/00; devices for cleaning the submerged surfaces of a swimming pool E04H 4/16)} <administratively transferred to A01K 63/10 >
D A01K 61/005	• {Culture of crustacea, e.g. lobsters, prawns, shrimps} <administratively transferred to A01K 61/59 >
D A01K 61/006	• {Artificial reefs specially adapted for the culture of fish} <administratively transferred to A01K 61/70 >
D A01K 61/007	• {Floating fish-farms} <administratively transferred to A01K 61/60 >
D A01K 61/008	• {Incubators or hatching devices for fish} <administratively transferred to A01K 61/17 >
D A01K 61/02	• Feeding devices for fish {(fish food A23K 50/80)} <administratively transferred to A01K 61/80 >
D A01K 61/025	• • {for use with aquaria} <administratively transferred to A01K 61/85 >
N A01K 61/10	<p>• of fish</p> <p>WARNING</p> <p>Groups A01K 61/10 – A01K 61/13 are incomplete pending reclassification of documents from group A01K 61/00.</p>

Groups [A01K 61/00](#) and [A01K 61/10](#) – [A01K 61/13](#) should be considered in order to perform a complete search.

- N A01K 61/13 • • Prevention or treatment of fish diseases
- N A01K 61/17 • • Hatching, e.g. incubators
- N A01K 61/20 • of zooplankton, e.g. water fleas or Rotatoria

WARNING

Group [A01K 61/20](#) is incomplete pending reclassification of documents from group [A01K 61/00](#).

Groups [A01K 61/00](#) and [A01K 61/20](#) should be considered in order to perform a complete search.

- N A01K 61/30 • of sponges, sea urchins or sea cucumbers

WARNING

Group [A01K 61/30](#) is incomplete pending reclassification of documents from group [A01K 61/00](#).

Groups [A01K 61/00](#) and [A01K 61/30](#) should be considered in order to perform a complete search.

- N A01K 61/40 • of annelids, e.g. lugworms or Eunice

WARNING

Group [A01K 61/40](#) is incomplete pending reclassification of documents from group [A01K 61/00](#).

Groups [A01K 61/00](#) and [A01K 61/40](#) should be considered in order to perform a complete search.

- N A01K 61/50 • of shellfish ([A01K 61/30](#), [A01K 61/40](#) take precedence)

WARNING

Groups [A01K 61/50](#) – [A01K 61/53](#) are incomplete pending reclassification of documents from group [A01K 61/00](#).

Groups [A01K 61/00](#) and [A01K 61/50](#) – [A01K 61/53](#) should be considered in order to perform a complete search.

- N A01K 61/51 • • of gastropods, e.g. abalones or turban snails

- N A01K 61/53 • • • Baskets therefor

- Q A01K 61/54 • • of bivalves, e.g. oysters or mussels

WARNING

Group [A01K 61/54](#) is impacted by reclassification of documents into groups [A01K 61/55](#) – [A01K 61/57](#).

Groups [A01K 61/54](#) and [A01K 61/55](#) – [A01K 61/57](#) should be considered in order to perform a complete search.

- N A01K 61/55 • • • Baskets therefor

WARNING

Group [A01K 61/55](#) is incomplete pending reclassification of documents from group [A01K 61/54](#).

Groups [A01K 61/54](#) and [A01K 61/55](#) should be considered in order to perform a complete search.

- N A01K 61/56 • • • for pearl production

WARNING

Group [A01K 61/56](#) is incomplete pending reclassification of documents from group [A01K 61/54](#).

Groups [A01K 61/54](#) and [A01K 61/56](#) should be considered in order to perform a complete search.

N A01K 61/57

- • • Pearl seeds

WARNING

Group [A01K 61/57](#) is incomplete pending reclassification of documents from group [A01K 61/54](#).

Groups [A01K 61/54](#) and [A01K 61/57](#) should be considered in order to perform a complete search.

N A01K 61/59

- • of crustaceans, e.g. lobsters or shrimps

Q A01K 61/60

- Floating cultivation devices, e.g. rafts or floating fish-farms

WARNING

Group [A01K 61/60](#) is incomplete pending reclassification of documents from group [A01K 61/00](#). Group [A01K 61/60](#) is also impacted by reclassification into groups [A01K 61/65](#).

Groups [A01K 61/60](#), [A01K 61/00](#) and [A01K 61/65](#) should be considered in order to perform a complete search.

N A01K 61/65

- • Connecting or mooring devices therefor

WARNING

Group [A01K 61/65](#) is incomplete pending reclassification of documents from groups [A01K 61/00](#) and [A01K 61/60](#).

Groups [A01K 61/65](#), [A01K 61/00](#), and [A01K 61/60](#) should be considered in order to perform a complete search.

Q A01K 61/70

- Artificial fishing banks or reefs

WARNING

Group [A01K 61/70](#) is impacted by reclassification into groups [A01K 61/72](#), [A01K 61/73](#), [A01K 61/75](#), [A01K 61/77](#), and [A01K 61/78](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N A01K 61/72

- • made of tyres

WARNING

Group [A01K 61/72](#) is incomplete pending reclassification of documents from group [A01K 61/70](#).

Groups [A01K 61/70](#) and [A01K 61/72](#) should be considered in order to perform a complete search.

N A01K 61/73

- • assembled of components ([A01K 61/72](#) takes precedence)

WARNING

Group [A01K 61/73](#) is incomplete pending reclassification of documents from group [A01K 61/70](#).

Groups [A01K 61/70](#) and [A01K 61/73](#) should be considered in order to perform a complete search.

N A01K 61/75

- • floating ([A01K 61/72](#) takes precedence)

WARNING

Group [A01K 61/75](#) is incomplete pending reclassification of documents from group [A01K 61/70](#).

Groups [A01K 61/70](#) and [A01K 61/75](#) should be considered in order to perform a complete search.

- N A01K 61/77
- of monolithic form, e.g. blocks
- WARNING
Group [A01K 61/77](#) is incomplete pending reclassification of documents from group [A01K 61/70](#).
Groups [A01K 61/70](#) and [A01K 61/77](#) should be considered in order to perform a complete search.
- N A01K 61/78
- Arrangements for sinking or mooring thereof
- WARNING
Group [A01K 61/78](#) is incomplete pending reclassification of documents from group [A01K 61/70](#).
Groups [A01K 61/70](#) and [A01K 61/78](#) should be considered in order to perform a complete search.
- N A01K 61/80
- Feeding devices
- WARNING
Group [A01K 61/80](#) is incomplete pending reclassification of documents from group [A01K 61/00](#).
Groups [A01K 61/00](#) and [A01K 61/80](#) should be considered in order to perform a complete search.
- N A01K 61/85
- for use with aquaria
- WARNING
Group [A01K 61/85](#) is incomplete pending reclassification of documents from group [A01K 61/00](#).
Groups [A01K 61/00](#) and [A01K 61/85](#) should be considered in order to perform a complete search.
- Q A01K 61/90
- Sorting, grading, counting or marking live aquatic animals, e.g. sex determination
- WARNING
Group [A01K 61/90](#) is impacted by reclassification of documents into group [A01K 61/95](#).
Groups [A01K 61/90](#) and [A01K 61/95](#) should be considered in order to perform a complete search.
- N A01K 61/95
- specially adapted for fish
- WARNING
Group [A01K 61/95](#) is incomplete pending reclassification of documents from group [A01K 61/90](#).
Groups [A01K 61/90](#) and [A01K 61/95](#) should be considered in order to perform a complete search.
- C A01K 63/00
- Receptacles for live fish, e.g. aquaria (keepnets or other containers for keeping captured fish [A01K 97/20](#)); Terraria ~~{{receptacles for rearing fish A01K-61/00}}~~**
- WARNING
Group [A01K 63/00](#) is impacted by reclassification into group [A01K 63/10](#).
Groups [A01K 63/00](#) and [A01K 63/10](#) should be considered in order to perform a complete search.
- A01K 63/04
- Arrangements for treating water specially adapted to receptacles for live fish; {, e.g. filters, water pumps}({cleaning receptacles ~~A01K-61/00~~[A01K 63/10](#);} filters in general [B01D](#); water treatment in general [C02F](#))

- U A01K 63/06 · Arrangements for heating or lighting in, or attached to, receptacles for live fish (heating, {cooling} or lighting apparatus per se [F21](#), [H01](#), [H05B](#))
- U A01K 63/065 · · {Heating or cooling devices}
- N A01K 63/10 · *Cleaning bottoms or walls of ponds or receptacles*

WARNING

Group [A01K 63/10](#) is incomplete pending reclassification of documents from group [A01K 63/00](#).

Groups [A01K 63/00](#) and [A01K 63/10](#) should be considered in order to perform a complete search.

Project: RP0412 (A21C)

- U A21C 15/00 **Apparatus for handling baked articles**
- A21C 15/007 · {Apparatus for filling baked articles (filling pieces of dough [A21C 9/06](#); filled bakery products ~~A21D 13/0019~~ [A21D 13/30](#), ~~A21D 13/085~~ [A21D 13/80](#))}

Project: RP0412 (A21D)

- M A21D 13/00 **Finished or partly finished ~~{{par-baked}}~~ bakery products**
- D A21D 13/0003 · {Partially or completely coated bakery products (multi-layered bakery products with coating A21D 13/0051, A21D 13/0061)}
<administratively transferred to [A21D 13/20](#)>
- D A21D 13/0006 · · {Coated before baking the dough}
<administratively transferred to [A21D 13/22](#)>
- D A21D 13/0009 · · {Coated after baking the dough}
<administratively transferred to [A21D 13/24](#)>
- D A21D 13/0012 · · {comprising a barrier coating against migration}
<administratively transferred to [A21D 13/26](#)>
- D A21D 13/0016 · · {Special coating composition (icing or frosting A23G 3/00)}
<administratively transferred to [A21D 13/28](#)>
- D A21D 13/0019 · {Filled or stuffed bakery products (multi-layered bakery products with filling A21D 13/0054, A21D 13/0064)}
<administratively transferred to [A21D 13/30](#)>
- D A21D 13/0022 · · {Filled before baking of the dough}
<administratively transferred to [A21D 13/31](#)>
- D A21D 13/0025 · · {Filled or to be filled after baking of the dough, e.g. sandwiches}
<administratively transferred to [A21D 13/32](#)>
- D A21D 13/0029 · · · {Edible containers, e.g. cups or cones to be filled}
<administratively transferred to [A21D 13/33](#)>
- D A21D 13/0032 · · {comprising a barrier against migration between filling and dough or bakery product}
<administratively transferred to [A21D 13/34](#)>
- D A21D 13/0035 · · {Filled wafers}
<administratively transferred to [A21D 13/36](#)>
- D A21D 13/0038 · · {Co-extruded product, i.e. obtained by co-extruding the dough and the filling}
<administratively transferred to [A21D 13/37](#)>
- D A21D 13/0041 · · {Special filling composition}
<administratively transferred to [A21D 13/38](#)>
- D A21D 13/0045 · {Multi-layered bakery products}
<administratively transferred to [A21D 13/10](#)>

- D A21D 13/0048
 - {made of at least 2 different doughs, e.g. differing in composition, colour or structure}
 - <administratively transferred to [A21D 13/11](#)>
- D A21D 13/0051
 - • {with coating}
 - <administratively transferred to [A21D 13/13](#)>
- D A21D 13/0054
 - • {with filling}
 - <administratively transferred to [A21D 13/14](#)>
- D A21D 13/0058
 - {multi-layered pastry, e.g. puff pastry, danish pastry, laminated dough}
 - <administratively transferred to [A21D 13/16](#)>
- D A21D 13/0061
 - • {with coating}
 - <administratively transferred to [A21D 13/17](#)>
- D A21D 13/0064
 - • {with filling}
 - <administratively transferred to [A21D 13/19](#)>
- D A21D 13/0067
 - {Special bakery products}
 - <administratively transferred to [A21D 13/40](#)>
- D A21D 13/007
 - {Pizza}
 - <administratively transferred to [A21D 13/41](#)>
- D A21D 13/0074
 - {Tortilla}
 - <administratively transferred to [A21D 13/42](#)>
- D A21D 13/0077
 - {Pancakes; Crepes}
 - <administratively transferred to [A21D 13/44](#)>
- D A21D 13/008
 - {Wafers (with filling A21D 13/0035)}
 - <administratively transferred to [A21D 13/45](#)>
- D A21D 13/0083
 - {Croutons from bread or bakery products (farinaceous granules A23L 7/157)}
 - <administratively transferred to [A21D 13/46](#)>
- D A21D 13/0087
 - {Decorated or decorative bakery products}
 - <administratively transferred to [A21D 13/47](#)>
- D A21D 13/009
 - {Bakery products with first function other than for eating, e.g. toys, cutlery}
 - <administratively transferred to [A21D 13/48](#)>
- D A21D 13/0093
 - {Solidified foamed products, e.g. meringues}
 - <administratively transferred to [A21D 13/50](#)>
- D A21D 13/0096
 - {Fat fried bakery products, e.g. doughnuts, spring rolls}
 - <administratively transferred to [A21D 13/60](#)>
- M A21D 13/02
 - **Products made from whole meal; Bakery products from whole meal Products containing bran** or **containing** rough-ground grain **or bran**
- C A21D 13/04
 - **Bread Products made** from materials other than rye or wheat flour **{, e.g. rice flour}**

WARNING

Group [A21D 13/04](#) is impacted by reclassification into groups [A21D 13/043](#), [A21D 13/045](#) and [A21D 13/047](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A21D 13/043
 - from tubers, e.g. manioc or potato
- WARNING**
- Group [A21D 13/043](#) is incomplete pending reclassification of documents from group [A21D 13/04](#).
- Groups [A21D 13/04](#) and [A21D 13/043](#) should be considered in order to perform a complete search.

- N A21D 13/045
- from leguminous plants
- WARNING
Group [A21D 13/045](#) is incomplete pending reclassification of documents from group [A21D 13/04](#).
Groups [A21D 13/04](#) and [A21D 13/045](#) should be considered in order to perform a complete search.
- N A21D 13/047
- from cereals other than rye or wheat, e.g. rice
- WARNING
Group [A21D 13/047](#) is incomplete pending reclassification of documents from group [A21D 13/04](#).
Groups [A21D 13/04](#) and [A21D 13/047](#) should be considered in order to perform a complete search.
- M A21D 13/06
- Bread ~~Products~~ with modified ~~starch or protein content~~ *nutritive value*, {e.g. with modified *nutritive value*} *starch content*
- M A21D 13/062
- {with modified *glucid* *sugar* content}; *Sugar-free products*
- M A21D 13/064
- {with modified protein content}
- M A21D 13/066
- • {Gluten-free products}
- M A21D 13/068
- {with modified fat content ~~or fat-free~~}; *Fat-free products*
- D A21D 13/08
- Pastry, e.g. cake, biscuits, {cookies}
- <administratively transferred to [A21D 13/80](#)>
- D A21D 13/082
- {dummy}
- <administratively transferred to [A21D 13/80](#)>
- D A21D 13/085
- {dummy}
- <administratively transferred to [A21D 13/80](#)>
- D A21D 13/087
- {dummy}
- <administratively transferred to [A21D 13/80](#)>
- N A21D 13/10
- Multi-layered products
- N A21D 13/11
- • made of two or more doughs, e.g. differing in composition, colour or structure
- N A21D 13/13
- • • with coatings
- N A21D 13/14
- • • with fillings
- N A21D 13/16
- Multi-layered pastry, e.g. puff pastry; Danish pastry or laminated dough
- N A21D 13/17
- • • with coatings
- N A21D 13/19
- • • with fillings
- N A21D 13/20
- Partially or completely coated products (multi-layered bakery products with coatings [A21D 13/13](#), [A21D 13/17](#))
- N A21D 13/22
- • coated before baking
- N A21D 13/24
- • coated after baking
- N A21D 13/26
- • the coating forming a barrier against migration
- N A21D 13/28
- • characterised by the coating composition
- N A21D 13/30
- Filled, to be filled or stuffed products (multi-layered products with fillings [A21D 13/14](#), [A21D 13/19](#))
- N A21D 13/31
- • filled before baking
- N A21D 13/32
- • filled or to be filled after baking, e.g. sandwiches
- N A21D 13/33
- • • Edible containers, e.g. cups or cones
- N A21D 13/34
- • the filling forming a barrier against migration
- N A21D 13/36
- Filled wafers

- N A21D 13/37
- Co-extruded products, i.e. products obtained by simultaneous extrusion of the dough and the filling
- N A21D 13/38
- characterised by the filling composition
- Q A21D 13/40
- Products characterised by the type, form or use
- WARNING**
Group [A21D 13/40](#) is impacted by reclassification into groups [A21D 13/43](#), [A21D 13/40](#) and [A21D 13/43](#) should be considered in order to perform a complete search.
- N A21D 13/41
- Pizzas
- N A21D 13/42
- Tortillas
- N A21D 13/43
- Flatbreads, e.g. naan
- WARNING**
Group [A21D 13/43](#) is incomplete pending reclassification of documents from group [A21D 13/40](#). Groups [A21D 13/40](#) and [A21D 13/43](#) should be considered in order to perform a complete search.
- N A21D 13/44
- Pancakes or crêpes
- N A21D 13/45
- Wafers (filled wafers [A21D 13/36](#))
- N A21D 13/46
- Croutons
- N A21D 13/47
- Decorated or decorative products
- N A21D 13/48
- Products with an additional function other than for eating, e.g. toys or cutlery
- N A21D 13/50
- Solidified foamed products, e.g. meringues
- N A21D 13/60
- Deep-fried products, e.g. doughnuts
- N A21D 13/80
- Pastry not otherwise provided for elsewhere, e.g. cakes, biscuits or cookies

Project: RP0408 (A47B)

- C A47B 88/00** Drawers for tables, cabinets or like furniture; Guides for drawers ([A47B 63/02](#) takes precedence; drawers coupled to doors [A47B 96/16](#); ~~{locks for drawers, e.g. anti-tilt interlock E05B 65/46}~~)
- WARNING**
Group [A47B 88/00](#) is impacted by reclassification into groups [A47B 88/90](#), [A47B 88/969](#), [A47B 88/981](#), [A47B 88/988](#), and [A47B 88/994](#). All groups listed in this Warning should be considered in order to perform a complete search.
- D A47B 88/0003
- {Drawers being made of one piece of material, e.g. moulded or formed from sheet material having at least four folding lines}
<administratively transferred to [A47B 88/906](#)>
- D A47B 2088/0007
- {Drawers having additional side walls mountable on existing side walls}
<administratively transferred to [A47B 88/925](#)>
- D A47B 2088/0011
- {Covers for drawers preventing access to the interior}
<administratively transferred to [A47B 88/919](#)>
- D A47B 88/0014
- {Drawers being constructed from two or more parts}
<administratively transferred to [A47B 88/941](#)>
- D A47B 88/0018
- {with at least two sides foldable or hinged}
<administratively transferred to [A47B 88/9412](#)>
- D A47B 88/0022
- • {connecting first side panel to bottom panel, back panel to bottom panel and second side panel to bottom by three folding lines}
<administratively transferred to [A47B 88/9414](#)>

- D A47B 2088/0403
 - {Drawers being extractable on at least two sides of the cabinet}
 - <administratively transferred to [A47B 88/403](#)>
- D A47B 88/0407
 - {adjustably or detachably mounted in a cabinet or under a table top or the like}
 - <administratively transferred to [A47B 88/407](#)>
- D A47B 88/0411
 - {Drawers with castors, rollers or wheels, supported directly on a surface below, e.g. on a floor, shelf or desktop}
 - <administratively transferred to [A47B 88/41](#)>
- D A47B 88/0414
 - {electrically operated}
 - <administratively transferred to [A47B 88/457](#)>
- D A47B 88/0418
 - {Fastening devices for slides or guides}
 - <administratively transferred to [A47B 88/423](#)>
- D A47B 88/0422
 - • {at drawer side}
 - <administratively transferred to [A47B 88/427](#)>
- D A47B 2088/0425
 - • • {ensuring a correct connection at the moment when the drawer is coupled to the drawer rail}
 - <administratively transferred to [A47B 2088/4272](#)>
- D A47B 2088/0429
 - • • {the drawer being detachable as a whole from a slide frame}
 - <administratively transferred to [A47B 2088/4274](#)>
- D A47B 2088/0433
 - • • {at drawer front via latch means or locking lever}
 - <administratively transferred to [A47B 2088/4276](#)>
- D A47B 2088/0437
 - • • {Quick-release clip}
 - <administratively transferred to [A47B 2088/4278](#)>
- D A47B 88/044
 - • {at cabinet side}
 - <administratively transferred to [A47B 88/43](#)>
- D A47B 2088/0444
 - • {having a latch mechanism coupling or disconnecting a drawer with drawer side slide from the rest of the slide members}
 - <administratively transferred to [A47B 2088/4235](#)>
- D A47B 2088/0448
 - {Slides or guides for wire baskets}
 - <administratively transferred to [A47B 2088/401](#)>
- D A47B 88/0451
 - {Profiled walls having grooves or protuberances for supporting multiple drawers}
 - <administratively transferred to [A47B 88/417](#)>
- D A47B 88/0455
 - {Profiles or supporting structures for supporting single drawers (A47B 88/044 takes precedence)}
 - <administratively transferred to [A47B 88/402](#)>
- D A47B 2088/0459
 - {with magnets holding the drawer in closed position}
 - <administratively transferred to [A47B 2088/4015](#)>
- D A47B 88/0462
 - {with a couple of pivotally retractable roller supporting arms at the backside of the drawer}
 - <administratively transferred to [A47B 88/433](#)>
- D A47B 88/0466
 - {Rollers for slides or guides}
 - <administratively transferred to [A47B 88/437](#)>
- D A47B 88/047
 - {self-closing}
 - <administratively transferred to [A47B 88/467](#)>
- D A47B 2088/0474
 - • {with detent or emboss on slide}
 - <administratively transferred to [A47B 2088/4675](#)>
- D A47B 88/0477
 - {Self-opening, e.g. by touch-latch, touch-touch or push-push movements}
 - <administratively transferred to [A47B 88/463](#)>
- D A47B 88/0481
 - {both self-closing and self-opening}
 - <administratively transferred to [A47B 88/47](#)>

- D A47B 88/0485 • • {Vertically-oriented drawers}
<administratively transferred to [A47B 88/42](#)>
- D A47B 2088/0488 • • • {the bottom, cabinet side slide having a U-shape section opening upwards}
<administratively transferred to [A47B 2088/421](#)>
- D A47B 2088/0492 • • • {Fittings for connecting the front panel}
<administratively transferred to [A47B 2088/422](#)>
- D A47B 2088/0496 • • {Furniture base drawers or drawers with plinths}
<administratively transferred to [A47B 88/413](#)>
- D A47B 88/06 • • Drawers which can be rotated while or after sliding out
<administratively transferred to [A47B 88/48](#)>
- D A47B 88/08 • • with double extensible guides or parts
<administratively transferred to [A47B 88/49](#)>
- D A47B 88/10 • • • with rollers, ball bearings, wheels, or the like
<administratively transferred to [A47B 88/493](#)>
- D A47B 88/12 • • with other guiding mechanisms
<administratively transferred to [A47B 88/483](#)>
- D A47B 88/14 • • • with rollers, ball bearings, wheels, or the like
<administratively transferred to [A47B 88/487](#)>
- D A47B 88/16 • • with devices to prevent complete withdrawal
<administratively transferred to [A47B 88/57](#)>
- D A47B 88/18 • Drawers tiltably or pivotally arranged
<administratively transferred to [A47B 88/60](#)>
- D A47B 88/20 • Drawers with compartments {(partitions for show shelves A47F 5/005)}
<administratively transferred to [A47B 88/90](#)>
- D A47B 2088/202 • • {Partition walls and holders therefore}
<administratively transferred to [A47B 88/975](#)>
- D A47B 2088/205 • • • {with separate holders}
<administratively transferred to [A47B 2088/976](#)>
- D A47B 2088/207 • • • {with stamped sheet metal holding the partition walls}
<administratively transferred to [A47B 2088/977](#)>
- D A47B 88/22 • Concealed drawers
<administratively transferred to [A47B 88/80](#)>
- Q A47B 88/40 • Sliding drawers; Slides or guides therefor
WARNING
Group [A47B 88/40](#) is impacted by reclassification into groups [A47B 88/44](#),
[A47B 88/443](#), [A47B 88/447](#), [A47B 88/45](#), [A47B 88/453](#), [A47B 88/46](#),
[A47B 88/473](#), and [A47B 88/477](#).
All groups listed in this Warning should be considered in order to perform a
complete search.
- N A47B 2088/401 • • {Slides or guides for wire baskets}
- N A47B 2088/4015 • • {with magnets holding the drawer in closed position}
- N A47B 88/402 • • {Profiles or supporting structures for supporting single drawers}
- N A47B 88/403 • • Drawer slides being extractable on two or more sides of the cabinet
- N A47B 88/407 • • Adjustably or detachably mounted drawers ([A47B 88/423](#) takes precedence)
- N A47B 88/41 • • Drawers with castors, rollers or wheels, supported directly on a surface
below, e.g. on a floor, shelf or desktop
- N A47B 88/413 • • Drawers slidable into a space provided between furniture body and floor, e.g.
plinth drawers
- N A47B 88/417 • • Profiled cabinet walls with grooves or protuberances for supporting drawers

- N A47B 88/42 • • Vertically-oriented drawers, i.e. drawers where the height exceeds the width
- N A47B 2088/421 • • • {the bottom, cabinet side slide having a U-shape section opening upwards}
- N A47B 2088/422 • • • {Fittings for connecting the front panel}
- N A47B 88/423 • • Fastening devices for slides or guides
- N A47B 2088/4235 • • • {having a latch mechanism coupling or disconnecting a drawer with drawer side slide from the rest of the slide members}
- N A47B 88/427 • • • at drawer side
- N A47B 2088/4272 • • • • {ensuring a correct connection at the moment when the drawer is coupled to the drawer rail}
- N A47B 2088/4274 • • • • {the drawer being detachable as a whole from a slide frame}
- N A47B 2088/4276 • • • • {at drawer front via latch means or locking lever}
- N A47B 2088/4278 • • • • {Quick-release clip}
- N A47B 88/43 • • • at cabinet side
- N A47B 88/433 • • Drawers with a couple of pivotally retractable, roller-supporting arms at the rear of the drawer, e.g. for curved slides or guides
- N A47B 88/437 • • Rollers for slides or guides
- N A47B 88/44 • • Sequencing or synchronisation of drawer slides or functional units

WARNING

Groups [A47B 88/44](#), [A47B 88/443](#), [A47B 88/447](#), and [A47B 88/45](#) are incomplete pending reclassification of documents from group [A47B 88/40](#). All groups listed in this Warning should be considered in order to perform a complete search.

- N A47B 88/443 • • • Successive movement of rails within drawer slides, i.e. at least one rail element is not moving during the movement of other elements
- N A47B 88/447 • • • Simultaneous movement of rails within drawer slides, i.e. with a coordination of movement with all rail elements moving at the same time
- N A47B 88/45 • • • Synchronisation of cooperating drawer slides, i.e. with a coordination of the rail movement of different drawer slides
- N A47B 88/453 • • Actuated drawers

WARNING

Groups [A47B 88/453](#) and [A47B 88/46](#) are incomplete pending reclassification of documents from group [A47B 88/40](#).

Groups [A47B 88/453](#), [A47B 88/46](#), and [A47B 88/40](#) should be considered in order to perform a complete search.

- N A47B 88/457 • • • operated by electrically-powered actuation means
- N A47B 88/46 • • • operated by mechanically-stored energy, e.g. by springs
- N A47B 88/463 • • • • self-opening
- N A47B 88/467 • • • • self-closing
- N A47B 2088/4675 • • • • • {with detent or emboss on slide}
- N A47B 88/47 • • • • having both self-opening and self-closing mechanisms which interact with each other
- N A47B 88/473 • • Braking devices, e.g. linear or rotational dampers or friction brakes; Buffers; End stops

WARNING

Groups [A47B 88/473](#) and [A47B 88/477](#) are incomplete pending reclassification of documents from groups [A47B 88/40](#) and [E05F 5/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A47B 88/477 • • • Buffers; End stops
- N A47B 88/48 • • Drawers which can be rotated while or after sliding out
- Q A47B 88/483 • • with single extensible guides or parts

WARNING

Group [A47B 88/483](#) is impacted by reclassification of documents into group [A47B 88/497](#).

Groups [A47B 88/483](#) and [A47B 88/497](#) should be considered in order to perform a complete search.

- Q A47B 88/487 • • • with rollers, ball bearings, wheels, or the like

WARNING

Group [A47B 88/487](#) is impacted by reclassification of documents into group [A47B 88/497](#).

Groups [A47B 88/487](#) and [A47B 88/497](#) should be considered in order to perform a complete search.

- N A47B 88/49 • • with double extensible guides or parts
- N A47B 88/493 • • • with rollers, ball bearings, wheels, or the like
- N A47B 88/497 • • with other guiding mechanisms, e.g. scissor mechanisms

WARNING

Group [A47B 88/497](#) is incomplete pending reclassification of documents from groups [A47B 88/483](#) and [A47B 88/487](#).

Groups [A47B 88/483](#), [A47B 88/487](#), and [A47B 88/497](#) should be considered in order to perform a complete search.

- N A47B 88/50 • Safety devices or the like for drawers (locks specially adapted for a plurality of drawers [E05B 65/46](#))
- N A47B 88/53 • • preventing unintentional closing, e.g. anti-pinch devices
- N A47B 88/57 • • preventing complete withdrawal of the drawer
- N A47B 88/60 • Tiltably- or pivotally-arranged drawers
- N A47B 88/70 • Coupled drawers
- N A47B 88/75 • • the secondary drawer being in or above the primary drawer
- N A47B 2088/76 • • • {Coupling means therefor}
- N A47B 88/80 • Concealed drawers
- Q A47B 88/90 • Constructional details of drawers

WARNING

Group [A47B 88/90](#) is incomplete pending reclassification of documents from group [A47B 88/00](#). Group [A47B 88/90](#) is also impacted by reclassification into groups [A47B 88/969](#), [A47B 88/981](#), [A47B 88/988](#), and [A47B 88/994](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A47B 2088/901 • • {Drawers having a lifting mechanism}
- N A47B 2088/902 • • {Corner connectors for drawers}
- N A47B 88/906 • • Drawers being made of one piece of material, e.g. formed from folded sheet material or moulded
- N A47B 88/913 • • Drawers in which among the side walls, the rear wall or the bottom panel, at least one is connected to another one of these elements through a living hinge

- N A47B 88/919
 - • Accessories or additional elements for drawers, e.g. drawer lighting (drawers having organising or sorting means [A47B 88/969](#))
- N A47B 88/925
 - • • Additional side walls mountable on existing side walls
- N A47B 88/931
 - • • Rails or rods mounted above the drawer walls, e.g. for stabilisation of the drawer or for suspension of the content
- N A47B 88/938
 - • • • Means for connecting rails or rods to drawers
- N A47B 2088/939
 - • • {to the front panel of a drawer}
- N A47B 2088/94
 - • • {to the back wall of a drawer}
- N A47B 88/941
 - • {Drawers being constructed from two or more parts}
- N A47B 88/9412
 - • • {with at least two sides foldable or hinged}
- N A47B 88/9414
 - • • • {connecting first side panel to bottom panel, back panel to bottom panel and second side panel to bottom by three folding lines}
- N A47B 88/9416
 - • • • {connecting first side panel to back panel and back panel to second side panel by two folding lines}
- N A47B 88/9418
 - • • • {connecting first side panel to bottom and second side panel to bottom panel by two folding lines}
- N A47B 88/944
 - • Drawers characterised by the front panel
- N A47B 2088/9441
 - • • {the front panel being less wide than the drawer}
- N A47B 88/95
 - • • characterised by connection means for the front panel
- N A47B 2088/951
 - • • • {having male and female interlocking parts}
- N A47B 2088/952
 - • • • {having two parts and using a screw}
- N A47B 2088/953
 - • • • {fastening the front panel to a metal sheet side wall}
- N A47B 2088/954
 - • • • {fastening the front panel by a sprung bolt, latch or lock-bolt}
- N A47B 2088/955
 - • • • {fastening the front panel using a toggle-lever}
- N A47B 88/956
 - • • • for enabling adjustment of the front panel
- N A47B 88/963
 - • • having sealing means, e.g. gaskets
- N A47B 88/969
 - • Drawers having means for organising or sorting the content

WARNING

Groups [A47B 88/969](#) is incomplete pending reclassification of documents from groups [A47B 88/00](#) and [A47B 88/90](#).

Groups [A47B 88/00](#), [A47B 88/90](#), and [A47B 88/969](#) should be considered in order to perform a complete search.

- N A47B 88/975
 - • • in the form of repositionable partition walls
- N A47B 2088/976
 - • • {with separate holders}
- N A47B 2088/977
 - • • {with stamped sheet metal holding the partition walls}
- N A47B 88/981
 - • • in the form of vertical separation posts

WARNING

Groups [A47B 88/981](#) is incomplete pending reclassification of documents from groups [A47B 88/00](#) and [A47B 88/90](#).

Groups [A47B 88/00](#), [A47B 88/90](#), and [A47B 88/981](#) should be considered in order to perform a complete search.

- N A47B 88/988
 - • • in the form of holders for positioning specific articles

WARNING

Groups [A47B 88/988](#) is incomplete pending reclassification of documents from groups [A47B 88/00](#) and [A47B 88/90](#).

Groups [A47B 88/00](#), [A47B 88/90](#), and [A47B 88/988](#) should be considered in order to perform a complete search.

- N A47B 88/994
- • • in the form of trays or inserts
- WARNING
Groups [A47B 88/994](#) is incomplete pending reclassification of documents from groups [A47B 88/00](#) and [A47B 88/90](#).
Groups [A47B 88/00](#), [A47B 88/90](#), and [A47B 88/994](#) should be considered in order to perform a complete search.
- U A47B 96/00 **Details of cabinets, racks or shelf units not covered by a single one of groups [A47B 43/00](#) - [A47B 95/00](#); General details of furniture (doors [E06B](#))**
- U A47B 96/20
- A47B 96/202
- Furniture panels or like furniture elements
 - {with a continuous layer allowing folding (foldable cabinets [A47B 43/00](#); foldable drawers ~~A47B 88/0018~~[A47B 88/9412](#))}
- U A47B 2210/00 **General construction of drawers, guides and guide devices**
- D A47B 2210/0086
- Drawer safety devices
<administratively transferred to [A47B 88/50](#)>
- D A47B 2210/0089
- • Safety devices for drawers, e.g. anti-pinch
<administratively transferred to [A47B 88/53](#)>

Project: RP0408 (A47F)

- U A47F 5/00 **Show stands, hangers, or shelves characterised by their constructional features**
- U A47F 5/0043
- A47F 5/005
- {Show shelves (shelves in general [A47B 96/02](#); brackets or similar shelf-supporting means [A47B 96/06](#); advertising or price indication [G09F](#))}
 - • {Partitions therefore (horizontally adjustable [A47B 57/58](#); ~~drawers with compartments~~~~A47B 88/20~~; [constructional details of drawers](#) [A47B 88/90](#))}

Project: RP0409 (A61B)

- U A61B 5/00 **Detecting, measuring or recording for diagnostic purposes (radiation diagnosis [A61B 6/00](#); diagnosis by ultrasonic, sonic or infrasonic waves [A61B 8/00](#)); Identification of persons {(medical informatics [G06F 19/30](#))}**
- U A61B 5/74
- {Details of notification to user or communication with user or patient (indicating measured values [G01D 7/00](#)); user input means (input or output arrangements for computers [G06F 3/00](#))}
- WARNING
Group [A61B 5/74](#) and subgroups are not complete pending a reorganisation; see also other subgroups of [A61B 5/00](#)
- U A61B 5/742
- A61B 5/7425
- • {using visual displays ([A61B 5/044](#) takes precedence)}
 - • • {Displaying combinations of multiple images regardless of image source, e.g. displaying a reference anatomical image with a live image (geometric transforms for image registration [G06T 3/0068](#); enhancement using image fusion [G06T 5/50](#); algorithms for registration of images ~~G06T 7/0024~~[G06T 7/30](#))}
- U A61B 6/00 **Apparatus for radiation diagnosis, e.g. combined with radiation therapy equipment (analysis of materials using radiation [G01N 23/00](#), detecting hidden objects by radiation [G01V 5/0008](#), radiodiagnostic or X-ray contrast preparations [A61K 49/00](#); radiation therapy per se [A61N 5/00](#); instruments measuring radiation intensity for application in the field of nuclear medicine, e.g. in vivo counting [G01T 1/161](#); apparatus for taking X-ray photographs [G03B 42/02](#); X-ray photographic processes [G03C 5/16](#); irradiation devices [G21K](#); X-ray apparatus or circuits therefor [H05G 1/00](#))**

- U A61B 6/52 · {Devices using data or image processing specially adapted for radiation diagnosis (image processing per se [G06T](#))}
- U A61B 6/5211 · · {involving processing of medical diagnostic data}
- A61B 6/5229 · · · {combining image data of a patient, e.g. combining a functional image with an anatomical image (details of algorithms for image registration [G06T 7/0024](#)[G06T 7/30](#))}
- A61B 6/5258 · · {involving detection or reduction of artifacts or noise (details of algorithms for image enhancement [G06T 7/0022](#)[G06T 7/97](#))}
- U A61B 8/00** **Diagnosis using ultrasonic, sonic or infrasonic waves (imaging of objects using sonar [G01S 15/00](#))**
- U A61B 8/52 · {Devices using data or image processing specially adapted for diagnosis using ultrasonic, sonic or infrasonic waves (image processing per se [G06T](#))}
- WARNING
This subgroup is not complete pending a reorganisation, see [A61B 8/08](#) and [A61B 8/14](#)
- U A61B 8/5215 · · {involving processing of medical diagnostic data}
- A61B 8/5238 · · · {for combining image data of patient, e.g. merging several images from different acquisition modes into one image (for image registration algorithms [G06T 7/0024](#)[G06T 7/30](#))}

Project: N/A (A61C)**A61C**

DENTISTRY; APPARATUS OR METHODS FOR ORAL OR DENTAL HYGIENE (non-driven toothbrushes [A46B](#); {tongue scrapers [A61B 17/24](#); preparations for dentistry [A61K 6/00](#); preparations for cleaning the teeth or mouth [A61K 8/00](#), [A61Q 11/00](#))

WARNING

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

A61C 5/09 A61C5/09	covered by	A61C 5/08
A61C 5/11 A61C5/11	covered by	A61C 5/08
A61C 7/24	covered by	A61C 7/20
A61C 7/26	covered by	A61C 7/20
A61C 7/32	covered by	A61C 7/28
A61C 8/02	covered by	A61C 8/0004
A61C 11/04	covered by	A61C 11/00
A61C 13/003	covered by	A61C 13/26
A61C 13/007	covered by	A61C 13/01
A61C 13/03	covered by	A61C 13/01
A61C 13/07	covered by	A61C 13/0025
A61C 13/093	covered by	A61C 13/1006
A61C 13/103	covered by	A61C 13/1009
A61C 13/105	covered by	A61C 13/1009
A61C 13/107	covered by	A61C 13/0001
A61C 13/113	covered by	A61C 13/0001
A61C 13/15	covered by	A61C 19/003
A61C 13/23	covered by	A61C 13/0025
A61C 13/263	covered by	A61C 13/225
A61C 13/271	covered by	A61C 13/26
A61C 13/32	covered by	A61C 13/225
A61C 13/36	covered by	A61C 13/1016

A61C 13/38	covered by	A61C 13/12
A61C 17/024	covered by	A61C 17/02
A61C 17/032	covered by	A61C 17/02
A61C 17/06	covered by	A61C 17/00
A61C 17/08	covered by	A61C 17/00
A61C 17/10	covered by	A61C 17/00
A61C 17/12	covered by	A61C 17/00
A61C 17/18	covered by	A61C 17/16

Project: N/A (A61F)

- U A61F 2/00 **Filters implantable into blood vessels; Prostheses, i.e. artificial substitutes or replacements for parts of the body; Appliances for connecting them with the body; Devices providing patency to, or preventing collapsing of, tubular structures of the body, e.g. stents (as cosmetic articles, see the relevant subclasses, e.g. wigs, hair pieces, [A41G 3/00](#), [A41G 5/00](#), artificial nails [A45D 31/00](#); dental prostheses [A61C 13/00](#); materials for prostheses [A61L 27/00](#); artificial hearts [A61M 1/10](#); artificial kidneys [A61M 1/14](#))**
- U A61F 2/0077
 - {Special surfaces of prostheses, e.g. for improving ingrowth ([A61F 2/30767](#) takes precedence)}
- A61F 2002/009
 - • {for hindering or preventing ~~attachement~~attachment of biological tissue (of bone tissue onto implantable joints [A61F 2002/30932](#))}
- U A61F 7/00 **Heating or cooling appliances for medical or therapeutic treatment of the human body (heating or cooling means in connection with bedsteads or mattresses [A47C 21/00](#); {massage, therapeutic baths [A61H](#)}; hyperthermia using electric or magnetic fields or ultrasound [A61N](#); electric heating elements [H05B](#))**
- U A61F 7/02
 - Compresses or poultices for effecting heating or cooling
- U A61F 2007/0244
 - • {with layers}
- A61F 2007/0249
 - • • {with a layer having low heat transfer ~~capabiity~~capability}

Project: N/A (A61J)

- U A61J 1/00 **Containers specially adapted for medical or pharmaceutical purposes (capsules or the like for oral use [A61J 3/07](#); specially adapted for surgical or diagnostic appliances or instruments [A61B 50/00](#); {antithrombogenic treatment of articles for conditioning blood [A61L 33/00](#); devices for introducing media into or onto the body [A61M](#)}; containers for radioactive substances [G21F 5/00](#))**
 - U A61J 1/05
 - for collecting, storing or administering blood, plasma or medical fluids {(multiple bags systems for separating or storing blood components [A61M 1/0209](#)); Infusion or perfusion containers}
 - U A61J 1/14
 - • Details {, e.g. provisions for hanging or shape retaining means}; Accessories therefor {, e.g. inlet or outlet ports, filters or caps}([A61J 7/00](#) takes precedence; {plugs or stoppers [B65D 51/00](#)}; openers [B65D](#), [B67B 7/00](#))
- WARNING
Group [A61J 1/14](#) is impacted by reclassification into group [A61J 1/1468](#). Groups [A61J 1/14](#) and [A61J 1/1468](#) should be considered in order to perform a complete search.
- A61J 1/18
 - • • Arrangements for indicating condition of container contents, e.g. ~~strile~~sterile condition

Project: N/A (A61K)

U	A61K 47/00	Medicinal preparations characterised by the non-active ingredients used, e.g. carriers, inert additives
U	A61K 47/48	<ul style="list-style-type: none"> the non-active ingredient being chemically bound to the active ingredient, e.g. polymer drug conjugates
U	A61K 47/48007	<ul style="list-style-type: none"> {the pharmacologically- or therapeutically-active agent being covalently bound or complexed to a modifying agent} <p><u>NOTE</u></p> <p>The modifying agent being a macromolecular compound A61K 47/48169, a peptide, protein or polyamino acid A61K 47/48238, an antibody or immunoglobulin A61K 47/48369</p>
U	A61K 47/48023	<ul style="list-style-type: none"> {the modifying agent being an organic compound (A61K 47/48161 takes precedence)}
	A61K 47/48076	<ul style="list-style-type: none"> {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} <p><u>NOTE</u></p> <p>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 subgroupes 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 subgroupes subgroups, and not 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</p>
	A61K 47/4813	<ul style="list-style-type: none"> {pretargeting systems involving an organic compound, not being a peptide, protein or antibody, for targeting specific cells} <p><u>NOTE</u></p> <p>The concept of "pre-targeting" covers the administration of the modifying agent (which being an agent able to target specific cells in the body), and of the pharmacologically or therapeutically active agent (drug D) in several steps, their "binding" occurring at the <i>in vivo</i> targeted site. It involves administration in at least two steps, for example: (i) a conjugate T-A corresponding to a targeting agent able to target specific cells or receptors in the body (T) linked to a compound A, and (ii) a conjugate D-M corresponding to the drug linked to a modifying agent M able to target the compound A. The sequence involves e.g. the administration of T-A and then D-M. Between step (i) and step (ii), a further compound able to bind to A and M may also be administered, e.g. during a clearing step. Classification being made according to the nature of T in the subgroupes subgroups of A61K 47/4813, A61K 47/48346 and A61K 47/48723. In A61K 47/4813 and its subgroupes subgroups, T being an organic compound, not being a peptide, protein or antibody. Classification being also made according to the nature of organic compound T in the appropriate A61K 47/48023 subgroup. If T being</p>

a peptide, protein or antibody, classification being made in the corresponding [A61K 47/48346](#) or [A61K 47/48723](#) pretargeting class

- A61K 47/48169 • • {the modifying agent being an organic macromolecular compound, i.e. an oligomeric, polymeric, dendrimeric molecule}

NOTE

a peptide, protein, polyamino acid being classified in [A61K 47/48238](#) and [subgroupesubgroups](#); an antibody in [A61K 47/48369](#) and [subgroupesubgroups](#). In case of block copolymers, the different (large) blocks are classified in the appropriate [A61K 47/48169](#) or [A61K 47/48238](#) subgroups

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

NOTE

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

- A61K 47/48346 • • • {pretargeting systems involving a peptide or protein (not an antibody [A61K 47/48723](#)) for targeting specific cells}

NOTE

The concept of "pre-targeting" covers the administration of the modifying agent (which being an agent able to target specific cells in the body), and of the pharmacologically or therapeutically active agent (drug D) in several steps, their "binding" occurring at the *in vivo* targeted site. It involves administration in at least two steps, for example: (i) a conjugate T-A corresponding to a targeting agent T able to target specific cells or receptors in the body (T) linked to a compound A, and (ii) a conjugate D-M corresponding to the drug D linked to a modifying agent M, able to target the compound A. The sequence involves e.g. the administration of T-A and then D-M. Between step (i) and step (ii), a further compound able to bind to both A and M may also be administered (e.g. during a clearing step). Classification being made according to the nature of T in the [subgroupesubgroups](#) of [A61K 47/4813](#), [A61K 47/48346](#) and [A61K 47/48723](#). In [A61K 47/48346](#) and its [subgroupesubgroups](#), T being a peptide or protein, not being a antibody. If M being biotin and A being a (strept)avidin or a derivative thereof, then [A61K 47/48353](#) being used as classification symbol

- U A61K 47/48369 • • {the modifying part being an antibody, an immunoglobulin, or a fragment thereof, e.g. a Fc-fragment}

- U A61K 47/48376 • • • {drug-antibody or immunoglobulin conjugates defined by the pharmacologically or therapeutically active agent}

NOTE

The modifying part being an antibody or immunoglobulin bearing antigen-binding sites

- A61K 47/48384 • • • {drug conjugated to an antibody or immunoglobulin, e.g. cisplatin-antibody conjugates}

NOTE

The modifying part being an antibody or immunoglobulin bearing at least one antigen-binding site. In [A61K 47/48384](#) and its [subgroupes](#)[subgroups](#), classification being made according to the nature of the drug, i.e. the pharmacologically or therapeutically active agent in the antibody conjugate. If the nature of the antibody in a specific conjugate being known, it being indicated with the corresponding [A61K 47/48507](#) subgroup, in addition to the subgroup [A61K 47/48384](#) characterizing the drug. If the conjugate comprises also a polymer or a polyamino acid, then the class [A61K 47/48692](#) or [A61K 47/487](#) being also given

- A61K 47/48723 • • • {pretargeting systems involving an antibody for targeting specific cells}

NOTE

The concept of "pre-targeting" covers the administration of the modifying agent (which being an agent able to target specific cells in the body), and of the pharmacologically or therapeutically active agent (drug D) in several steps, their "binding" occurring at the *in vivo* targeted site. It involves administration in at least two steps, for example: (i) a conjugate T-A corresponding to a targeting agent able to target specific cells or receptors in the body (T) linked to a compound A, and (ii) a conjugate D-M corresponding to the drug linked to a modifying agent M, able to target the compound A. The sequence involves e.g. the administration of T-A and then D-M. Between step (i) and step (ii), a further compound able to bind to A and M may also be administered (e.g. during a clearing step). Classification being made according to the nature of T in the [subgroupes](#)[subgroups](#) of [A61K 47/4813](#), [A61K 47/48346](#) and [A61K 47/48723](#). In [A61K 47/48723](#) and its [subgroupes](#)[subgroups](#), T being an antibody. Classification being also made according to the nature of the antibody in the appropriate [A61K 47/48515](#) subgroup. If M and A form a pair of biotin and (strept)avidin (or derivatives of biotin and (strept)avidin), then [A61K 47/48753](#) being used as classification symbol

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

NOTE

The conjugates in the [A61K 47/48769](#) [subgroupes](#)[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

A61K 47/48776

- • {forms of ingredients not provided for by groups [A61K 47/48784](#) - [A61K 47/48992](#), e.g. cells, cell fragments, viruses, ghosts, red blood cells, viral vectors having the pharmacologically or therapeutically active agent complexed or covalently linked to, or being themselves modified by complexation or covalent linkage by a modifying agent}

NOTE

Simple encapsulation in cells being ~~isclassified~~ *is classified* in [A61K 9/5068](#); simple encapsulation in a virus capsid is classified in [A61K 9/5184](#)

Project: N/A (A61L)**U A61L 26/00**

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

NOTES

1. When classifying in group [A61L 26/00](#), classification is also made in [A61L 33/00](#) if the materials used are antithrombogenic.
2. In groups [A61L 26/00](#) - [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 26/0057

- {Ingredients of ~~undetermined~~ *undetermined* constitution or reaction products thereof}

U A61L 28/00

Materials for colostomy devices (adhesives for colostomy devices [A61L 24/00](#))

NOTE

When classifying in group [A61L 28/00](#), classification is also made in [A61L 33/00](#) if the materials used are antithrombogenic.

A61L 28/003

- {Ingredients of ~~undetermined~~ *undetermined* constitution or reaction products thereof}

U A61L 29/00

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

NOTES

1. In groups [A61L 29/02](#) - {[A61L 29/126](#)}, in the absence of an indication to the contrary, classification is made in the last appropriate place
2. When classifying in groups [A61L 29/02](#) - {[A61L 29/126](#)}, classification is also made in groups [A61L 29/14](#) - [A61L 29/18](#) if the use of materials characterised by their function or physical properties is of interest
3. When classifying in group [A61L 29/00](#), classification is also made in [A61L 33/00](#) if the materials used are antithrombogenic
4. In group [A61L 29/00](#), the use of specific polymers is indicated using the relevant classification symbols of subclass [C08L](#) in the combination set, e.g. a catheter based on polyvinylchloride [A61L 29/041](#), [C08L 27/06](#)

A61L 29/12

- Composite materials, i.e. ~~containig~~ *containing* one material dispersed in a matrix of the same or different material

U 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 42/00](#), of surgical drapes [A61B 46/00](#), of occluding devices [A61B 17/12022](#)}}

NOTES

1. In groups [A61L 31/02](#) - {[A61L 31/129](#)}, in the absence of an indication to the contrary, classification is made in the last appropriate place
2. When classifying in groups [A61L 31/02](#) - {[A61L 31/129](#)}, classification is also made in groups [A61L 31/14](#) - [A61L 31/18](#) if the use of materials characterised by their function or physical properties is of interest
3. When classifying in group [A61L 31/00](#), classification is also made in [A61L 33/00](#) if the materials used are antithrombogenic
4. 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 [A61L 31/048](#), [C08L 27/06](#)

U A61L 31/12

- Composite materials, i.e. containing one material dispersed in a matrix of the same or different material

U A61L 31/121

- • {having an inorganic matrix}

A61L 31/124

- • • {of other specific inorganic materials not ~~covered~~[covered](#) by [A61L 31/122](#) or [A61L 31/123](#)}

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

1. In groups [A61L 33/0076](#) - [A61L 33/0094](#) and [A61L 33/02](#) - [A61L 33/122](#), in the absence of an indication to the contrary, classification is made in the last appropriate place
2. When classifying in groups [A61L 33/02](#) - [A61L 33/122](#), classification is also made in group [A61L 33/0005](#) if of interest
3. In group [A61L 33/00](#), the use of specific polymers is indicated using the relevant classification symbols of subclass [C08L](#) ~~int~~[in](#) the second position of the combination set, e.g. antithrombogenic treatment with the help of polyvinylchloride [A61L 33/064](#), [C08L 27/06](#)

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

DEVICES FOR INTRODUCING MEDIA INTO, OR ONTO, THE BODY (introducing media into or onto the bodies of animals [A61D 7/00](#); means for inserting tampons [A61F 13/26](#); devices for administering food or medicines orally [A61J](#); containers for collecting, storing or administering blood or medical fluids [A61J 1/05](#)); DEVICES FOR TRANSDUCING BODY MEDIA OR FOR TAKING MEDIA FROM THE BODY (surgery [A61B](#); chemical aspects of surgical articles [A61L](#)); DEVICES FOR PRODUCING OR ENDING SLEEP OR STUPOR

NOTES

1. This subclass ~~covers~~ suction, pumping or atomising devices for medical use (e.g. cups, breast relievers, irrigators, sprays, powder insufflators, atomisers, inhalers), apparatus for general or local anaesthetics, devices or methods for

causing a change in the state of consciousness, catheters, dilators, apparatus for introducing medicines into the body other than orally

2. Void

3. When classifying in this group, classification is also made in group [B01D 15/08](#) insofar as subject matter of general interest relating to chromatography is concerned

WARNING

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

A61M 1/18	covered by	B01D 63/02 , B01D 63/04
A61M 1/20	covered by	B01D 63/06
A61M 1/22	covered by	B01D 63/08
A61M 1/24	covered by	B01D 63/10
A61M 3/04	covered by	A61M 3/02
A61M 5/175	covered by	A61M 5/168
A61M 5/303	covered by	A61M 5/30
A61M 5/307	covered by	A61M 5/30
A61M 23/00 A61M23/00	covered by	A61M 25/01 , A61M 29/00
A61M 25/08	covered by	A61M 25/0105
A61M 25/082	covered by	A61M 25/0116
A61M 25/085	covered by	A61M 25/0122
A61M 25/088	covered by	A61M 25/01
A61M 25/092	covered by	A61M 25/0133
A61M 25/095	covered by	A61M 25/01 , A61B 5/00 , A61N 1/056
A61M 25/098	covered by	A61M 25/0108
A61M 25/12	covered by	A61M 25/10 , A61M 29/02
A61M 25/14	covered by	A61M 25/0021
A61M 25/16	covered by	A61M 25/0009
A61M 25/18	covered by	A61M 25/0014
A61M 29/04	covered by	A61M 29/02
A61M 36/00	covered by	A61M 37/0069 , A61N 5/10
A61M 36/02	covered by	A61M 37/0069 , A61N 5/10
A61M 36/04	covered by	A61M 37/0069 , A61N 5/10 , A61M 15/02
A61M 36/06	covered by	A61M 37/0069 , A61N 5/10 ; A61M 15/02
A61M 36/08	covered by	A61M 5/1785
A61M 36/10	covered by	A61M 37/0069 , A61N 5/10
A61M 36/12	covered by	A61M 37/0069 , A61N 5/10
A61M 36/14	covered by	A61M 37/0069 , A61N 5/10

U A61M 15/00

Inhalators {(drug delivery in endotracheal tubes [A61M 16/04](#))}

WARNING

Groups [A61M 15/0001](#) - [A61M 15/0026](#), [A61M 15/003](#) - [A61M 15/0043](#), [A61M 15/0046](#) - [A61M 15/0063](#), [A61M 15/0066](#) - [A61M 15/0083](#), [A61M 15/0088](#), [A61M 15/0093](#) - [A61M 15/0098](#), [A61M 15/025](#), [A61M 15/085](#) are incomplete pending reclassification of documents from group [A61M 15/00](#) or respective subgroup.

Until reclassification is complete, groups [A61M 15/00](#) or respective subgroup and [A61M 15/0001](#) - [A61M 15/0026](#), [A61M 15/003](#) - [A61M 15/0043](#), [A61M 15/0046](#) -

[A61M 15/0063](#), [A61M 15/0066](#) - [A61M 15/0083](#), [A61M 15/0088](#), [A61M 15/0093](#) - [A61M 15/0098](#), [A61M 15/025](#), [A61M 15/085](#) should be considered in order to perform a complete search.

- U A61M 15/0091 · {mechanically breath-triggered}
- A61M 15/0095 · · {Preventing manual activation in ~~absence of~~ *absence of* inhalation}

Project: N/A (A62B)

- U A62B 9/00 **Component parts for respiratory or breathing apparatus ([A62B 19/00](#), [A62B 21/00](#), [A62B 23/00](#) take precedence)**
- U A62B 9/02 · Valves {(non-return valves mounted in breathing masks or helmets [A62B 18/10](#))}
- U A62B 9/022 · · {Breathing demand regulators (SCUBA diving regulators [B63C 11/22](#))}
- A62B 9/027 · · · {pilot operated, i.e. controlled by valve means ~~sensitive~~ *sensitive* to a reduced downstream pressure}

Project: N/A (A63B)

- U A63B 37/00 **Solid balls; {Rigid hollow balls}; Marbles (heavy throwing balls [A63B 65/06](#))**
- U A63B 37/0001 · {Balls with finger holes, e.g. for bowling}
- A63B 37/0002 · · {Arrangements for adjusting, improving or measuring the grip, i.e. location, size, orientation or the like of finger holes}

Project: RP0405 (B01D)

- M B01D **SEPARATION (separating solids from solids by wet methods [B03B](#), [B03D](#); by pneumatic jigs or tables [B03B](#); by other dry methods [B07](#); magnetic or electrostatic separation of solid materials from solid materials or fluids, separation by high-voltage electric fields [B03C](#); centrifuges, vortex apparatus [B04](#); presses *per se* for squeezing-out liquid from liquid-containing material [B30B 9/02](#); treatment of water [C02F](#), e.g. softening by ion-exchange [C02F 1/42](#); {arrangements of air intake cleaners in gas turbine plants [F02C 7/05](#)}; arrangements or mounting of filters in air-conditioning, air-humidification or ventilation [F24F 13/28](#))**

NOTES

1. 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).
2. 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.

3. For apparatus used in drying or evaporation, [F26](#) takes precedence over [B01D](#).

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

WARNINGS

1. 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 - B01J 49/02 B01J 49/90
B01D 17/022	covered by	B01D 17/0202
B01D 17/025	covered by	B01D 17/0208
B01D 17/028	covered by	B01D 17/0211
B01D 17/032	covered by	B01D 17/0214
B01D 17/035	covered by	B01D 17/0205
B01D 17/038	covered by	B01D 17/0217
B01D 17/05	covered by	B01D 17/047
B01D 17/09	covered by	B01D 17/005
B01D 17/12	covered by	B01D 17/00
B01D 25/133	covered by	B01D 25/285
B01D 25/168	covered by	B01D 25/285
B01D 25/21	covered by	B01D 25/164
B01D 29/075	covered by	B01D 29/62 , B01D 29/76
B01D 29/37	covered by	B01D 29/336 , B01D 29/356
B01D 33/052	covered by	B01D 33/64
B01D 35/01	covered by	B01D 36/001
B01D 61/26	covered by	A61M 1/1656
B01D 61/34	covered by	A61M 1/16

2. 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](#).

3. 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](#).

4. 7. The groups [B01D 29/01](#) - [B01D 29/43](#) and [B01D 29/50](#) - [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.

5. 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](#).

6. 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](#).

7. 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](#).

8. 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.

Project: N/A (B01D)

- | | | |
|---|-------------|--|
| U | B01D 15/00 | Separating processes involving the treatment of liquids with solid sorbents (using liquid sorbents B01D 11/00; ion exchange processes or materials, sorbent materials in general B01J, e.g. sorbents for chromatography B01J 20/281; for investigating or analysing materials G01N 30/00); Apparatus therefor |
| U | B01D 15/08 | <ul style="list-style-type: none"> • Selective adsorption, e.g. chromatography <p><u>NOTE</u></p> <p>In order that group B01D 15/08 may provide a basis for a complete search with respect to chromatography in general, all subject matter of general interest is classified in this group even if it is classified primarily in the application-oriented groups, for example dairy products A23C 9/148, treatment of blood, e.g. A61M 1/36, optically active organic compounds C07B 57/00 or peptides C07K 1/16</p> |
| | B01D 15/10 | <ul style="list-style-type: none"> • • characterisedcharacterised by constructional or operational features |
| U | B01D 23/00 | {Gravity filters (with moving filtering elements B01D 33/0035)} |
| | B01D 23/005 | <ul style="list-style-type: none"> • {making filtering elements, not provided for elsewhereelsewhere (see also B01D 25/001, B01D 27/005, B01D 29/0093)} |
| U | B01D 29/00 | Other filters with filtering elements stationary during filtration, e.g. pressure or suction filters, or filtering elements therefor {(B01D 24/00, B01D 25/00 and B01D 27/00 take precedence)} |
| | | <p><u>WARNING</u></p> <p>See WARNING after subclass title, particularly items (7), (8), (9), (10) ,(12) and (14)</p> |
| U | B01D 29/62 | <ul style="list-style-type: none"> • Regenerating the filter material in the filter (devices for taking out of action one or more units of multi-unit filters, e.g. for regeneration, B01D 35/12) |
| U | B01D 29/70 | <ul style="list-style-type: none"> • • by forces created by movement of the filter element |
| | B01D 29/705 | <ul style="list-style-type: none"> • • • {by compression of compressible filter medium, e.g. foam} |

- 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](#) - [B01D 53/32](#)

- U B01D 53/02** • by adsorption, e.g. preparative gas chromatography {(solid sorbent compositions [B01J 20/00](#), preparation of inorganic compounds or elements [C01](#))}

NOTE

In group [B01D 53/02](#) and subgroups it is desirable to add indexing codes relating to adsorbents, components to be removed, main components in the product gas stream or type of gas or vapour treatment chosen from groups [B01D 2253/00](#), [B01D 2256/00](#), [B01D 2257/00](#) or [B01D 2259/00](#)

- U B01D 53/04** • • with stationary adsorbents {([B01D 53/025](#) takes precedence)}
- B01D 53/0454** • • {Controlling adsorption (controlling temperature swing adsorption [B01D 53/0462](#), controlling pressure swing adsorption [B01D 53/047](#))}

NOTE

In groups [B01D 53/0462](#) and [B01D 53/047](#) - [B01D 53/0476](#) it is desirable to add indexing codes ~~chosen~~*chosen* from [B01D 2259/40007](#) - [B01D 2259/40081](#) relating to controlling and processing aspects of pressure or temperature swing adsorption

B01D 63/00 **Apparatus in general for separation processes using semi-permeable membranes**

NOTE

In groups [B01D 63/00](#) - [B01D 63/16](#) it is desirable to add the indexing codes relating to membrane modules and apparatus chosen from groups [B01D 2313/00](#) - [B01D 2313/90](#),
to details relating to the membrane module operation indexing codes chosen from [B01D 2315/00](#) - [B01D 2315/16](#),
to details relating to the module arrangement ~~wihin~~*within* a plant or an apparatus indexing codes chosen from [B01D 2317/00](#) - [B01D 2317/08](#) and
to details relating to the membrane assembly within one housing indexing codes are chosen from [B01D 2319/00](#) - [B01D 2319/06](#)

U B01D 2259/00 **Type of treatment**

- U B01D 2259/45** • Gas separation or purification devices adapted for specific applications
- B01D 2259/4591** • • Construction elements containing cleaning material, ~~e.g. catalysts~~*e.g. catalysts*

U B01D 2265/00 **Casings, housings or mounting for filters specially adapted for separating dispersed particles from gases or vapours**

- B01D 2265/02** • Non-~~permament~~*-permanent* measures for connecting different parts of the filter

U B01D 2317/00 **Membrane module arrangements within a plant or an apparatus (membrane assemblies within one housing [B01D 2319/00](#))**

B01D 2317/08

- Use of membrane modules of ~~differend~~*different* kinds

Project: N/A (B01F)**U B01F 1/00**

Dissolving ({without involving chemical reactions; [B01F 3/04099](#) takes precedence;}) **separating by dissolving** [B01D](#); **dissolving to effect cooling** [F25D 5/00](#))

B01F 1/0038

- {Dissolving systems, ~~i.e.flow~~*i.e. flow* charts or diagrams; Arrangements, e.g. comprising controlling means}

U B01F 3/00

Mixing, e.g. dispersing, emulsifying, according to the phases to be mixed [{\(C08J 3/02 takes precedence\)}](#)

U B01F 3/20

- Pretreatment of the materials to be mixed [{\(B28C 5/404, B29B 7/905 take precedence\)}](#)

B01F 3/2078

- {Heating components, e.g. melting}

U B01F 3/22

- Aftertreatment of the mixture

B01F 3/2246

- {Evaporating a carrier, e.g. liquid carbon dioxide, e.g. used to dissolve, disperse, emulsify, other components which are difficult to be mixed; Evaporating liquid components}

U B01F 13/00

Other mixers; Mixing plant, including combinations of {mixers, e.g. of} dissimilar mixers

U B01F 13/0001

- {Mixers using electrical energy, other than for driving a motor [\(B01F 3/0407, B01F 3/04978, B01F 3/0815, B01F 3/1235 take precedence\)}](#)

B01F 13/0008

- {the energy being in the form of a laser to modify the characteristics or conditions of the products, e.g. for heating}

U B01F 13/0016

- {Movable or transportable mixing devices or plants}

U B01F 13/0018

- {Movable mixing devices, i.e. apt to be shifted or displaced from one place to another, e.g. by human force}

U B01F 13/002

- • {portable during use, e.g. hand-held [\(B05C 17/00553 takes precedence, whisks comprising mixing wires A47J 43/1087\)}](#)

B01F 13/0022

- • • {Small portable bottles, flasks, vials, e.g. with means for mixing ingredients or for homogenizing their content, e.g. by hand shaking}

U B01F 13/0035

- {vehicle mounted (mixing devices for cement mounted on vehicles with provisions for mixing during transport [B28C 5/42](#))}

B01F 13/0037

- • {the vehicle being self-propelled, e.g. truck mounted, provided with a motor, driven by tracks [\(B01F 13/0038 - B01F 13/0047 take precedence\)}](#)

U B01F 13/08

- Magnetic mixers; {Mixers having magnetically driven stirrers}

B01F 13/0818

- {using ~~independant~~*independent* floating stirring elements}

U B01F 13/0827

- {using supported or suspended stirring elements}

B01F 13/0881

- • {using a wire for supporting or suspending the stirring element, e.g. stirrer sliding on a wire}

U B01F 13/10

- Mixing plant, including combinations of {mixers, e.g. of} dissimilar mixers [{\(B01F 13/0294 takes precedence\)}](#)

U B01F 13/1013

- • {Combinations of similar mixers, e.g. with rotary stirring devices in two or more receptacles [\(B01F 13/1002 takes precedence\)}](#)

B01F 13/1016

- • {in two or more consecutive, i.e. ~~succesive~~*successive*, mixing receptacles or being consecutively arranged}

U B01F 2215/00

Auxiliary or complementary information in relation with mixing

U B01F 2215/0001

- Field of application of the mixing device

B01F 2215/008

- • Mixing water with other ingredients, e.g. air, detergents, disinfectants, in water-taps (domestic plumbing installations [E03C](#))

Project: RP0405 (B01J)**M B01J**

CHEMICAL OR PHYSICAL PROCESSES, e.g. CATALYSIS, COLLOID CHEMISTRY; THEIR RELEVANT APPARATUS (processes or apparatus for specific applications, see the relevant places for these processes or apparatus, e.g. [F26B 3/08](#))

NOTES

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

- "solid particles" includes such particles whether catalysts, reactants or inert in solid, semi-solid or pasty state;
- "fluidised particles" means finely divided solid particles lifted and agitated by a stream of fluid;
- "fluidised bed-technique" means fluid-solid contacting technique in which finely divided particles are lifted and agitated by a rising stream of fluid, said stream having such a speed as to form a lower dense phase (the "bed") and an upper dilute fluidised phase of "fluidised particles";
- "processes conducted in the presence of solid particles" does not include processes wherein the only solid particles present are formed during the reaction.

2. In this subclass, tradenames that are often found in scientific and patent literature have been used in order to define precisely the scope of the groups

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:

B01J 37/025	covered by	B01J 37/02
B01D 15/04	covered by	B01J 39/00-B01J 49/90

Project: N/A (B01J)**U B01J 19/00**

Chemical, physical, or physico-chemical processes in general (physical treatment of fibres, threads, yarns, fabrics, feathers or fibrous goods made from such materials, see the relevant places for such treatment, e.g. [D06M 10/00](#)); Their relevant apparatus (packings, fillings or grids specially adapted for biological treatment of water, waste water or sewage [C02F 3/10](#); splashing boards or grids specially adapted for trickle coolers [F28F 25/08](#))

U B01J 19/18

- Stationary reactors having moving elements inside ([B01J 19/08](#), [B01J 19/26](#) take precedence)

U B01J 19/1868

- • {resulting in a loop-type movement}

B01J 19/1875

- • • {internally, ~~i.e. the~~ *i.e. the* mixture circulating inside the vessel such that the upwards stream is separated physically from the downwards stream(s)}

U B01J 29/00

Catalysts comprising molecular sieves {(molecular sieves per se [C01B](#))}

NOTES

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

- "zeolites" means:
 - crystalline aluminosilicates with base-exchange and molecular sieve properties, having three dimensional, microporous lattice framework structure of tetrahedral oxide units;
 - compounds isomorphous to those of the former category, wherein the aluminium or silicon atoms in the framework are partly or wholly

replaced by atoms of other elements, e.g. by gallium, germanium, phosphorus or boron.

2. If metals are introduced into the framework of the molecular sieve already in the synthesis stage, [B01J 29/86](#) - [B01J 29/89](#) take precedence.

3. Mixtures of molecular sieves are classified in [B01J 29/005](#) or [B01J 29/80](#) and receive indexing codes chosen from groups [B01J 29/03](#) - [B01J 29/89](#) to identify the individual constituents of these mixtures

- U B01J 29/04 • having base-exchange properties, e.g. crystalline zeolites {([B01J 29/005](#) takes precedence)}
- U B01J 29/06 • • Crystalline aluminosilicate zeolites; Isomorphous compounds thereof
- B01J 29/70 • • • of types characterised by their specific ~~stucture~~*structure* not provided for in groups [B01J 29/08](#) - [B01J 29/65](#)
- B01J 29/7011 • • • • {MAZ-type, ~~e.g.Mazzite~~*e.g. Mazzite*, Omega, ZSM-4 or LZ-202}
- U B01J 29/7049 • • • • {containing rare earth elements, titanium, zirconium, hafnium, zinc, cadmium, mercury, gallium, indium, thallium, tin or lead}
- B01J 29/7061 • • • • • {MAZ-type, ~~e.g.Mazzite~~*e.g. Mazzite*, Omega, ZSM-4 or LZ-202}
- U B01J 29/72 • • • • containing iron group metals, noble metals or copper
- B01J 29/7223 • • • • • {MAZ-type, ~~e.g.Mazzite~~*e.g. Mazzite*, Omega, ZSM-4 or LZ-202}
- U B01J 29/74 • • • • • Noble metals
- B01J 29/7423 • • • • • • {MAZ-type, ~~e.g.Mazzite~~*e.g. Mazzite*, Omega, ZSM-4 or LZ-202}
- U B01J 29/76 • • • • • Iron group metals or copper
- B01J 29/7623 • • • • • • {MAZ-type, ~~e.g.Mazzite~~*e.g. Mazzite*, Omega, ZSM-4 or LZ-202}
- U B01J 29/78 • • • • containing arsenic, antimony, bismuth, vanadium, niobium, tantalum, polonium, chromium, molybdenum, tungsten, manganese, technetium or rhenium
- B01J 29/7823 • • • • • {MAZ-type, ~~e.g.Mazzite~~*e.g. Mazzite*, Omega, ZSM-4 or LZ-202}
- U B01J 31/00 Catalysts comprising hydrides, coordination complexes or organic compounds (catalyst compositions used only in polymerisation reactions [C08](#); {catalytic antibodies [C12N 9/0002](#))**

NOTES

1. Group [B01J 31/003](#) takes precedence over groups [B01J 31/02](#) - [B01J 31/24](#) (catalytic antibodies [C12N 9/0002](#))

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

- "Organic compound" a compound in which carbon is bonded to
 - (1)a second carbon;
 - (2)at least one atom of hydrogen or halogen; or
 - (3)nitrogen by a single or double bond; except cyanic acid (HOCN), cyanogen (NCCN), cyanamide (H₂NCN), 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](#) - [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-CR₃)_n with M= main group metal, n= valency of metal and R= H or hydrocarbyl. (Compounds comprising anionic organonitrogen, organooxygen and organosulfur fragments, excluding carboxylates, with a metal bonded to these heteroatoms [B01J 31/02](#) - [B01J 31/0254](#); unsaturated carbon fragments in combination with transition metals [B01J 31/2282](#).

- "Coordination complexes" includes any donor-acceptor compounds or complex ions comprising organic or inorganic, anionic or neutral Lewis basic ligands, attached to a Lewis acid central metal or metal ion through one or several complexing donor atoms with at least one lone-pair of electrons, e.g. N, O, S, P, to provide at least a Sigma-bond. Typically the maximum number of same or different ligands according to the coordination number, spatial requirements of the ligand and electronic configuration of the metal is bound in a predictable geometry. Complexes of neutral, cationic or anionic hydrocarbon ligands with delocalised charge and/or bonding site, e.g. Pd-olefin complexes or metallocenes, are also included (the following groups take precedence: simple hydrocarbyl metal compounds, e.g. of main group metal(oids) [B01J 31/12](#); oxoacid salts [B01J 31/04](#) - [B01J 31/10](#); other compounds comprising anionic organonitrogen, organooxygen and organosulfur fragments with a metal bonded to these heteroatoms [B01J 31/02](#) - [B01J 31/0254](#)).
 - "Organometallic complexes" includes all coordination complexes comprising a M-C bond, e.g. metal carbonyls (complex cyanides such as $M_4[Fe(CN)_6]$ [B01J 27/26](#)). Included are furthermore complexes which are not strictly organometallic per se, e.g. comprising only N, O, S and/or P coordinated ligands, but are described as involving, or known to involve, organometallic intermediates and/or transition states during use, e.g. Group 8-10 metal complexes for a variety of catalytic reactions or steps thereof, such as oxidative addition, e.g. of ArX, hydrogenation, carbonylation, epoxidation, etc.
 - "Organic complexes" includes all coordination complexes comprising organic ligands (groups [B01J 31/1608](#) - [B01J 31/1895](#) take precedence).
 - "Polymer" includes any macromolecular substance (typically $M > 10000$ g/mol), which comprises repeating units made up of one or several kinds of atoms or groups of atoms, which are identically connected to one another. Oligomers, i.e. more than two identical repeating units connected to one another and typically $500 < M < 10000$ g/mol, are grouped with the respective polymers (polymers per se [C08](#)).
3. In this group, if two or more aspects are of equal importance, these are each classified, e.g. two components in a catalyst system such as:
- support and pendant or otherwise immobilised coordination complex; or
 - coordination complex and essential additive.
- However, if two components, even if separately added, are described as forming, or known to form, a coordination complex, only the latter is classified, e.g. phosphine and Group 8-10 metal such as rhodium. The groups [B01J 31/26](#) - [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](#) - [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
- B01J 31/165
 - {Polymer immobilised coordination complexes, **e.g. organometallic** **e.g. organometallic** complexes}
- U B01J 31/18
 - containing nitrogen, phosphorus, arsenic or antimony {as complexing atoms, e.g. in pyridine ligands, or in resonance therewith, e.g. in isocyanide ligands C=N-R or as complexed central atoms (double metal cyanides [B01J 27/26](#); N-heterocyclic carbenes [B01J 31/2265](#))}
- U B01J 31/1845
 - {the ligands containing phosphorus (phosphines [B01J 31/24](#))}
- B01J 31/1885
 - {Ligands comprising two different formal oxidation states of phosphorus in one at least bidentate ligand, **e.g. phosphite** **e.g. phosphite**/phosphinite}

Project: RP0405 (B01J)

- M B01J 39/00 **Cation exchange; Use of material as cation exchangers; Treatment of material for improving the cation exchange properties (**cation-exchange chromatography processes** **B01D 15/362** **ion-exchange chromatography processes** **B01D 15/36**)**
- U B01J 39/04
 - Processes using organic exchangers
- D B01J 39/043
 - {in the strongly acidic form}
 - <administratively transferred to [B01J 39/05](#)>
- D B01J 39/046
 - {in the weakly acidic form}
 - <administratively transferred to [B01J 39/07](#)>
- N B01J 39/05
 - *in the strongly acidic form*
- N B01J 39/07
 - *in the weakly acidic form*
- U B01J 39/08
 - Use of material as cation exchangers; Treatment of material for improving the cation exchange properties
- D B01J 39/085
 - {Inorganic material}
 - <administratively transferred to [B01J 39/09](#)>
- N B01J 39/09
 - *Inorganic material*
- U B01J 39/16
 - Organic material
- D B01J 39/165
 - {containing also inorganic materials, e.g. inert material coated with an ion-exchange resin}
 - <administratively transferred to [B01J 39/17](#)>
- N B01J 39/17
 - *containing also inorganic materials, e.g. inert material coated with an ion-exchange resin*
- M B01J 39/18
 - Macromolecular compounds {(B01J 39/165 [B01J 39/17](#) takes precedence)}
- D B01J 39/185
 - {obtained otherwise than by reactions only involving unsaturated carbon-to-carbon bonds}
 - <administratively transferred to [B01J 39/19](#)>
- N B01J 39/19
 - *obtained otherwise than by reactions only involving unsaturated carbon-to-carbon bonds*
- M B01J 39/20
 - **Macromolecular compounds** obtained by reactions only involving unsaturated carbon-to-carbon bonds
- M B01J 41/00 **Anion exchange; Use of material as anion exchangers; Treatment of material for improving the anion exchange properties (**anion-exchange chromatography processes** **B01D 15/363** **ion-exchange chromatography processes** **B01D 15/36**)**
- U B01J 41/04
 - Processes using organic exchangers
- D B01J 41/043
 - {in the strongly basic form}
 - <administratively transferred to [B01J 41/05](#)>

- D B01J 41/046
 - {in the weakly basic form}
 - <administratively transferred to [B01J 41/07](#)>
- N B01J 41/05
 - • in the strongly basic form
- N B01J 41/07
 - • in the weakly basic form
- U B01J 41/08
 - Use of material as anion exchangers; Treatment of material for improving the anion exchange properties
- D B01J 41/085
 - • {Organic material (macromolecular compounds B01J 41/12)}
 - <administratively transferred to [B01J 41/09](#)>
- N B01J 41/09
 - • Organic material
- M B01J 41/10
 - • Inorganic material (carbon, coal or tar B01J 41/18)
- U B01J 41/12
 - • Macromolecular compounds
- D B01J 41/125
 - • • {obtained otherwise than by reactions only involving unsaturated carbon-to-carbon bonds}
 - <administratively transferred to [B01J 41/13](#)>
- N B01J 41/13
 - • • obtained otherwise than by reactions only involving unsaturated carbon-to-carbon bonds
- M B01J 41/14
 - • • Macromolecular compounds obtained by reactions only involving unsaturated carbon-to-carbon bonds
- U B01J 47/00**
 - Ion-exchange processes in general; Apparatus therefor (ion-exchange chromatography processes or apparatus [B01D 15/08](#))**
- D B01J 47/001
 - {using batch processes}
 - <administratively transferred to [B01J 47/011](#)>
- D B01J 47/002
 - {using portable ion-exchanging apparatus}
 - <administratively transferred to [B01J 47/012](#)>
- D B01J 47/003
 - {in which the adsorbent properties of the ion-exchanger are involved, e.g. recovery of high molecular compounds (proteins)}
 - <administratively transferred to [B01J 47/014](#)>
- D B01J 47/005
 - {electron-exchangers}
 - <administratively transferred to [B01J 47/015](#)>
- D B01J 47/006
 - {Modification or after-treatment of ion-exchangers}
 - <administratively transferred to [B01J 47/016](#)>
- D B01J 47/007
 - {Granulation, incorporation of ion-exchangers in a matrix, mixing with inert materials}
 - <administratively transferred to [B01J 47/018](#)>
- D B01J 47/008
 - • {mixture in form of tablets}
 - <administratively transferred to [B01J 47/019](#)>
- N B01J 47/011
 - using batch processes
- N B01J 47/012
 - using portable ion-exchange apparatus
- N B01J 47/014
 - in which the adsorbent properties of the ion-exchanger are involved, e.g. recovery of proteins or other high-molecular compounds
- N B01J 47/015
 - Electron-exchangers
- N B01J 47/016
 - Modification or after-treatment of ion-exchangers
- N B01J 47/018
 - Granulation; Incorporation of ion-exchangers in a matrix; Mixing with inert materials
- N B01J 47/019
 - • Mixtures in form of tablets
- U B01J 47/02
 - Column or bed processes
- M B01J 47/022
 - • {characterised by the construction of the column or container}
- M B01J 47/024
 - • • {where the ion-exchangers are in a removable cartridge}

- M B01J 47/026
 - {using ~~more than one column~~ *columns* or ~~more than one bed~~ *beds of different ion exchange materials* in series}
- M B01J 47/028
 - • {with alternately *arranged* cationic and anionic exchangers}
- M B01J 47/06
 - during which the ion-exchange material is subjected to a physical treatment, e.g. heat, electric current, irradiation, ~~or~~ *or* vibration (electrodialysis, ~~or~~ *or* electro-osmosis [B01D 61/42](#))
- U B01J 47/10
 - with moving ion-exchange material; with ion-exchange material in suspension or in fluidised-bed form
- D B01J 47/105
 - {in rotating beds}
 - <administratively transferred to [B01J 47/11](#)>
- N B01J 47/11
 - *in rotating beds*
- M B01J 47/12
 - characterised by the use of ion-exchange material in the form of ~~sheets~~ *ribbons*, ~~ribbons~~ *filaments, fibres* or ~~filaments~~ *sheets*, e.g. membranes (electrodialysis, ~~or~~ *or* electro-osmosis [B01D 61/42](#))
- D B01J 47/123
 - {Use of materials in the form of filaments or fibres}
 - <administratively transferred to [B01J 47/127](#)>
- D B01J 47/126
 - {Precoat filters}
 - <administratively transferred to [B01J 47/133](#)>
- N B01J 47/127
 - *in the form of filaments or fibres*
- N B01J 47/133
 - *Precoat filters*
- M B01J 47/14
 - Controlling or regulating ~~(controlling or regulating in general G05)~~
- D B01J 47/145
 - {for obtaining a solution having a fixed pH}
 - <administratively transferred to [B01J 47/15](#)>
- N B01J 47/15
 - *for obtaining a solution having a fixed pH*
- U B01J 49/00**

Regeneration or reactivation of ion-exchangers; Apparatus therefor (ion-exchange chromatography processes or apparatus [B01D 15/08](#))
- D B01J 49/0004
 - {of fixed beds}
 - <administratively transferred to [B01J 49/05](#)>
- D B01J 49/0008
 - {containing cationic exchangers}
 - <administratively transferred to [B01J 49/06](#)>
- D B01J 49/0013
 - {containing anionic exchangers}
 - <administratively transferred to [B01J 49/07](#)>
- D B01J 49/0017
 - {containing cationic and anionic exchangers in separated beds}
 - <administratively transferred to [B01J 49/08](#)>
- D B01J 49/0021
 - {of mixed beds}
 - <administratively transferred to [B01J 49/09](#)>
- D B01J 49/0026
 - {of moving beds}
 - <administratively transferred to [B01J 49/10](#)>
- D B01J 49/003
 - {containing cationic exchangers}
 - <administratively transferred to [B01J 49/12](#)>
- D B01J 49/0034
 - {containing anionic exchangers}
 - <administratively transferred to [B01J 49/14](#)>
- D B01J 49/0039
 - {containing cationic and anionic exchangers in separated beds}
 - <administratively transferred to [B01J 49/16](#)>
- D B01J 49/0043
 - {of mixed beds}
 - <administratively transferred to [B01J 49/18](#)>
- D B01J 49/0047
 - {of membranes}
 - <administratively transferred to [B01J 49/20](#)>
- D B01J 49/0052
 - {electrical regeneration}
 - <administratively transferred to [B01J 49/30](#)>

- D B01J 49/0056 • {thermal regeneration}
 <administratively transferred to [B01J 49/40](#)>
- D B01J 49/006 • • {of amphoteric ion-exchangers ("Sirotherm process")}
 <administratively transferred to [B01J 49/45](#)>
- D B01J 49/0065 • {characterised by the regeneration reagents}
 <administratively transferred to [B01J 49/50](#)>
- D B01J 49/0069 • • {for cationic exchangers}
 <administratively transferred to [B01J 49/53](#)>
- D B01J 49/0073 • • {for anionic exchangers}
 <administratively transferred to [B01J 49/57](#)>
- D B01J 49/0078 • {Cleaning or rinsing ion-exchange beds}
 <administratively transferred to [B01J 49/60](#)>
- D B01J 49/0082 • {Process involving a plant}
 <administratively transferred to [B01J 49/70](#)>
- D B01J 49/0086 • • {of water softeners}
 <administratively transferred to [B01J 49/75](#)>
- D B01J 49/0091 • {Automatic regeneration}
 <administratively transferred to [B01J 49/80](#)>
- D B01J 49/0095 • • {Controlling or regulating devices therefor}
 <administratively transferred to [B01J 49/85](#)>
- D B01J 49/02 • having devices which prevent back-flow of the ion-exchange mass during
 regenerating
 <administratively transferred to [B01J 49/90](#)>
- N B01J 49/05 • of fixed beds
- N B01J 49/06 • • containing cationic exchangers
- N B01J 49/07 • • containing anionic exchangers
- N B01J 49/08 • • containing cationic and anionic exchangers in separate beds
- N B01J 49/09 • • of mixed beds
- N B01J 49/10 • of moving beds
- N B01J 49/12 • • containing cationic exchangers
- N B01J 49/14 • • containing anionic exchangers
- N B01J 49/16 • • containing cationic and anionic exchangers in separate beds
- N B01J 49/18 • • of mixed beds
- N B01J 49/20 • of membranes
- N B01J 49/30 • Electrical regeneration
- N B01J 49/40 • Thermal regeneration
- N B01J 49/45 • • of amphoteric ion-exchangers
- N B01J 49/50 • characterised by the regeneration reagents
- N B01J 49/53 • • for cationic exchangers
- N B01J 49/57 • • for anionic exchangers
- N B01J 49/60 • Cleaning or rinsing ion-exchange beds
- N B01J 49/70 • for large scale industrial processes or applications
- N B01J 49/75 • of water softeners
- N B01J 49/80 • Automatic regeneration
- N B01J 49/85 • • Controlling or regulating devices therefor
- N B01J 49/90 • having devices which prevent back-flow of the ion-exchange mass during
 regeneration

Project: N/A (B01J)**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 2231/40

- Substitution reactions at carbon centres, e.g. C-C or C-X, i.e. carbon-hetero atom, cross-coupling, C-H activation or ring-opening reactions

U B01J 2231/42

- • Catalytic cross-coupling, i.e. connection of previously not connected C-atoms or C- and X-atoms without rearrangement

U B01J 2231/4205

- • • C-C cross-coupling, e.g. metal catalyzed or Friedel-Crafts type

B01J 2231/4238

- • • Negishi-type, i.e. $RY + R'ZnZ$, in **high****which** R, R' is optionally substituted alkyl, alkenyl, alkynyl, aryl, Y is the leaving group and Z is halide or R'

Project: N/A (B01L)**U B01L 2400/00****Moving or stopping fluids****U B01L 2400/06**

- Valves, specific forms thereof

B01L 2400/0677

- • phase change valves; Meltable, freezing, dissolvable plugs;
Destructable**Destructible** barriers

Project: N/A (B02C)**B02C**

CRUSHING, PULVERISING, OR DISINTEGRATING IN GENERAL; MILLING GRAIN ({household tools and machines for pulverising foodstuffs, e.g. coffee and spice mills [A47J 42/00](#); pharmaceutical mortars [A61J 3/02](#); mechanical processing of refuse and garbage [B03B 9/06](#); dressing mould materials by grinding [B22C 5/04](#)}; obtaining metallic powder by crushing, grinding or milling [B22F 9/04](#); {recovery of plastics by **desintegration****disintegrating** [B29B 17/00](#); crushing raw materials in starch making [C08B 30/02](#); beaters for papermaking [D21D 1/02](#); crushing devices specially for transport in mines [E21F 13/002](#); slag crushing devices [F23J 1/00](#); fuel milling devices in combustion apparatus [F23K 1/00](#); household devices for crushing coal [F24B 15/02](#); ice **desintegrating****disintegrating** devices [F25C 5/02](#)})

Project: N/A (B05B)**U B05B 7/00**

Spraying apparatus for discharge of liquids or other fluent materials from two or more sources, e.g. of liquid and air, of powder and gas ([B05B 3/00](#), [B05B 5/00](#) {[B05B 11/06](#)} take precedence; outlets not specially modified for two media [B05B 1/00](#))

U B05B 7/24

- with means, e.g. a container, for supplying liquid or other fluent material to a discharge device ([B05B 7/14](#), [B05B 7/16](#), [B05B 11/00](#) take precedence)

U B05B 7/2402

- • {Apparatus to be carried on or by a person, e.g. by hand; Apparatus comprising containers fixed to the discharge device ([B05B 7/0012](#) takes precedence)}

U B05B 7/2405

- • • {using an atomising fluid as carrying fluid for feeding, e.g. by suction or pressure, a carried liquid from the container to the nozzle ([B05B 7/2459](#) - [B05B 7/247](#) take precedence)}

U B05B 7/2408

- • • • {characterised by the container or its attachment means to the spray apparatus}

- B05B 7/2413 {~~wih~~**with** means for changing the position or the orientation of the container relative to the spray apparatus}

U B05B 17/00 Apparatus for spraying or atomising liquids or other fluent materials, not covered by the preceding groups (dropping or releasing powdered, liquid or gaseous matter in flight [B64D 1/16](#))

- U B05B 17/04 . operating with special methods
- U B05B 17/06 . . using ultrasonic {or other kinds of} vibrations
- U B05B 17/0607 . . . {generated by electrical means, e.g. piezoelectric transducers}
- U B05B 17/0638 {spray being produced by discharging the liquid or other fluent material through a plate comprising a plurality of orifices}
- B05B 17/0646 {Vibrating plates, i.e. plates being ~~directly~~**directly** subjected to the vibrations, e.g. having a piezoelectric transducer attached thereto}

Project: N/A (B05C)

U B05C 11/00 Component parts, details or accessories not specifically provided for in groups [B05C 1/00](#) - [B05C 9/00](#) (means for manipulating or holding work [B05C 13/00](#); enclosures for apparatus, booths [B05C 15/00](#); spray booths [B05B 15/12](#))

- U B05C 11/10 . Storage, supply or control of liquid or other fluent material; Recovery of excess liquid or other fluent material {([B05C 1/0813](#), [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 ~~smal~~**small** quantities, e.g. drops, of coating material ([B05C 5/0225](#), [B05C 11/1026](#) take precedence)}

Project: N/A (B06B)

U B06B 1/00 Methods or apparatus for generating mechanical vibrations of infrasonic, sonic, or ultrasonic frequency

- U B06B 1/02 . making use of electrical energy ([B06B 1/18](#), [B06B 1/20](#) take precedence)
- U B06B 1/04 . . operating with electromagnetism (dynamo-electric motors with vibrating magnet, armature or coil system [H02K 33/00](#))
- B06B 1/045 . . . {using vibrating magnet, armature or coil ~~sytem~~**system**}

Project: N/A (B07B)

B07B SEPERATING SOLIDS FROM SOLIDS BY SIEVING, SCREENING, OR SIFTING OR BY USING GAS CURRENTS; OTHER SEPARATING BY DRY METHODS APPLICABLE TO BULK MATERIAL, e.g. LOOSE ARTICLES FIT TO BE HANDLED LIKE BULK MATERIAL (combinations of dry separating apparatus with wet separating apparatus [B03B](#); hand sorting, postal sorting, sorting by switching or other devices actuated in ~~responce~~response** to detection or measurement of some feature of articles or samples of material [B07C](#))**

NOTE

In this subclass any sorting or grading of bulk material or loose articles fit to be handled like bulk material results automatically from the construction of the apparatus and properties of the material, e.g. by a trap opening under an object of a certain minimum weight, by an aperture of graduated size. Sorting of

articles is included in so far as the same conditions apply, e.g. sorting of timber by passing it over successively longer openings; the articles may or may not be orientated for the purpose of sorting.

Project: N/A (B07C)

- U B07C 5/00** **Sorting according to a characteristic or feature of the articles of material being sorted, e.g. by control effected by devices which detect or measure such characteristic or feature; Sorting by manually actuated devices, e.g. switches (sorting by hand only [B07C 7/00](#); separating solids from solids by sieving, screening, or sifting or by using gas currents or other separating by dry methods applicable to bulk material [B07B](#))**
- U B07C 5/04** • Sorting according to size {(sorting devices as a component of the automatic supply and removal of workpieces [B23Q 7/12](#))}
- U B07C 5/06** • • measured mechanically {(sorting of cartridges [F42B 35/02](#))}
- B07C 5/065** • • • {with multiple measuring ~~applicances~~[appliances](#) adjusted according to different standards, for example length or thickness, which detect the shape of an object so that if it conforms to the standard set by the measuring appliance, it is removed from the conveyor, e.g. by means of a number of differently calibrated openings}
- U B07C 5/16** • Sorting according to weight (sorting eggs [A01K 43/00](#); weighing apparatus per se [G01G](#))
- U B07C 5/18** • • using a single stationary weighing mechanism
- B07C 5/20** • • • for separating articles of less than a ~~predetermined weight~~[predetermined weight](#) from those of more than that weight
- B07C 7/00** **Sorting by hand only {e.g. of mail}**

Project: N/A (B08B)

- U B08B 3/00** **Cleaning by methods involving the use or presence of liquid or steam ([B08B 9/00](#) takes precedence)**
- U B08B 3/04** • Cleaning involving contact with liquid
- U B08B 3/10** • • with additional treatment of the liquid or of the object being cleaned, e.g. by heat, by electricity, by vibration
- B08B 3/12** • • • by sonic or ultrasonic vibrations (washing or rinsing machines for crockery or tableware using sonic or ultrasonic waves [A47L 15/13](#); of natural teeth, of ~~protheses~~[prostheses](#) using ultrasonic techniques similar to those used for natural teeth [A61C 17/20](#); application of ultrasonic vibrations to chemical, physical, or physico-chemical processes in general [B01J 19/10](#))
- U B08B 9/00** **Cleaning hollow articles by methods or apparatus specially adapted thereto ([B08B 3/12](#), [B08B 6/00](#) take precedence)**
- U B08B 9/08** • Cleaning containers, e.g. tanks
- B08B 9/083** • • {Removing scrap from containers, e.g. removing ~~lables~~[labels](#)}

Project: N/A (B23K)

- U B23K 7/00** **Cutting, scarfing, or desurfacing by applying flames {(thermal deburring [B23D 79/005](#))}**
- U B23K 7/002** • {Machines, apparatus, or equipment for cutting plane workpieces, e.g. plates}
- B23K 7/003** • • {Machines, apparatus, or equipment for cutting long articles, e.g. ~~cast~~ stands, plates, in parts of predetermined length}

Project: RP0406 (B23Q)

B23Q 3/00 Devices holding, supporting, or positioning work or tools, of a kind normally removable from the machine (work-tables or other parts, e.g. faceplates, normally not incorporating means for securing work [B23Q 1/00](#); automatic position control [B23Q 15/00](#) {; food cutting boards [A47J 47/00](#); workpiece support for dies [B21D 37/02](#)}; rotary tool heads for turning-machines [B23B 3/24](#), [B23B 3/26](#); non-driven tool holders [B23B 29/00](#); general features of turrets [B23B 29/24](#) {; drawbars in spindles [B23B 31/261](#); for electrical discharge machining [B23H 11/003](#); for welding [B23K 37/04](#); means for securing grinding wheels [B24B 45/00](#); mountings for abrasive wheels [B24D 5/16](#)}; tools or bench devices for fastening, connecting, disengaging or holding [B25B](#) {; chucks for percussive tools [B25D 17/084](#); work benches for manual work [B25H 1/00](#); devices for securing circular saw blades [B27B 5/32](#); for assembling or manufacturing aircrafts [B64F 5/0009](#)[B64F 5/10](#); for holding semiconductors or wafers [H01L 21/67](#); devices for holding circuit boards [H05K 13/0061](#)})

Project: N/A (B27M)

U B27M 3/00 Manufacture or reconditioning of specific semi-finished or finished articles (features of copying devices [B23Q](#); manufacture of plywood or veneer, shaping plywood or veneer into articles [B27D](#); of central layers for plywood [B27D 1/06](#); nailing or stapling machines in general [B27F 7/00](#); of elements for cooperage or wheel making [B27H](#) {presses therefor [B27D 3/00](#)})

B27M 3/20 • of lasts; of shoes, e.g. sabots; of parts of shoes, e.g. heels

U B27M 3/34 • of cases, trunks, or boxes, of wood or equivalent material which cannot satisfactorily be bent without softening (nailing or stapling in general [B25C](#), [B27F](#); of cardboard, paper, or similarly workable material [B31B](#)){Manufacture of cleats therefor (manufacture of tubes, coops or barrels [B27D 1/00](#), [B27D 1/08](#); by folding grooved panels [B27G 5/00](#))}
 • • Machines or devices for attaching blanks together, e.g. for making wire-bound boxes {(manufacture of wire-bound wooden tubes [B27H 5/02](#))}

B27M 3/36 • • Machines or devices for attaching blanks together, e.g. for making wire-bound boxes {(manufacture of wire-bound wooden tubes [B27H 5/02](#))}

Project: MP0318 (B29C)

M B29C **SHAPING OR JOINING OF PLASTICS; SHAPING OF SUBSTANCES MATERIAL IN A PLASTIC STATE, IN-GENERAL NOT OTHERWISE PROVIDED FOR; AFTER-TREATMENT OF THE SHAPED PRODUCTS, e.g. REPAIRING** (~~{moulding devices for producing toilet or cosmetic sticks A45D 40/16}~~; ~~working in the manner of metal B23; grinding, polishing B24; cutting B26D, B26F~~; making preforms [B29B 11/00](#); making laminated products by combining previously unconnected layers which become one product whose layers will remain together [B32B 37/00](#) - [B32B 41/00](#))

NOTES**1. This subclass covers:**

- shaping or joining of plastics;
- shaping of material in a plastic state when a specific material is not identified;
- shaping of material in a plastic state, not otherwise provided for.

2. This subclass does not cover:

- working of plastics sheet material in a manner analogous to the working of paper, which is covered by class [B31](#);
- shaping of materials provided for elsewhere, e.g. of metal, clay or foodstuffs.

~~1-3.~~ Attention is drawn to Note (3) following the title of class [B29](#).

~~2-4.~~ In this subclass:

- repairing of articles made from plastics or **substances materials** in a plastic state, e.g. of articles shaped or produced by using techniques covered by this subclass or subclass [B29D](#), is classified in group [B29C 73/00](#);
- component parts, details, accessories or auxiliary operations which are applicable to more than one moulding technique **a-reclassified are classified** in groups [B29C 31/00](#) - [B29C 37/00](#);
- component parts, details, accessories or auxiliary operations which are only **applicable or only** of use for one specific shaping technique **a-reclassified are classified** only in the relevant subgroups of groups [B29C 39/00](#) - [B29C 71/00](#).

5. In this subclass, it is desirable to add the indexing codes of subclasses [B29K](#) and [B29L](#).

**B29C 31/00 -
B29C 37/00**

Component parts, details or accessories; Auxiliary operations

NOTE

{Attention is drawn to Note (34) following the subclass title.}

Project: N/A (B29C)

U B29C 43/00

Compression moulding, i.e. applying external pressure to flow the moulding material; Apparatus therefor ({by liberation of internal stresses [B29C 61/006](#) } ; shaping or impregnating by compression composites comprising reinforcements other than fibres of short length { [B29C 70/12](#)}; presses in general [B30B](#))

U B29C 43/32

• Component parts, details or accessories; Auxiliary operations

U B29C 43/36

• • Moulds for making articles of definite length, i.e. discrete articles

U B29C 43/3642

• • • {Bags, bleeder sheets or cauls for isostatic pressing (flexible cores for vulcanizing tyres [B29D 30/0654](#))}

B29C 2043/3655

• • • • {pressure transmitters, e.g. caul plates, pressure pads}

U B29C 45/00

Injection moulding, i.e. forcing the required volume of moulding material through a nozzle into a closed mould; Apparatus therefor (injection blow-moulding [B29C 49/06](#))

U B29C 45/17

• Component parts, details or accessories; Auxiliary operations

U B29C 45/76

• • Measuring, controlling or regulating {(measuring in general [G01](#); controlling or regulating in general [G05](#))}

NOTE

In groups [B29C 45/76](#) - [B29C 45/80](#) it is desirable to add the indexing codes of [B29C 2945/76](#) relating to measuring, controlling or regulating in injection moulding

B29C 45/7693

• • • {using rheological models of the material in the mould, e.g. finite elements method}

Project: N/A (B31B)

B31B

MAKING BOXES, CARTONS, ENVELOPES OR BAGS OF PAPER OR CARDBOARD (incising, scoring, in general [B26D 3/08](#); combined making and filling [B65B](#))

NOTES

1. In this subclass, envelopes or bags are regarded as being essentially flexible containers, the final shape of which is determined by their contents.
2. In this subclass, the following expression is used with the meaning indicated:

- "boxes or cartons" includes bags formed similarly to cartons, trays with upstanding side-walls, barrels, tubes and cups, other than articles formed by winding.

3. In this subclass, it is desirable to add the indexing codes of [B31B 2201/00](#) - [B31B 2247/00](#)

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:

B31B 7/02 B31B7/02	covered by	B31B 1/02
B31B 7/14 B31B7/14	covered by	B31B 1/14
B31B 7/60 B31B7/60	covered by	B31B 1/60
B31B 7/74 B31B7/74	covered by	B31B 1/74
B31B 9/00 B31B9/00	covered by	B31B 3/00
B31B 9/02 B31B9/02	covered by	B31B 3/02
B31B 9/14 B31B9/14	covered by	B31B 3/14
B31B 9/26 B31B9/26	covered by	B31B 3/26
B31B 9/60 B31B9/60	covered by	B31B 3/60
B31B 9/74 B31B9/74	covered by	B31B 3/74
B31B 11/02 B31B11/02	covered by	B31B 1/02
B31B 11/14 B31B11/14	covered by	B31B 1/14
B31B 11/26 B31B11/26	covered by	B31B 1/26
B31B 11/60 B31B11/60	covered by	B31B 1/60
B31B 11/74 B31B11/74	covered by	B31B 1/74
B31B 13/02 B31B13/02	covered by	B31B 1/02
B31B 13/14 B31B13/14	covered by	B31B 1/14
B31B 13/60 B31B13/60	covered by	B31B 1/60
B31B 13/74 B31B13/74	covered by	B31B 1/74
B31B 15/14 B31B15/14	covered by	B31B 1/14
B31B 15/26 B31B15/26	covered by	B31B 1/26
B31B 15/60 B31B15/60	covered by	B31B 1/60
B31B 15/74 B31B15/74	covered by	B31B 1/74
B31B 21/02 B31B21/02	covered by	B31B 19/02
B31B 21/14 B31B21/14	covered by	B31B 19/14
B31B 21/26 B31B21/26	covered by	B31B 19/26
B31B 21/60 B31B21/60	covered by	B31B 19/60
B31B 21/74 B31B21/74	covered by	B31B 19/74
B31B 23/02 B31B23/02	covered by	B31B 19/02 , B31B 23/00
B31B 23/14 B31B23/14	covered by	B31B 19/14 , B31B 23/00
B31B 23/26 B31B23/26	covered by	B31B 19/26 , B31B 23/00
B31B 23/60 B31B23/60	covered by	B31B 19/60 , B31B 23/00
B31B 23/74 B31B23/74	covered by	B31B 19/74 , B31B 23/00
B31B 25/02 B31B25/02	covered by	B31B 19/02 , B31B 25/00
B31B 25/14 B31B25/14	covered by	B31B 19/14 , B31B 25/00
B31B 25/26 B31B25/26	covered by	B31B 19/26 , B31B 25/00
B31B 25/60 B31B25/60	covered by	B31B 19/60 , B31B 25/00
B31B 25/74 B31B25/74	covered by	B31B 19/74 , B31B 25/00
B31B 27/02 B31B27/02	covered by	B31B 19/02 , B31B 27/00
B31B 27/14 B31B27/14	covered by	B31B 19/14 , B31B 27/00
B31B 27/26 B31B27/26	covered by	B31B 19/26 , B31B 27/00
B31B 27/60 B31B27/60	covered by	B31B 19/60 , B31B 27/00
B31B 27/74 B31B27/74	covered by	B31B 19/74 , B31B 27/00

B31B 29/02 B31B29/02	covered by	B31B 19/02 , B31B 29/00
B31B 29/14 B31B29/14	covered by	B31B 19/14 , B31B 29/00
B31B 29/26 B31B29/26	covered by	B31B 19/26 , B31B 29/00
B31B 31/00 B31B31/00	covered by	B31B 29/00
B31B 31/02 B31B31/02	covered by	B31B 19/02 , B31B 29/00
B31B 31/14 B31B31/14	covered by	B31B 19/14 , B31B 29/00
B31B 31/26 B31B31/26	covered by	B31B 19/26 , B31B 29/00
B31B 31/60 B31B31/60	covered by	B31B 29/60
B31B 31/74 B31B31/74	covered by	B31B 29/74
B31B 33/00 B31B33/00	covered by	B31B 29/00
B31B 33/02 B31B33/02	covered by	B31B 19/02 , B31B 29/00
B31B 33/14 B31B33/14	covered by	B31B 19/14 , B31B 29/00
B31B 33/26 B31B33/26	covered by	B31B 19/26 , B31B 29/00
B31B 33/60 B31B33/60	covered by	B31B 29/60
B31B 33/74 B31B33/74	covered by	B31B 29/74
B31B 35/00 B31B35/00	covered by	B31B 29/00
B31B 35/02 B31B35/02	covered by	B31B 19/02 , B31B 29/00
B31B 35/14 B31B35/14	covered by	B31B 19/14 , B31B 29/00
B31B 35/26 B31B35/26	covered by	B31B 19/26 , B31B 29/00
B31B 35/60 B31B35/60	covered by	B31B 29/60
B31B 35/74 B31B35/74	covered by	B31B 29/74
B31B 37/02 B31B37/02	covered by	B31B 19/02 , B31B 37/00
B31B 37/14 B31B37/14	covered by	B31B 19/14 , B31B 37/00
B31B 37/26 B31B37/26	covered by	B31B 19/26 , B31B 37/00
B31B 37/60 B31B37/60	covered by	B31B 19/60 , B31B 37/00
B31B 37/74 B31B37/74	covered by	B31B 19/74 , B31B 37/00
B31B 39/02 B31B39/02	covered by	B31B 19/02 , B31B 39/00
B31B 39/14 B31B39/14	covered by	B31B 19/14 , B31B 39/00
B31B 39/26 B31B39/26	covered by	B31B 19/26 , B31B 39/00
B31B 39/60 B31B39/60	covered by	B31B 19/60 , B31B 39/00
B31B 41/02 B31B41/02	covered by	B31B 19/02 , B31B 41/00
B31B 41/14 B31B41/14	covered by	B31B 19/14 , B31B 41/00
B31B 41/26 B31B41/26	covered by	B31B 19/26 , B31B 41/00
B31B 41/60 B31B41/60	covered by	B31B 19/60 , B31B 41/00
B31B 41/74 B31B41/74	covered by	B31B 19/74 , B31B 41/00

Project: N/A (B32B)

U B32B 37/00

Methods or apparatus for laminating, e.g. by curing or by ultrasonic bonding {(making non-planar products [B32B 1/00](#); making products characterised by particular features of structure or of composition, see the relevant groups for such products, e.g. making layered products containing glass and synthetic resin layers [B32B 17/10807](#); coating of single webs or the like [B05](#))}

U B32B 37/0046

• {characterised by constructional aspects of the apparatus}

B32B 2037/0069

• {the apparatus being originally designed for another function, e.g. printer, photocopier}

Project: N/A (B41M)

- U B41M 5/00 Duplicating or marking methods; Sheet materials for use therein (by using light-sensitive materials [G03](#); electrography, magnetography [G03G](#); {repeatedly usable boards or tablets for writing or drawing [B43L 1/00](#)})
- U B41M 5/26 • Thermography ([B41M 5/20](#), [B41M 5/24](#) take precedence); {Marking by high energetic means, e.g. laser otherwise than by burning, and characterised by the material used ([B23K](#) takes precedence; thermographic or photothermographic systems using noble metal compounds [G03C 1/494](#))}
- U B41M 5/382 • • Contact thermal transfer or sublimation processes (sublistatic printing using a pre-formed image [B41M 5/035](#); ink-, dye- or pigment-receptive coatings [B41M 5/52](#))
- U B41M 5/385 • • • characterised by the transferable dyes or pigments {(infra-red absorbing dyes [B41M 5/465](#))}
- B41M 5/39 • • • Dyes containing one or more carbon-to-nitrogen double bonds, e.g. azomethine e.g. azomethine

Project: RP0406 (B60P)

- U B60P 3/00 Vehicles adapted to transport, to carry or to comprise special loads or objects (ambulances or other vehicles with special provisions for transporting patients or disabled persons, or their personal conveyances [A61G 3/00](#); hearses [A61G 21/00](#); fire-fighting land vehicles [A62C 27/00](#); refuse-collecting vehicles [B65F 3/00](#), [B65F 7/00](#); snow-removing vehicles [E01H](#); armoured or armed vehicles [F41H 7/00](#); self-propelled mine-clearing vehicles [F41H 11/16](#))
- B60P 3/30 • Spraying vehicles (sprinkling-wagons for fertilising liquid [A01C 23/00](#); for destruction of noxious animals, vermin, or unwanted vegetation [A01M](#); {vehicle-mounted spraying installations for de-icing aircraft [B64F 5/0063](#) [B64F 5/23](#);} for spraying asphalt, bitumen, tar, or the like [E01C](#); for cleaning streets [E01H](#))

Project: RP0406 (B60S)

- M B60S 3/00 Vehicle cleaning apparatus not integral with vehicles (cleaning in general [B08B](#); cleaning peculiar to waterborne vessels [B63B 57/00](#), [B63B 59/00](#); ground equipment for cleaning aircraft [B64F 5/00](#) [B64F 5/30](#); {multistage treatment applied to waste water from vehicle wash installations [G02F 9/00](#)})

Project: RP0406 (B60V)

- M B60V AIR-CUSHION VEHICLES (~~devices for short-distance movement of heavy loads by providing a high-pressure fluid cushion, supplied from an independent source, between load and ground~~ [B65G 7/06](#))

NOTE

The term "air-cushion vehicles" in this subclass includes all vehicles which are wholly or partly supported on land or water by air or other gaseous cushions

Project: N/A (B60W)

- U B60W 2710/00 Output or target parameters relating to a particular sub-units
- U B60W 2710/10 • Change speed gearings
- B60W 2710/1077 • • fluid pressure, e.g. oil e.g. oil pressure

Project: RP0406 (B64B)

- U B64B 1/00 Lighter-than-air aircraft

- M B64B 1/66 • Mooring attachments ~~(mooring masts B64F)~~

Project: RP0406 (B64D)

- M B64D 3/00 Aircraft adaptations to facilitate towing or being towed (B64D 39/00 takes precedence; ~~ground installations for launching or towing aircraft B64F; towing ropes per se D07B~~)
- M B64D 3/02 • for towing targets ~~(towed targets per se F41J)~~
- M B64D 15/00 De-icing or preventing icing on exterior surfaces of aircraft (motor vehicles specially adapted for carrying de-icing equipment B60P; ~~Ground installations for de-icing aircraft B64F 5/0036~~)

Project: RP0406 (B64F)

- M B64F **GROUND OR AIRCRAFT-CARRIER-DECK INSTALLATIONS SPECIALLY ADAPTED FOR USE IN CONNECTION WITH AIRCRAFT; DESIGNING, MANUFACTURING, ASSEMBLING, CLEANING, MAINTAINING OR REPAIRING AIRCRAFT, NOT OTHERWISE PROVIDED FOR; HANDLING, TRANSPORTING, TESTING OR INSPECTING AIRCRAFT COMPONENTS, NOT OTHERWISE PROVIDED FOR**

NOTE

1. In this subclass, the term "installation" embraces equipment, including mobile equipment, peculiar to use in connection with aircraft and not fitted thereto

1. In this subclass, the following terms or expressions are used with the meaning indicated:

- "installations" embraces equipment, including mobile equipment, peculiar to use in connection with aircraft and not fitted thereto;
- "ground installations" embraces waterborne installations.

2. The term "ground installations" in this subclass embraces waterborne installations

- M B64F 1/00 **Ground or aircraft-carrier-deck installations (specially adapted for captive aircraft B64F 3/00; aircraft-carriers B63; fog-dispersal installations E01H; wind tunnels G01M; grounded flight trainers G09B)**
- M B64F 1/005 • {Protective ~~covering~~ coverings for aircraft not in use ~~(tent-like garages E04H)~~}
- M B64F 1/007 • {Helicopter portable landing pads ~~(landing platforms for helicopters E01F 3/00; paving take-off areas for vertically starting aircraft E01C 9/008)~~}
- M B64F 1/04 • Launching or towing gear ~~(railway aspects B61; aircraft towing aircraft B64D 3/00; ammunition launching gear F41F)~~
- U B64F 1/12 • Anchoring
- M B64F 1/14 • • Towers or masts for mooring airships or balloons ~~(mooring attachments of lighter-than-air aircraft B64B 1/66; building aspects E04H 6/00, E04H 12/00)~~
- M B64F 1/18 • Visual or acoustic landing aids ~~{(optical or acoustic signalling in general G08; B64F 1/002 takes precedence)}~~ taxiing aids B64F 1/002}
- M B64F 1/22 • installed for handling aircraft ~~{(B64F 1/002 takes precedence}~~ taxiing aids B64F 1/002)}
- M B64F 1/28 • Liquid-handling installations specially adapted for fuelling stationary aircraft ~~(liquid handling in general B67)~~
- U B64F 1/30 • for embarking or disembarking passengers
- M B64F 1/315 • • Mobile stairs ~~(movable stairways in general E04F 11/04)~~
- M B64F 1/36 • Other airport installations ~~(de-icing installations B64F 5/0054; construction of, or surfacing for, airfields E01C)~~ ground installations for de-icing aircraft B64F 5/20)

M	B64F 1/368	• {Arrangements and/or installations for routing, distributing, or loading baggage}
M	B64F 3/00	Ground installations specially adapted for captive aircraft (railway aspects B61)
M	B64F 5/00	Designing, manufacturing, assembling, cleaning, maintaining, or repairing aircraft, not otherwise provided for; <i>Handling, transporting, testing or inspecting aircraft components, not otherwise provided for</i>
D	B64F 5/0009	• {Assembling or manufacturing aircraft, e.g. jigs therefor} <administratively transferred to B64F 5/10 >
D	B64F 5/0018	• {Cleaning aircraft} <administratively transferred to B64F 5/30 >
D	B64F 5/0027	• {Polishing window units} <administratively transferred to B64F 5/305 >
D	B64F 5/0036	• {handling or transporting aircraft components} <administratively transferred to B64F 5/50 >
D	B64F 5/0045	• {Test or inspection of aircraft components or systems} <administratively transferred to B64F 5/60 >
D	B64F 5/0054	• {De-icing aircraft (aircraft-fitted installations for de-icing or preventing icing on exterior surfaces of aircraft B64D 15/00)} <administratively transferred to B64F 5/20 >
D	B64F 5/0063	• {by liquid application; Spraying installations therefor, e.g. on vehicles (spraying vehicles B60P 3/30; materials for application to surfaces to minimize adherence of ice, mist or water thereto C09K 3/18)} <administratively transferred to B64F 5/23 >
D	B64F 5/0072	• {by radiation, e.g. infrared} <administratively transferred to B64F 5/27 >
D	B64F 5/0081	• {Repairing aircraft} <administratively transferred to B64F 5/40 >
D	B64F 5/009	• {Methods and equipment for repairing leakages in fuel tanks} <administratively transferred to B64F 5/45 >
N	B64F 5/10	• <i>Manufacturing or assembling aircraft, e.g. jigs therefor</i>
N	B64F 5/20	• <i>Ground installations for de-icing aircraft</i>
N	B64F 5/23	• <i>by liquid application; Spraying installations therefor, e.g. fitted on vehicles</i>
N	B64F 5/27	• <i>by irradiation, e.g. of infrared radiation</i>
N	B64F 5/30	• <i>Cleaning aircraft</i>
N	B64F 5/305	• {Polishing window units}
N	B64F 5/40	• <i>Maintaining or repairing aircraft</i>
N	B64F 5/45	• <i>Repairing leakages in fuel tanks</i>
N	B64F 5/50	• <i>Handling or transporting aircraft components</i>
N	B64F 5/60	• <i>Testing or inspecting aircraft components or systems</i>

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](#) - [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

1. In this subclass, the indexing codes of [B65D 2519/00004](#) - [B65D 2519/00995](#) should be added, if applicable
2. 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](#)
3. 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
4. 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
5. 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
7. Tamper-indicating means for containers or closures are classified in the group appropriate to the type of container or closure, e.g. [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](#)

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:

B65D 5/34	covered by	B65D 5/325
B65D 5/35	covered by	B65D 5/32
B65D 5/355	covered by	B65D 5/0005
B65D 5/43	covered by	B65D 5/42
B65D 5/462	covered by	B65D 5/46008 - B65D 5/46032
B65D 5/465	covered by	B65D 5/46008 - B65D 5/46032
B65D 5/468	covered by	B65D 5/4608
B65D 5/472	covered by	B65D 5/46048
B65D 5/475	covered by	B65D 5/46008
B65D 5/478	covered by	B65D 5/46056
B65D 5/4805 - B65D 5/489	covered by	B65D 5/48002
B65D 5/49 - B65D 5/499	covered by	B65D 5/48024
B65D 5/63	covered by	B65D 5/72
B65D 6/00 - B65D 6/40	covered by	B65D 7/00 , B65D 9/00 , B65D 11/00 , B65D 15/00
B65D 8/00 - B65D 8/22	covered by	B65D 7/00 , B65D 9/00 , B65D 11/00 , B65D 15/00
B65D 19/22	covered by	B65D 19/0004 & subgroups
B65D 19/24	covered by	B65D 19/0004 & subgroups
B65D 19/26	covered by	B65D 19/0004 & subgroups
B65D 19/28	covered by	B65D 19/0004 & subgroups
B65D 19/30	covered by	B65D 19/0004 & subgroups
B65D 19/31	covered by	B65D 19/0004 & subgroups
B65D 19/34	covered by	B65D 19/0004 & subgroups
B65D 17/28 - B65D 17/48 , B65D 17/52	covered by	B65D 17/16 - B65D 17/26
B65D 19/32	covered by	B65D 19/0002 , B65D 19/0004
B65D 21/024	covered by	B65D 21/0201
B65D 21/028	covered by	B65D 21/0204
B65D 21/032	covered by	B65D 21/0211

B65D 21/036	covered by	B65D 21/0217
B65D 25/26	covered by	B65D 81/02
B65D 30/00 - B65D 30/28	covered by	B65D 29/00 , B65D 31/00
B65D 33/17	covered by	B65D 33/1633
B65D 33/36	covered by	B65D 75/58
B65D 33/38	covered by	B65D 75/5861
B65D 35/48 - B65D 35/54	covered by	B65D 47/2018
B65D 39/18	covered by	B65D 39/00 +s.gr.
B65D 41/01	covered by	B65D 41/00
B65D 43/03	covered by	B65D 43/00 + B65D 2543/00027
B65D 47/22	covered by	B65D 47/20
B65D 47/34	covered by	B05B 11/00
B65D 50/06	covered by	
B65D 50/08	covered by	B65D 55/02
B65D 50/10	covered by	B65D 55/02
B65D 50/12	covered by	B65D 55/02
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 - 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 , H05K 13/00
B65D 91/00 B65D91/00	covered by	A47G 29/12

U B65D 55/00

Accessories for container closures not otherwise provided for

U B65D 55/02

- Locking devices; Means for discouraging or indicating unauthorised opening or removal of closure (protective covers for bottles [B65D 23/08](#); {[B65D 41/32](#) takes precedence } ; protective cap-like outer covers for bottle or jar closures [B65D 41/28](#); pressure-applying means [B65D 45/00](#))

U B65D 55/06

- • Deformable or tearable wires, strings, or strips (containers specially constructed to be opened by tear-strips, strings or the like [B65D 17/00](#); caps or cap-like closures with tear-strips [B65D 41/32](#)); Use of seals, e.g. destructible locking pins ({[B65D 55/022](#) takes precedence } ; applying labels to bottles [B65C 3/06](#), [B65C 9/00](#); seals per se [G09F 3/00](#))

U B65D 55/08

B65D 55/089

- • • Annular elements encircling container necks
- • • {Annular tamper band connected to the closure, but not coacting with the container for preventing initial downward motion, ~~e.g. on~~ **e.g. on** two-parts child-proof closures ([B65D 41/32](#) takes precedence)}

- U B65D 81/00** Containers, packaging elements, or packages, for contents presenting particular transport or storage problems, or adapted to be used for non-packaging purposes after removal of contents
- U B65D 81/38 • with thermal insulation (vacuum bottles or the like [A47J 41/00](#); {thermal insulation of domestic water storage heaters [F24H 1/182](#)})
- U B65D 81/3825 • • {rigid container being in the form of a box, tray or like container with one or more containers located inside the external container}
- B65D 81/383 • • {the external tray being formed with double walls, ~~i.e.hollow~~*i.e. hollow*}

Project: N/A (B65F)

- U B65F 3/00** Vehicles particularly adapted for collecting refuse (vehicles in general [B60](#); driving vehicle equipment or auxiliaries [B60K](#); discharging contents by tilting entire vehicles [B65G](#); wheeled apparatus for emptying sewers or cesspools [E03F 7/10](#))
- U B65F 3/02 • with means for discharging refuse receptacles thereinto (conveyor construction [B65G](#); Loaders separate from vehicles [B66F](#); fluid power control systems in general [F15B](#))
- U B65F 2003/025 • • {Constructional features relating to actuating means for lifting or tipping containers}
- B65F 2003/0253 • • {Means for synchronising or coupling two or more discharging devices, ~~e.g.for~~*e.g. for* allowing the discharge of one large container or the simultaneous discharge of two or more containers}

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

TRANSPORT OR STORAGE DEVICES, e.g. CONVEYORS FOR LOADING OR TIPPING; SHOP CONVEYOR SYSTEMS; PNEUMATIC TUBE CONVEYORS ({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 - 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:

B65G 33/28 B65G33/28	covered by	B65G 33/265
B65G 47/10	covered by	B65G 1/1373
B65G 47/86	covered by	B65G 47/842 , B65G 47/847
B65G 49/07	covered by	H01L 21/677
B65G 69/32	covered by	B65G 69/28
B65G 69/34	covered by	B65G 69/28

Project: N/A (B65H)**B65H****HANDLING THIN OR FILAMENTARY MATERIAL, e.g. SHEETS, WEBS, CABLES****NOTES**

1. 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 manifold, 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- 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 conveyor
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

2. 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.

3. 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 1/025 , G07D 11/00 and s.gr
B65H 85/00	covered by	G03B 27/62 , G03B 27/6264 , G03B 27/6257

U B65H 67/00

Replacing or removing cores, receptacles, or completed packages at paying-out, winding, or depositing stations

U B65H 67/08

- Automatic end-finding and material-interconnecting arrangements (knot-tying devices [B65H 69/00](#))

B65H 67/081

- {acting after interruption of the winding process, e.g. yarn breakage, yarn cut or package replacement}

U	B65H 2301/00	Handling processes for sheets or webs
U	B65H 2301/40	· Type of handling process
U	B65H 2301/41	· · Winding, unwinding
U	B65H 2301/414	· · · Winding
U	B65H 2301/4143	· · · · Performing winding process
U	B65H 2301/41432	· · · · · special features of winding process
	B65H 2301/414326	· · · · · · winding on core with non-circular cross-sectional profile, e.g. polygonal e.g. polygonal , oval, flat or slightly curved
U	B65H 2301/46	· · Splicing
U	B65H 2301/463	· · · splicing means, i.e. means by which a web end is bound to another web end
U	B65H 2301/4631	· · · · Adhesive tape
	B65H 2301/46314	· · · · · Pieces of adhesive tape, e.g. labels
U	B65H 2405/00	Parts for holding the handled material
U	B65H 2405/40	· Holders, supports for rolls
U	B65H 2405/45	· · Shafts for winding/unwinding
	B65H 2405/454	· · · Means for penetrating into the core material, e.g. for transmitting torque

Project: N/A (B67D)

U	B67D 7/00	Apparatus or devices for transferring liquids from bulk storage containers or reservoirs into vehicles or into portable containers, e.g. for retail sale purposes (general disposition of plant in stations for supplying fuel to vehicles B60S 5/02; for filling or emptying locomotive water tanks, e.g. water columns, B61K 11/00; for refuelling aircraft during flight B64D 39/00; liquid-handling ground installations specially adapted for fuelling stationary aircraft B64F 1/28)
U	B67D 7/04	· for transferring fuels, lubricants or mixed fuels and lubricants
U	B67D 7/0401	· · {arrangements for automatically fuelling vehicles, i.e. without human intervention}
U	B67D 2007/0444	· · · {Sensors}
U	B67D 2007/0455	· · · · {recognising the position}
U	B67D 2007/0457	· · · · · {of the car}
	B67D 2007/0461	· · · · · · {by calculating from a reference position, e.g. the car's silhouette, reference marks}
U	B67D 2007/0467	· · · · · · {of the fuel tank flap and/or fuel tank opening}
	B67D 2007/0471	· · · · · · · {by calculating from a reference position, e.g. the car's silhouette, reference marks}

Project: N/A (C01B)**C01B****NON-METALLIC ELEMENTS; COMPOUNDS THEREOF; {METALLOIDS OR COMPOUNDS THEREOF NOT COVERED BY SUBCLASS [C01C](#)}**NOTES

1. In this subclass, tradenames that are often found in scientific and patent literature have been used in order to define precisely the scope of the groups.
2. Attention is drawn to the definitions of groups of chemical elements following the title of section [C](#).

WARNINGS

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:

~~C01B 31/46~~[C01B31/16](#) covered by [B01J 39/24](#), [B01J 41/18](#)
[C01B 35/16](#), [C01B 35/18](#) covered by [C01B 35/00](#) + s.gr.

2. General concordance IPC4 or IPC5 to IPC6 groups is as follows:

[C01B 25/37](#) (partly) : [C01B 37/002](#)
[C01B 25/453](#) : [C01B 37/00](#), [C01B 39/54](#)
[C01B 33/185](#) : [C01B 37/02](#)
[C01B 33/28](#) and subgroups : [C01B 37/00](#), [C01B 39/00](#)
[C01B 35/1009](#) : [C01B 37/06](#), [C01B 39/12](#), [C01B 39/54](#)

Project: N/A (C03B)**U C03B 23/00****Re-forming shaped glass (re-forming fibres or filaments [C03B 37/14](#))**

U C03B 23/02

- Re-forming glass sheets

U C03B 23/023

- • by bending

U C03B 23/035

- • • using a gas cushion or by changing gas pressure, e.g. by applying vacuum {or blowing for supporting the glass while bending}

U C03B 23/0352

- • • • {by suction or blowing out for providing the deformation force to bend the glass sheet}

C03B 23/0357

- • • • {by suction without blowing, ~~e.g. with~~ **e.g. with** vacuum or by venturi effect}

Project: N/A (C04B)**U C04B 33/00****Clay-wares (monolithic refractories or refractory mortars [C04B 35/66](#); porous products [C04B 38/00](#))**NOTE

In groups [C04B 33/00](#) - [C04B 33/36](#), from 01-10-2008 onwards, the indexing codes of groups [C04B 2235/00](#) - [C04B 2235/9646](#) are used (with the exception of [C04B 2235/349](#), [C04B 2235/6027](#), [C04B 2235/604](#) and [C04B 2235/9661](#)) to identify aspects relating to ceramic starting mixtures and sintered ceramic products

U C04B 33/02

- Preparing or treating the raw materials individually or as batches

U C04B 33/13

- • Compounding ingredients ([C04B 33/36](#), [C04B 35/71](#) take precedence; {pigments for ceramics [C09C 1/0009](#)})

U C04B 33/132

- • • Waste materials; Refuse; {Residues}([C04B 33/16](#) takes precedence; {waste glass [C04B 33/13](#)})

C04B 33/135

- • • • Combustion residues, e.g. fly ash, incineration waste {(silica fume [C04B 33/132](#))}

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](#) - [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 2235/50
- • Constituents or additives of the starting mixture chosen for their shape or used because of their shape or their physical appearance
- U C04B 2235/52
- • • Constituents or additives characterised by their shapes
- U C04B 2235/5208
- • • • Fibers
- U C04B 2235/5216
- • • • • Inorganic
- U C04B 2235/522
- • • • • Oxidic
- C04B 2235/5232
- • • • • Silica or silicates other than aluminosilicates, e.g. quartz

Project: N/A (C07B)**C07B****GENERAL METHODS OF ORGANIC CHEMISTRY; APPARATUS THEREFOR (preparation of carboxylic acid esters by telomerisation [C07C 67/47](#); telomerisation [C08F](#))****NOTES**

1. In this subclass, the functional group which is present already in some residue being introduced and is not substantially involved in a chemical reaction, is not considered as the functional group which is formed or introduced as a result of the chemical reaction.
2. In this subclass, the following term is used with the meaning indicated:
 - "separation" means separation only for the purposes of recovering organic compounds.
3. When classifying in this subclass, classification is also made in group [B01D 15/08](#) insofar as subject matter of general interest relating to chromatography is concerned
4. In this subclass, the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place according to the type of reaction employed, noting the bond or the functional group which is formed or introduced as a result of the chemical reaction.
5. {~~C07B 59/00~~[C07B 59/00](#) and subgroups thereof are used for the classification of individual labelled compounds as well as for general methods.}
6. {[C07B 61/02](#) is used for the classification of individual free radicals as well as for general methods.}

Project: N/A (C08B)**U C08B 37/00**

Preparation of polysaccharides not provided for in groups [C08B 1/00](#) - [C08B 35/00](#); Derivatives thereof (cellulose [D21](#); {microbiological processes [C12P](#)})

- U C08B 37/0006 · {Homoglycans, i.e. polysaccharides having a main chain consisting of one single sugar, e.g. colominic acid}
- U C08B 37/0036 · · {Galactans; Derivatives thereof}
- C08B 37/0039 · · · {Agar; Agarose, i.e. D-galactose, 3,6-anhydro-D-galactose, methylated, sulfated, e.g. from the red algae Gelidium and Gracilaria; Agaropectin; Derivatives thereof, e.g. Sepharose, ~~i.e. crosslinked~~ *i.e. crosslinked* agarose}

Project: N/A (C08F)**U C08F 2/00****Processes of polymerisation**NOTE

Group [C08F 2/00](#) and subgroups can be incomplete according to the following classification rules:

- if a process of polymerisation is specifically used for only one type of polymer, it is not classified in [C08F 2/00](#);
- in such a case, the classification symbol of [C08F 2/00](#) providing for the process of polymerisation may be used in the form of Combination Set in the groups providing for the polymer, e.g. ([C08F 36/04](#), [C08F 2/14](#))
- this method of classification is applied only when a note after the group providing for the polymer explicitly indicates which symbols of [C08F 2/00](#) may be used for forming the Combination Set.

- C08F 2/44 · Polymerisation in the presence of compounding ingredients, e.g. plasticisers, dyestuffs, fillers

U C08F 293/00

Macromolecular compounds obtained by polymerisation on to a macromolecule having groups capable of inducing the formation of new polymer chains bound exclusively at one or both ends of the starting macromolecule (on to polymers modified by introduction of unsaturated end groups [C08F 290/02](#))

- C08F 293/005 · {using free radical "living" or "controlled" polymerisation, e.g. using a complexing agent}

U C08F 2410/00**Catalyst preparation (not used)**

- C08F 2410/03 · Multinuclear procatalyst, ~~i.e. containing~~ *i.e. containing* two or more metals, being different or not

Project: RP0309-C (C08G)**U C08G 75/00**

Macromolecular compounds obtained by reactions forming a linkage containing sulfur with or without nitrogen, oxygen, or carbon in the main chain of the macromolecule

- U C08G 75/02 · Polythioethers
- M C08G 75/0204 · · Polyarylenethioethers

NOTES

1. In this group, macromolecular compounds are classified for the inventive aspects which are relevant in any of the following sets of groups:

- [C08G 75/0209-C08G 75/0245](#);
- [C08G 75/025-C08G 75/0268](#);
- [C08G 75/0277-C08G 75/0281](#);

- [C08G 75/0286-C08G 75/0295](#).

2. Within each set of groups mentioned in Note (1), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.

WARNING

~~Group~~ ~~Groups~~ [C08G 75/0204-C08G 75/0281](#) ~~is are~~ incomplete pending reclassification of documents from ~~group~~ ~~groups~~ [C08G 75/04](#) and [C08G 75/045](#).

~~Groups~~ ~~All~~ ~~C08G 75/04~~ and ~~groups listed~~ ~~C08G 75/0204~~ ~~in this Warning~~ should be considered in order to perform a complete search.

M C08G 75/0277

- • Post-polymerisation treatment (chemical after-treatment [C08G 75/0286](#))

WARNING

~~Group~~ ~~C08G 75/0277~~ is impacted by reclassification into group ~~C08G 75/0286~~.

~~Groups~~ ~~C08G 75/0277~~ and ~~C08G 75/0286~~ should be considered in order to perform a complete search.

Groups [C08G 75/0277](#) and [C08G 75/0281](#) are incomplete pending reclassification of documents from groups [C08G 75/04](#) and [C08G 75/045](#). Groups [C08G 75/0277](#) and [C08G 75/0281](#) are also impacted by reclassification into groups [C08G 75/0286-C08G 75/0295](#). All groups listed in this Warning should be considered in order to perform a complete search.

M C08G 75/0286

- • Chemical after-treatment

WARNING

~~Group~~ ~~Groups~~ [C08G 75/0286-C08G 75/0295](#) ~~is are~~ incomplete pending reclassification of documents from ~~group~~ ~~groups~~ [C08G 75/0277](#), [C08G 75/0281](#), [C08G 75/04](#), and [C08G 75/045](#).

~~Groups~~ ~~All~~ ~~C08G 75/0277~~ and ~~groups listed~~ ~~C08G 75/0286~~ ~~in this Warning~~ should be considered in order to perform a complete search.

M C08G 75/04

- • from mercapto compounds or metallic derivatives thereof ([C08G 75/0204](#) takes precedence)

WARNING

~~Group~~ ~~Groups~~ [C08G 75/04](#) ~~is~~ and [C08G 75/045](#) are impacted by reclassification into ~~group~~ ~~groups~~ [C08G 75/0204-C08G 75/0295](#).

~~Groups~~ ~~All~~ ~~C08G 75/04~~ and ~~groups listed~~ ~~C08G 75/0204~~ ~~in this Warning~~ should be considered in order to perform a complete search.

U C08G 75/20

- Polysulfones

M C08G 75/205

- • Copolymers of sulfur dioxide with unsaturated organic compounds

WARNING

~~Group~~ ~~C08G 75/205~~ is incomplete pending reclassification of documents from ~~group~~ ~~C08G 75/22~~.

~~Groups~~ ~~C08G 75/205~~ and ~~C08G 75/22~~ should be considered in order to perform a complete search.

M C08G 75/22

- • Copolymers of sulfur dioxide with unsaturated aliphatic compounds

WARNING

~~Group~~ ~~C08G 75/22~~ is impacted by reclassification into group ~~C08G 75/205~~. ~~Groups~~ ~~C08G 75/22~~ and ~~C08G 75/205~~ should be considered in order to perform a complete search.

Project: N/A (C10G)

- U C10G 21/00** Refining of hydrocarbon oils in the absence of hydrogen, by extraction with selective solvents ([C10G 17/00](#), [C10G 19/00](#) take precedence; dewaxing oils [C10G 73/02](#))
- C10G 21/006 · {of waste oils, e.g. PCB's e.g. PCB's containing oils}
- U C10G 25/00** Refining of hydrocarbon oils in the absence of hydrogen, with solid sorbents
- NOTE
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.
- C10G 25/006 · {of waste oils, e.g. PCB's e.g. PCB's containing oils}
- U C10G 25/02** · with ion-exchange material
- U C10G 25/03** · · with crystalline aluminosilicates, e.g. molecular sieves
- C10G 25/05 · · · Removal of non-hydrocarbon compounds, e.g. sulfur compounds

Project: N/A (C10L)

- U C10L 1/00** Liquid carbonaceous fuels
- U C10L 1/10** · containing additives
- U C10L 1/14** · · Organic compounds
- U C10L 1/18** · · · Containing oxygen
- C10L 1/1802 · · · · {natural products, e.g. waxes, extracts, fatty oils}

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 9/10** · Transferases (2.) (ribonucleases [C12N 9/22](#))
- U C12N 9/12** · · transferring phosphorus containing groups, e.g. kinases (2.7)
- U C12N 9/1241** · · · {Nucleotidyltransferases (2.7.7)}
- C12N 9/127 · · · · {RNA-directed RNA polymerase (2.7.7.48), i.e. RNA replicase}
- U C12N 9/14** · Hydrolases (3)
- U C12N 9/24** · · acting on glycosyl compounds (3.2)
- U C12N 9/2402** · · · {hydrolysing O- and S- glycosyl compounds (3.2.1)}
- C12N 9/2474 · · · · {Hyaluronoglucosaminidase (3.2.1.35), i.e. hyaluronidase}
- U C12N 9/48** · · acting on peptide bonds (3.4)
- U C12N 9/50** · · · Proteinases {Endopeptidases (3.4.21-3.4.25)}
- U C12N 9/64** · · · · derived from animal tissue
- U C12N 9/6421** · · · · · {from mammals}

- U C12N 9/6424 {Serine endopeptidases (3.4.21)}
- C12N 9/6467 {Granzymes, e.g. granzyme A (3.4.21.78); granzyme B (3.4.21.79)}
- 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
- U C12N 15/11 . . DNA or RNA fragments; Modified forms thereof (DNA or RNA not used in recombinant technology, C07H 21/00); {Non-coding nucleic acids having a biological activity}
- NOTE**
- Documents relating to DNA or its corresponding RNA and their use in recombinant DNA technology or 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 relating to their use in recombinant technology. Groups C12N 15/11 - C12N 15/117 cover also the use of non-coding nucleic acids as active ingredients in medicinal preparations. The C12N 2303/00 ICO scheme has to be applied to these groups. When documents classifiable in one or more subgroups disclose general principles of the technology applicable to the whole field, classification is also made in group C12N 15/111
- C12N 15/113 . . . Non-coding nucleic acids modulating the expression of genes, e.g. antisense e.g. antisense oligonucleotides; {Antisense DNA or RNA; Triplex-forming oligonucleotides; Catalytic nucleic acids, e.g. ribozymes; Nucleic acids used in co-suppression or gene silencing (when used in plants C12N 15/8218)}

Project: N/A (C12Q)

- U C12Q 2563/00** **Nucleic acid detection characterised by the use of (not used)**
- C12Q 2563/137 . Metal/ion, e.g. metal label

Project: N/A (C12Y)

- U C12Y 104/00** **Oxidoreductases acting on the CH-NH₂ group of donors (1.4)**
- U C12Y 104/03 . with oxygen as acceptor (1.4.3)
- C12Y 104/03021 . . Primary-amine oxidase (1.4.3.21), i.e. VAP-1
- U C12Y 207/00** **Transferases transferring phosphorus-containing groups (2.7)**
- U C12Y 207/11 . Protein-serine/threonine kinases (2.7.11)
- C12Y 207/11025 . . Mitogen-activated protein kinase kinase kinase (2.7.11.25), i.e. MAPKKK or MAP3K
- U C12Y 304/00** **Hydrolases acting on peptide bonds, i.e. peptidases (3.4)**
- U C12Y 304/13 . Dipeptidases (3.4.13)
- C12Y 304/13009 . . Xaa-Pro dipeptidase (3.4.13.9) i.e. prolidase
- U C12Y 306/00** **Hydrolases acting on acid anhydrides (3.6)**

- U C12Y 306/03 • acting on acid anhydrides; catalysing transmembrane movement of substances (3.6.3)
- C12Y 306/03001 • • Phospholipid-translocating ATPase (3.6.3.1), i.e. [Mg2+-ATPase](#)

Project: N/A (C40B)**C40B****COMBINATORIAL CHEMISTRY; LIBRARIES, e.g. CHEMICAL LIBRARIES, IN SILICO LIBRARIES**NOTES

1. In this subclass, the first place priority rule is applied, i.e. at each hierarchical level, classification is made in the first appropriate place.

2. When classifying in this subclass, subject matter of interest is also classified in other appropriate places:

- library members are also classified in the appropriate places elsewhere in the IPC, (e.g. in section [C](#)) according to established procedure relating to "Markush"-type formulae (see paragraph 101 of the Guide);
- methods or apparatus covered by this subclass are also classified for their biological, chemical, physical or other features in the appropriate ~~places~~[places](#) in the IPC, if such features are of interest, e.g.

[A01N](#)

Biocides

[A61K](#)

Preparations for medical, dental or toilet purposes

[A61P](#)[A61P](#)

Therapeutic activity of compounds

[B01D](#)

Separation

[B01J](#)Chemical or physical processes, e.g. catalysis;
Apparatus therefor[B01L](#)

Chemical or physical laboratory apparatus

[B29](#)

Shaped plastics

[C01](#), [C07](#), [C08](#)

Inorganic, organic or organic macromolecular compounds; Methods of preparation or separation thereof

[C12](#)

Biochemistry. microbiology, enzymology including micro-organisms or enzymes, preparing them, using them to synthesis compounds or compositions; Measuring or testing processes involving micro-organisms or enzymes; Mutation or genetic engineering

[C22](#)

Metal alloys

[G01N](#)

Chemical or physical analysis

[G01R](#), [G01T](#)

Physical measurements methods; Apparatus thereof

[G03F](#)

Photomechanical methods

[G06F](#)

Electrical digital data processing

[G06K](#)

Data processing

[G06T](#)

Image data processing

[G09F](#)

Displaying; Advertising

3. {[C12N 15/1034](#)-[C12N 15/1093](#) always take precedence over [C40B](#)}

Project: N/A (D06C)

- U D06C 23/00 **Making patterns or designs on fabrics (by printing [B41F](#); decoration in general [B44](#))**
- D06C 23/04 • by shrinking, embossing, ~~moiré~~[moiré](#), or crêping
- U D06C 2700/00 **Finishing or decoration of textile materials, except for bleaching, dyeing, printing, mercerising, washing or fulling**

D06C 2700/31

- Methods for making patterns on fabrics, e.g. by application of powder dye, ~~moirèing~~ *moiréing*, embossing

Project: RP0399 (D06L)**M D06L**

BLEACHING, e.g. OPTICAL BLEACHING, DRY-CLEANING, WASHING OR WASHING BLEACHING FIBRES, FILAMENTS, THREADS, YARNS, FABRICS, FEATHERS OR MADE-UP FIBROUS GOODS; BLEACHING LEATHER OR FURS ~~{{softening compositions for textiles, cleaning compositions for carpets, upholstery, fur or leather C11D;}}~~ **chemical treatment of fibrous materials to obtain fibres for spinning D01; for mechanical matters D06B, D06C, D06F; bleaching paper pulp or cotton linters D21)**

NOTES

1. In this subclass, the term "bleaching" also covers "optical bleaching".
2. This subclass does not cover treatment of textiles by purely mechanical means, which is covered by subclasses D06B, D06C or D06F.

M D06L 1/00

Dry-cleaning or washing fibres, filaments, threads, yarns, fabrics, feathers or made-up fibrous goods

D D06L 1/005

- {using only solid or pasty materials}
- <administratively transferred to [D06L 1/01](#)>

N D06L 1/01

- using only solid or pasty agents

U D06L 1/02

- using organic solvents

M D06L 1/04

- ~~together combined~~ with *specific* additives ([D06L 1/06](#) takes precedence)

M D06L 1/12

- using aqueous ~~baths~~ *solvents*

M D06L 1/22

- Processes involving successive treatments with aqueous and organic ~~materials~~ *agents*

D D06L 3/00

Bleaching fibres, threads, yarns, fabrics, feathers or made-up fibrous goods, leather or furs ~~{{dyeing and bleaching D06P 1/0024}}~~
<administratively transferred to [D06L 4/00](#)>

D D06L 3/02

- using compounds which develop oxygen (D06L 3/06 takes precedence)
- <administratively transferred to [D06L 4/10](#)>

D D06L 3/021

- {combined with specific additives}
- <administratively transferred to [D06L 4/12](#)>

D D06L 3/023

- {using inorganic compounds}
- <administratively transferred to [D06L 4/13](#)>

D D06L 3/025

- {using organic compounds}
- <administratively transferred to [D06L 4/15](#)>

D D06L 3/026

- {in an inert solvent}
- <administratively transferred to [D06L 4/17](#)>

D D06L 3/028

- {in a gaseous compositions}
- <administratively transferred to [D06L 4/18](#)>

D D06L 3/04

- by irradiation or ozonisation {electrolysis}
- <administratively transferred to [D06L 4/50](#)>

D D06L 3/06

- using compounds which contain halogen
- <administratively transferred to [D06L 4/20](#)>

D D06L 3/061

- {combined with specific additives}
- <administratively transferred to [D06L 4/21](#)>

D D06L 3/063

- {using organic compounds}
- <administratively transferred to [D06L 4/27](#)>

- D D06L 3/065
 - {in an inert solvent}
 - <administratively transferred to [D06L 4/28](#)>
- D D06L 3/066
 - {in a gaseous composition (D06L 3/08 takes precedence)}
 - <administratively transferred to [D06L 4/29](#)>
- D D06L 3/068
 - {using hypohalogenites}
 - <administratively transferred to [D06L 4/23](#)>
- D D06L 3/08
 - chlorites; chlorine dioxide
 - <administratively transferred to [D06L 4/24](#)>
- D D06L 3/085
 - {combined with specific additives}
 - <administratively transferred to [D06L 4/26](#)>
- D D06L 3/10
 - using reducing agents
 - <administratively transferred to [D06L 4/30](#)>
- D D06L 3/11
 - using enzymes
 - <administratively transferred to [D06L 4/40](#)>
- D D06L 3/12
 - Optical bleaching {brightening}
 - <administratively transferred to [D06L 4/60](#)>
- D D06L 3/1207
 - {Optical brightening in aqueous medium}
 - <administratively transferred to [D06L 4/614](#)>
- D D06L 3/1214
 - {with anionic brighteners}
 - <administratively transferred to [D06L 4/621](#)>
- D D06L 3/1221
 - {with cationic brighteners}
 - <administratively transferred to [D06L 4/629](#)>
- D D06L 3/1228
 - {with disperse brighteners}
 - <administratively transferred to [D06L 4/636](#)>
- D D06L 3/1235
 - {Optical brightening in organic solvent}
 - <administratively transferred to [D06L 4/607](#)>
- D D06L 3/1242
 - {Optical brightening in gaseous or solid form, e.g. transfer, powder}
 - <administratively transferred to [D06L 4/643](#)>
- D D06L 3/125
 - {Optical brightening with mixtures of optical brighteners}
 - <administratively transferred to [D06L 4/65](#)>
- D D06L 3/1257
 - {Optical brightening combined with other treatments, e.g. finishing, bleaching, softening, dyeing, white pigments}
 - <administratively transferred to [D06L 4/657](#)>
- D D06L 3/1264
 - {Optical brighteners preparations, physical treatments of optical brighteners, optical brighteners in aerosol form}
 - <administratively transferred to [D06L 4/664](#)>
- D D06L 3/1271
 - {Optical brightening assistants}
 - <administratively transferred to [D06L 4/671](#)>
- D D06L 3/1278
 - {Fixing treatments in optical brightening, e.g. heat, steam, acid shock}
 - <administratively transferred to [D06L 4/679](#)>
- D D06L 3/1285
 - {Fugitive optical brightening, organic blueing, discharge of optical brighteners, optical brighteners in discharge pastes, differential optical brightening}
 - <administratively transferred to [D06L 4/686](#)>
- D D06L 3/1292
 - {Organic blueing with mixtures of organic dyes; mixtures of dyes with optical brighteners}
 - <administratively transferred to [D06L 4/693](#)>
- D D06L 3/14
 - Multi-step processes
 - <administratively transferred to [D06L 4/70](#)>
- D D06L 3/16
 - combined with cleaning or washing
 - <administratively transferred to [D06L 4/75](#)>

N	D06L 4/00	Bleaching fibres, filaments, threads, yarns, fabrics, feathers or made-up fibrous goods; Bleaching leather or furs
N	D06L 4/10	• using agents which develop oxygen (D06L 4/20 takes precedence)
N	D06L 4/12	• • combined with specific additives
N	D06L 4/13	• • using inorganic agents
N	D06L 4/15	• • using organic agents
N	D06L 4/17	• • in an inert solvent
N	D06L 4/18	• • in a gaseous environment
Q	D06L 4/20	• using agents which contain halogen
		<u>WARNING</u> Group D06L 4/20 is impacted by reclassification into group D06L 4/22 . Groups D06L 4/20 and D06L 4/22 should be considered in order to perform a complete search.
Q	D06L 4/21	• • combined with specific additives (D06L 4/24 takes precedence)
		<u>WARNING</u> Group D06L 4/21 is impacted by reclassification into groups D06L 4/24 and D06L 4/26 . Groups D06L 4/21 , D06L 4/24 , and D06L 4/26 should be considered in order to perform a complete search.
N	D06L 4/22	• • using inorganic agents
		<u>WARNING</u> Group D06L 4/22 is incomplete pending reclassification of documents from group D06L 4/20 . Groups D06L 4/20 and D06L 4/22 should be considered in order to perform a complete search.
N	D06L 4/23	• • • using hypohalogenites
N	D06L 4/24	• • • using chlorites or chlorine dioxide
		<u>WARNING</u> Groups D06L 4/24 and D06L 4/26 are incomplete pending reclassification of documents from groups D06L 4/21 and D06L 4/28 . Groups D06L 4/21 , D06L 4/24 , D06L 4/26 , and D06L 4/28 should be considered in order to perform a complete search.
N	D06L 4/26	• • • combined with specific additives
N	D06L 4/27	• • using organic agents
Q	D06L 4/28	• • in an inert solvent (D06L 4/24 takes precedence)
		<u>WARNING</u> Group D06L 4/28 is impacted by reclassification into groups D06L 4/24 and D06L 4/26 . Groups D06L 4/28 , D06L 4/24 , and D06L 4/26 should be considered in order to perform a complete search.
N	D06L 4/29	• • in a gaseous environment (D06L 4/24 takes precedence)
N	D06L 4/30	• using reducing agents
N	D06L 4/40	• using enzymes
N	D06L 4/50	• by irradiation or ozonisation
N	D06L 4/60	• Optical bleaching or brightening
N	D06L 4/607	• • in organic solvents

- N D06L 4/614 • • *in aqueous solvents*
- N D06L 4/621 • • • *with anionic brighteners*
- N D06L 4/629 • • • *with cationic brighteners*
- N D06L 4/636 • • • *with disperse brighteners*
- N D06L 4/643 • • *wherein the brightener is introduced in a gaseous environment or in solid phase, e.g. by transfer, by use of powders or by use of super-critical fluids*
- N D06L 4/65 • • *with mixtures of optical brighteners*
- N D06L 4/657 • • *combined with other treatments, e.g. finishing, bleaching, softening, dyeing or pigment printing*
- N D06L 4/664 • • *Preparations of optical brighteners; Optical brighteners in aerosol form; Physical treatment of optical brighteners*
- N D06L 4/671 • • *Optical brightening assistants, e.g. enhancers or boosters*
- N D06L 4/679 • • *Fixing treatments in optical brightening, e.g. heating, steaming or acid shock*
- N D06L 4/686 • • *Fugitive optical brightening; Discharge of optical brighteners in discharge paste; Blueing; Differential optical brightening*
- N D06L 4/693 • • • *Blueing with mixtures of dyes; Blueing with mixtures of dyes and optical brighteners*
- N D06L 4/70 • *Multi-step processes*
- N D06L 4/75 • • *combined with cleaning or washing*

Project: N/A (D06M)

- U D06M 11/00** **Treating fibres, threads, yarns, fabrics, or fibrous goods made from such materials, with inorganic substances or complexes thereof; Such treatment combined with mechanical treatment, e.g. mercerising ([D06M 10/00](#) takes precedence; decorating textiles by local treatment [D06Q 1/00](#))**

NOTES

1. If a compound used in the treatment is characterised by its cation, it is classified in group [D06M 11/00](#); metallisation by treatment with a metal salt, followed by reduction, is classified in group [D06M 11/83](#).
2. In this group, the following term is used with the meaning indicated:
 - "treatment" means, in the absence of an indication to the contrary, the treatment which leads to the end product, e.g. treatment with barium sulfate can mean treatment with barium chloride and with sulfuric acid in two separate steps

- U D06M 11/73 • with carbon or compounds thereof ([D06M 11/67](#) takes precedence)
- D06M 11/75 • • with phosgene; with compounds containing both carbon and sulfur, e.g. thiophosgene (with thiocyanic acid [D06M 11/67](#); with thiocarbamic acid [D06M 13/425](#); with thiourea [D06M 13/432](#))

Project: N/A (D06N)

- U D06N 2201/00** **Chemical constitution of the fibres, threads or yarns**
- D06N 2201/06 • Animal fibres, e.g. hair, wool, silk

Project: N/A (E01B)

- E01B 33/00** **Machines or devices for shifting tracks, with or without lifting, e.g. for aligning track, for shifting excavator track (combined with sleeper packing machines [E01B 27/17](#))**

Project: N/A (E01C)

- U E01C 7/00** Coherent pavings made in situ (specially adapted for playgrounds or sports grounds [E01C 13/06](#); for footpaths, sidewalks or cycle tracks [E01C 15/00](#))
- U E01C 7/08** • made of road-metal and binders {([E01C 7/36](#) takes precedence)}
- E01C 7/30** • • of road-metal and other binders, e.g. synthetic material, {i.e. resin}

Project: MP0329 (E02D)

- M E02D** FOUNDATIONS; ~~EXCAVATIONS~~; ~~EXCAVATIONS~~; EMBANKMENTS (specially adapted for hydraulic engineering [E02B](#)); UNDERGROUND OR UNDERWATER ~~STRUCTURE~~ ~~STRUCTURES~~ {(tunnels, tunnelling, mining [E21](#))}

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:

[E02D 29/09](#) covered by [E02D 29/06](#)

Project: N/A (E04B)

- U E04B 2/00** Walls, e.g. partitions, for buildings; Wall construction with regard to insulation; Connections specially adapted to walls (connections for building structures in general [E04B 1/38](#); insulation for buildings in general [E04B 1/62](#); building elements of relatively thin form for parts of buildings [E04C 2/00](#))
- U E04B 2/74** • Removable non-load-bearing partitions; Partitions with a free upper edge (framed panels [E04C 2/38](#)) {modular coordination}
- U E04B 2/82** • • characterised by the manner in which edges are connected to the building; Means therefor; Special details of easily-removable partitions {as far as related to the connection with other parts of the building}
- E04B 2/821** • • • {Connections between two opposed surfaces (i.e. floor and ceiling) by means of a device offering a restraining force acting in the plane of the partition}

Project: N/A (E04F)

- U E04F 13/00** Coverings or linings, e.g. for walls or ceilings (flooring [E04F 15/00](#); decoration of surfaces, mosaic work [B44](#), e.g. paper-hanging [B44C 7/00](#); made of webs, e.g. of fabrics or wallpaper, {as such, or their manufacturing} [D03D](#), [D04G](#), [D04H](#), [D06N](#), [D21H](#); construction of {false} ceilings [E04B 9/00](#); roofings or similar water-tight coverings against precipitation [E04D](#))
- E04F 13/02** • of plastic materials hardening after applying, e.g. plaster (surface treatment in painting technique [B44D](#); inorganic or bituminous masses [C04B](#); organic plastics [C08L](#) {implements for applying plasticised materials [E04F 21/02](#)})
- U E04F 2201/00** Joining sheets or plates or panels
- U E04F 2201/05** • Separate connectors or inserts, e.g. pegs, pins, keys or strips
- E04F 2201/0511** • • Strips or bars, e.g. nailing strips

Project: RP0408 (E05F)

- C E05F 5/00** Braking devices, e.g. checks; Stops; ~~Buffers~~; ~~{Dovetails with buffering action}~~; **Buffers** (construction of pneumatic or liquid braking devices [E05F 3/00](#); **braking devices, buffers or end stops on drawers for tables, cabinets or like furniture** [A47B 88/473](#); combined with devices for holding wings open [E05C 17/00](#); devices for limiting opening of wings or for holding wings open by a movable member extending between frame and wing [E05C 17/04](#))

WARNING

Group [E05F 5/00](#) is impacted by reclassification into groups [A47B 88/473](#) and [A47B 88/477](#).

Groups [E05F 5/00](#), [A47B 88/473](#), and [A47B 88/477](#) should be considered in order to perform a complete search.

Project: N/A (E05G)

- E05G 7/00** Safety transaction partitions, e.g. movable pay-plates; {Bank drive-up windows} (non-safety paying counters, e.g. for supermarkets [A47F 9/02](#); {secure depositories for food [A47G 29/14](#); secure transfers between a building and a vehicle [B60P 3/03](#)})

Project: N/A (E05Y)

- U E05Y 2600/00** Mounting or coupling arrangements for elements provided for in this subclass
- E05Y 2600/60
- Mounting or coupling members (devices for fastening or securing constructional elements or machine parts together, e.g. nails, bolts, in general [F16B](#)); Accessories therefore

Project: N/A (E21B)

- U E21B 6/00** Drives for combined percussion and rotary drilling (drives used in the borehole [E21B 4/00](#))
- E21B 6/06
- the rotation being intermittent, ~~e.g. obtained~~ **e.g. obtained** by ratchet device
- U E21B 7/00** Special methods or apparatus for drilling
- U E21B 7/02**
- Portable drilling rigs, truck- or skid-mounted, with their own drive (portable drilling rigs for use on underwater floors [E21B 7/124](#))
- E21B 7/021
- • {With a rotary table, i.e. a fixed rotary drive for a relatively advancing tool (rotary tables [E21B 3/04](#))}
- U E21B 25/00** Apparatus for obtaining or removing undisturbed cores, e.g. core barrels, core extractors (core bits [E21B 10/02](#); using explosives or projectiles in boreholes [E21B 49/04](#); side-wall sampling or coring [E21B 49/06](#))
- U E21B 25/02**
- the core receiver being insertable into, or removable from, the borehole without withdrawing the drilling pipe (retrievable drill bits [E21B 10/64](#))
- E21B 25/04
- • the core receiver having a core forming cutting edge or element, e.g. punch type core barrels
- 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](#))
- U E21B 43/11**
- Perforators; Permeators
- E21B 43/112
- • Perforators with extendable perforating members, e.g. actuated by fluid means

Project: N/A (E21C)

E21C

MINING OR QUARRYING

NOTES

1. This subclass covers methods or apparatus specific to mining or quarrying
2. This subclass does not cover, even though they may be disclosed only for mining or quarrying, drill bits, bore reamers, core taking devices, drilling pipes or rods, handling, racking or connecting arrangements for drilling pipes or rods, counterboring or enlarging drilled holes, flame drilling, or other drilling apparatus, which are covered by subclass [E21B](#)

WARNING

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

E21B 3/02	covered by	E21B 3/02
E21B 3/035	covered by	E21B 3/035
E21B 3/025	covered by	E21B 3/025
E21B 3/03	covered by	E21B 3/03
E21B 6/00	covered by	E21B 6/00
E21C 3/08 E21C3/08	covered by	B25D 9/06 , B25D15/00
E21C 3/10 E21C3/10	covered by	B25D15/02
E21C 3/12 E21C3/12	covered by	B25D 11/00
E21C 3/14 E21C3/14	covered by	B25D 11/00
E21C 3/20 E21C3/20	covered by	B25D 9/12
E21C 3/22 E21C3/22	covered by	B25D 9/125
B25D 11/005	covered by	B25D 9/265
E21C 3/34 E21C3/34	covered by	B25D 17/08
E21B 19/081	covered by	E21B 19/081
E21B 19/083	covered by	E21B 19/083
E21B 19/084	covered by	E21B 19/084
E21B 19/089	covered by	E21B 19/089
E21B 44/08	covered by	E21B 44/08
E21B 44/00	covered by	E21B 44/00
E21B 21/14	covered by	E21B 21/14
E21B 7/02	covered by	E21B 7/02
E21C 37/24	covered by	B25D
E21C 37/26	covered by	B25D
E21C 41/18	covered by	E21C 41/16
E21C 41/20	covered by	E21C 41/16
E21C 41/22	covered by	E21C 41/16
E21C 41/24	covered by	E21C 41/16
E21C 41/28	covered by	E21C 41/26
E21C 41/30	covered by	E21C 41/26
E21C 45/02	covered by	E21C 25/60 , E21C 45/00
E21C 45/04	covered by	E21C 25/60 , E21C 45/00
E21C 45/06	covered by	E21C 25/60 , E21C 45/00
E21C 45/08	covered by	E21C 25/60 , E21C 45/00
E21C 50/00	covered by	E02F 3/88
E21C 50/02	covered by	E02F 3/88

Project: N/A (F01D)

- U F01D 11/00 **Preventing or minimising internal leakage of working-fluid, e.g. between stages (sealings in general [F16J](#) {sealing arrangements for transition ducts of combustor cans [F01D 9/023](#)})**
- U F01D 11/08
 - for sealing space between rotor blade tips and stator (specially-shaped blade tips therefor [F01D 5/20](#))
- F01D 11/14
 - • Adjusting or regulating tip-clearance, i.e. distance between rotor-blade tips and stator casing (rotors with blades adjustable in operation [F01D 7/00](#))

Project: N/A (F02D)

- U F02D 9/00 **Controlling engines by throttling air or fuel-and-air induction conduits or exhaust conduits**

NOTE

- in this group the following indexing codes are used: [F02D 2700/00](#),
[F02D 2700/02](#), [F02D 2700/04](#),
[F02D 2700/09](#)

- U F02D 9/08
 - Throttle valves specially adapted therefor; Arrangements of such valves in conduits (throttle valves modified for use in or arranged in carburettors [F02M](#); throttle valves in general [F16K](#))
- U F02D 9/10
 - • having pivotally-mounted flaps
- U F02D 9/1035
 - • • {Details of the valve housing}
- F02D 9/104
 - • • • {Shaping of the flow path in the vicinity of the flap, e.g. having inserts in the housing}
- U F02D 41/00 **Electrical control of supply of combustible mixture or its constituents ([F02D 43/00](#) takes precedence)**
- U F02D 41/02
 - Circuit arrangements for generating control signals
- U F02D 41/04
 - • Introducing corrections for particular operating conditions ([F02D 41/14](#) takes precedence)
- U F02D 41/08
 - • • for idling ([F02D 41/06](#), [F02D 41/16](#) take precedence)
- F02D 41/083
 - • • • {taking into account engine load variation, e.g. air-conditioning}

Project: N/A (F16D)**F16D****COUPLINGS FOR TRANSMITTING ROTATION; CLUTCHES; BRAKES**NOTE

Attention is drawn to the following places:

- | | |
|------------------------------|---|
| A01D 69/08 , | Clutches or brakes of harvesting machines for grass or |
| A01D 69/10 | cereals; |
| A61C 1/18 | Clutches in dental machines for boring or cutting; |
| B21B 35/14 | Drive couplings for metal-rolling mills; |
| B30B 15/10 | Brakes specially adapted for presses; |
| B30B 15/12 | Clutches specially adapted for presses; |
| B41J 33/52 | Braking devices for ribbon-feed devices in selective printing mechanisms; |
| B60K 17/00 | Arrangement or location of clutches in vehicles; |
| B61H | Brakes peculiar to rail vehicles; |
| B62B 5/04 | Braking mechanisms for hand carts; |
| B62B 9/08 | Braking mechanisms for children's carriages or perambulators; |
| B62C 7/00 | Braking mechanisms for animal-drawn vehicles; |

B62L	Cycle brakes;
B66D 5/00	Braking devices for lifting or hoisting gear;
E21B 17/02	Couplings for drilling rods;
H02P 3/04	Brakes for electric motors, generators, dynamo-electric converters;
H04L 13/04	Clutches for apparatus for transmission of coded digital 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:

F16D 3/19	covered by	F16D 3/50 ;
F16D 3/27	covered by	F16D 3/265 ;
F16D 27/07	covered by	F16D 27/06 , F16D 27/14 ;
F16D 48/12	covered by	B60K 23/0808 ;
F16D 65/35 F16D65/35	covered by	F16D 63/00 .

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](#)})**
- F16F 15/14** **• • using masses freely rotating with the system, {i.e. ~~uninvolved~~ i.e. *uninvolved* in transmitting driveline torque, e.g. rotative dynamic dampers (compensation of inertia forces [F16F 15/22](#); weights for balancing rotating bodies [F16F 15/32](#)})**

Project: N/A (F17D)

- U F17D 1/00** **Pipe-line systems (conveying articles or materials through a pipe- line by means of a fluid carrier [B65G 51/00](#), [B65G 53/00](#); liquids [B67D](#); special devices for transferring liquids from bulk storage containers into vehicles or boats or *vice versa*, e.g. loading or unloading vehicles or portable containers [B67D 7/00](#); conveying material which has been excavated by a dredger or soil shifter through a pipe-line [E02F 7/10](#); sewer pipe-line systems [E03F 3/00](#); thermal insulation of pipe-lines [F16L 59/00](#); central heating systems [F24D](#))**
- U F17D 1/08** **• for liquids or viscous products (water-main or service pipe systems [E03B 7/04](#); domestic hot-water supply systems [F24D 17/00](#))**
- F17D 1/082** **• • {for cold fluids, e.g. liquified gas ([F17D 1/086](#) takes precedence)}**
- F17D 1/088** **• • {for solids or suspensions of solids in liquids, e.g. slurries ([F17D 1/086](#) takes precedence)}**

Project: MP0338 (F21H)

M F21H **INCANDESCENT MANTLES; OTHER INCANDESCENT BODIES HEATED BY COMBUSTION (arrangements thereof F21V 36/00; burners F23D)**

Project: N/A (F23J)

U F23J 2219/00 **Treatment devices**
 F23J 2219/30 • Sorption devices using carbon, e.g. coke

Project: N/A (F24F)

U F24F 3/00 **Air-conditioning systems in which conditioned primary air is supplied from one or more central stations to distributing units in the rooms or spaces where it may receive secondary treatment; Apparatus specially designed for such systems (room units F24F 1/00; construction of heat-exchangers F28 {F24F 3/044 takes precedence; arrangement or assembly of components for the primary treatment of air F24F 11/08})**

U F24F 3/044 • Systems in which all treatment is given in the central station, i.e. all-air systems

U F24F 3/0442 • • {with volume control at a constant temperature}

F24F 3/0444 • • • {in which two airstreams are conducted from the central station via independent conduits to the space to be treated, of which one has a constant volume and a season-adapted temperature to compensate for the fluctuating heat transfer losses of the building, while the other varies in volume and is always cold in order to compensate for the interior fluctuations and variable solar heating effects, i.e. so-called "Dual Conduit System"; this system is similar to a high-pressure air-water system}

U F24F 3/048 • • with temperature control at constant rate of air-flow (F24F 3/056 takes precedence)

U F24F 3/052 • • • Multiple duct systems, e.g. systems in which hot and cold air are supplied by separate circuits from the central station to mixing chambers in the spaces to be conditioned

F24F 3/0522 • • • • {in which warm or cold air from the central station is delivered via individual pipes to mixing chambers in the space to be treated, the cold air/warm air ratio being controlled by a thermostat in the space concerned, i.e. so-called Dual-duct System}

F24F 3/0527 • • • • {in which treated air having differing temperatures is conducted through independent conduits from the central station to various spaces to be treated, i.e. so-called "multi-Zone" system; (F24F 3/0525 takes precedence)}

U F24F 3/06 • characterised by the arrangements for the supply of heat-exchange fluid for the subsequent treatment of primary air in the room units (F24F 3/02 takes precedence {Arrangement or assembly of components for the regulation of the supply of heating or cooling media for the secondary treatment of air F24F 11/06})

F24F 3/08 • • with separate supply and return lines for hot and cold heat-exchange fluids {i.e. so-called "4-conduit" system}

F24F 3/10 • • with separate supply lines and common return line for hot and cold heat-exchange fluids {i.e. so-called "3-conduit" system}

Project: N/A (F27B)

U F27B 9/00 **Furnaces through which the charge is moved mechanically, e.g. of tunnel type (F27B 7/14 takes precedence); Similar furnaces in which the charge moves by gravity**

- U F27B 9/06
 - heated without contact between combustion gases and charge; electrically heated
- F27B 9/061
 - {with at least two longitudinal chambers carrying combustion gases, i.e. of the Dressler type}

Project: N/A (F41A)

- U F41A 21/00

Barrels; Gun tubes; Muzzle attachments; Barrel mounting means ([F41A 25/00](#) takes precedence; barrel attachments for firing grenades or riot-control ammunition from smallarms [F41C 27/06](#))
- F41A 21/24
 - Barrels or gun tubes with fins or ribs, e.g. for cooling ([F41G 1/42](#) takes precedence)
- U F41A 29/00

Cleaning or lubricating arrangements (injecting fluids into barrels or cartridge chambers [F41A 13/04](#); {ammunition for cleaning purposes [F42B 5/24](#)})
- F41A 29/04
 - Lubricating, oiling or greasing means, e.g. operating during use

Project: N/A (F42B)

- U F42B 5/00

Cartridge ammunition, e.g. separately-loaded propellant charges (shotgun ammunition [F42B 7/00](#); practice or training ammunition [F42B 8/00](#); missiles therefor [F42B 12/00](#), [F42B 14/00](#), [F42B 15/00](#))
- U F42B 5/02
 - Cartridges, i.e. cases with charge and missile
- U F42B 5/145
 - • for dispensing gases, vapours, powders, particles or chemically-reactive substances (from projectiles [F42B 12/46](#))
- F42B 5/15
 - • • for creating a screening or decoy effect, e.g. using radar chaff or infra-red flares [F42B 4/26](#)

Project: RP0409 (G01B)

- U G01B 11/00

Measuring arrangements characterised by the use of optical means (instruments of the types covered by group [G01B 9/00](#) per se [G01B 9/00](#))
- U G01B 11/24
 - for measuring contours or curvatures
- G01B 11/25
 - • by projecting a pattern, e.g. {one or more lines,} ~~moirè~~ [moiré](#) fringes on the object ([G01B 11/255](#) takes precedence; image analysis for depth or shape recovery ~~G06T 7/0051~~ [G06T 7/50](#))

Project: N/A (G01B)

- G01B 11/254
 - • • {Projection of a pattern, viewing through a pattern, e.g. ~~moirè~~ [moiré](#)}

Project: N/A (G01D)

- U G01D 15/00

Component parts of recorders for measuring arrangements not specially adapted for a specific variable
- G01D 15/16
 - Recording elements transferring recording material, e.g. ink, to the recording surface (printing recording elements [G01D 15/20](#); implements for writing or drawing in general [B43K](#))

Project: N/A (G01N)

- U G01N 1/00

Sampling; Preparing specimens for investigation
- U G01N 1/28
 - Preparing specimens for investigation {including physical details of (bio-)chemical methods covered elsewhere, e.g. [G01N 33/50](#), [C12Q](#)} (mounting specimens on microscopic slides [G02B 21/34](#); means for supporting the objects or the materials to be analysed in electron microscopes [H01J 37/20](#); {laboratory gas handling apparatus [B01L 5/00](#)})

- U G01N 1/286
 - {involving mechanical work, e.g. chopping, disintegrating, compacting, homogenising (microtomes [G01N 1/06](#); pulverising in general [B02C](#); mixing in general [B01F](#))}
- U G01N 2001/2873
 - • • {Cutting or cleaving}
- G01N 2001/2886
 - • • • {Laser cutting, e.g. [tissue catapult](#)}
- U **G01N 15/00**

Investigating characteristics of particles; Investigating permeability, pore-volume, or surface-area of porous materials (identification of micro-organisms [C12Q](#))
- G01N 2015/0019
 - {Means for transferring or separating particles prior to analysis, e.g. [hoppers](#) or [particle conveyors](#)}
- U **G01N 29/00**

Investigating or analysing materials by the use of ultrasonic, sonic or infrasonic waves; Visualisation of the interior of objects by transmitting ultrasonic or sonic waves through the object ([G01N 3/00](#) - [G01N 27/00](#) take precedence; measuring or indicating of ultrasonic, sonic or infrasonic waves in general [G01H](#); systems using the reflection or reradiation of acoustic waves, e.g. acoustic imaging, [G01S 15/00](#); obtaining records by techniques analogous to photography using ultrasonic, sonic or infrasonic waves [G03B 42/06](#); {medical diagnosis by ultrasounds [A61B 8/00](#); generating or transmitting mechanical or acoustic waves [B06B](#), [G10K](#); seismic or acoustic prospecting or detecting [G01V 1/00](#))}
- U G01N 29/04
 - Analysing solids (using acoustic emission techniques [G01N 29/14](#))
- G01N 29/06
 - • Visualisation of the interior, e.g. [acoustic microscopy](#) {(medical or veterinary diagnosis using sonic waves [A61B 8/00](#); representation of acoustic wave distribution [G01H 3/125](#), [G01H 9/002](#); short-range imaging systems using reflection of acoustic waves [G01S 15/8906](#))}
- U **G01N 2400/00**

Assays, e.g. immunoassays or enzyme assays, involving carbohydrates
- U G01N 2400/10
 - Polysaccharides, i.e. having more than five saccharide radicals attached to each other by glycosidic linkages; Derivatives thereof, e.g. ethers, esters
- U G01N 2400/12
 - • Homoglycans, i.e. polysaccharides having a main chain consisting of one single sugar
- G01N 2400/14
 - • • alpha-D-Glucans, i.e. [having alpha 1,n \(n=3,4,6\) linkages](#) between saccharide units, e.g. [pullulan](#)

Project: RP0335 (G01R)

- M 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 superconductive properties [G01R 33/1238](#) [G01R 4/06](#); {measuring superconductive properties [G01R 33/1238](#) - ;} testing or measuring semiconductors or solid state devices during manufacture [H01L 22/00](#)}; 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 line transmission systems [H04B 3/46](#) receivers [H04B 17/00](#)}~~)

Project: N/A (G01R)

- U G01R 31/08
 - Locating faults in cables, transmission lines, or networks (emergency protective circuit arrangements [H02H](#) {installing, maintaining, repairing or dismantling electric cables or lines [H02G 1/00](#); testing LAN's [H04L 12/2697](#))}
- U G01R 31/081
 - • {according to type of conductors}

- G01R 31/085 • • • {in power transmission or distribution lines, ~~e.g. overhead~~ e.g. overhead}

Project: RP0335 (G01R)

- M G01R 31/26 • Testing of individual semiconductor devices (testing or measuring during manufacture or treatment {[H01L 22/00](#)}; testing of photovoltaic devices [H02S 50/10](#))
- M G01R 31/40 • Testing power supplies (testing photovoltaic devices [H02S 50/10](#) {- comparing current or voltage with a reference level in AC or DC supplies G01R 19/16538})

Project: N/A (G02B)

- U G02B 27/00 Other optical systems; Other optical apparatus (means for bringing about special optical effects in shop-windows, show-cases [A47F](#), e.g. [A47F 11/06](#); optical toys [A63H 33/22](#); designs or pictures characterised by special light effects [B44F 1/00](#))
- G02B 27/60 • Systems using ~~moirè~~ [moiré](#) fringes (means for converting the output of a sensing member using diffraction gratings [G01D 5/38](#))

Project: N/A (G02F)

- U G02F 1/00 Devices or arrangements for the control of the intensity, colour, phase, polarisation or direction of light arriving from an independent light source, e.g. switching, gating, or modulating; Non-linear optics (thermometers using change of colour or translucency [G01K 11/12](#); using changes in fluorescence [G01K 11/32](#); light guide devices [G02B 6/00](#); optical devices or arrangements using movable or deformable elements for controlling light independent of the light source [G02B 26/00](#); control of light in general [G05D 25/00](#); visible signalling systems [G08B 5/00](#); indicating arrangements for variable information by selection or combination of individual elements [G09F 9/00](#); control arrangements or circuits for visual indicators other than cathode-ray tubes [G09G 3/00](#); control of light sources [H01S 3/10](#), [H05B 33/08](#), [H05B 35/00](#) - [H05B 43/00](#); {photochromic filters [G02B 5/23](#); optical logic elements [G02F 3/00](#)})

NOTE

This group covers only :

- devices or arrangements, e.g. cells, the optical operation of which is modified by changing the optical properties of the medium of the devices or arrangements by the influence or control of physical parameters, e.g. electric fields, electric current, magnetic fields, sound or mechanical vibrations, stress or thermal effects;
 - devices or arrangements in which the electric or magnetic field component of the light beams influences the optical properties of the medium, i.e. non-linear optics;
 - control of light by electromagnetic waves, e.g. radio waves, or by electrons or other elementary particles.
- G02F 1/29 • for the control of the position or the direction of light beams, i.e. deflection ({optical coupling means [G02B 6/26](#); optical-mechanical scanning in general [G02B 26/10](#)}; static stores with electric or magnetic read-in and optical read-out [G11C](#); lasers provided with means to change the location from which, or the direction in which, laser radiation is emitted [H01S 3/101](#))

Project: N/A (G03F)**U G03F 1/00**

Originals for photomechanical production of textured or patterned surfaces, e.g., masks, photo-masks, reticles; Mask blanks or pellicles therefor; Containers specially adapted therefor; Preparation thereof

NOTE

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

WARNING

Groups [G03F 1/0007-G03F 1/16](#) are no longer used for the classification of documents as of January 1, 2012. The backfile of these groups is being reclassified into groups [G03F 1/20-G03F 1/92](#) as follows: [G03F 1/0007-G03F 1/0092](#) and [G03F 1/08-G03F 1/16](#) into groups [G03F 1/20-G03F 1/86](#); [G03F 1/02](#) into [G03F 1/88](#); [G03F 1/04](#) into [G03F 1/90](#); [G03F 1/06](#) into [G03F 1/92](#). Until reclassification is complete, groups [G03F 1/0007-G03F 1/16](#) and [G03F 1/20-G03F 1/92](#) should be considered in order to perform a complete search.

G03F 1/62

- Pellicles, e.g. pellicle assemblies, e.g. having membrane on support frame; Preparation thereof

U G03F 5/00

Screening processes; Screens therefor {(plates or light sensitive layers with incorporated screen [G03F 7/004](#))}

G03F 5/22

- combining several screens; Elimination of [moirèmoiré](#)

Project: N/A (G03G)**U G03G 2215/00**

Apparatus for electrophotographic processes (not used)

U G03G 2215/00362

- relating to the copy medium handling (not used)

U G03G 2215/00789

- • Adding properties or qualities to the copy medium

G03G 2215/00797

- • • Printing device, i.e. annotation

Project: N/A (G03H)

G03H

HOLOGRAPHIC PROCESSES OR APPARATUS (holograms, e.g. point holograms, used as ordinary optical elements [G02B 5/32](#); producing stereoscopic or other three-dimensional effects [G02B 27/22](#); diffraction-grating systems [G02B 27/44](#); systems using [moirèmoiré](#) fringes [G02B 27/60](#); optical logic elements [G02F 3/00](#); stereo-photography [G03B 35/00](#); photosensitive materials or processes for photographic purposes [G03C](#); {stereo-photographic or similar processes [G03C 9/00](#)}; apparatus for processing exposed photographic materials [G03D](#); analogue computers performing mathematical operations with the aid of optical elements [G06E 3/00](#); authentication by radiation, of concealed information carried by holograms or diffraction gratings [G06K 19/16](#); holographic storage [G11B 7/0065](#), [G11C 13/04](#); {stereoscopic or other three dimensional effects in television systems [H04N 13/00](#)})

NOTE

This subclass covers means for producing a record of the phase and amplitude information of a wave-front, which information can be used to reconstruct the original wave-front, or means to reconstruct the original wave-front from a record containing the phase and amplitude information of the wave-front.

Project: N/A (G04B)

- U G04B 45/00** Time pieces of which the indicating means or cases provoke special effects, e.g. aesthetic effects (ornamental shaping of dials [G04B 19/10](#)) {(lubrication of clockwork bearings [G04B 31/008](#); special effects and pictures in general [B44F](#))}
- G04B 45/0023 · {Inscriptions or pictures moved by the clockwork, ~~e.g. for~~ *e.g. for* advertising (clocks with abrupt time indication [G04B 13/00](#); disc-shaped indicating elements [G04B 19/046](#), [G04B 19/202](#); advertising in general [G09F](#))}

Project: N/A (G04D)

- U G04D 3/00** Watchmakers' or watch-repairers' machines or tools for working materials {(metal working in general class [B23](#))}
- U G04D 3/0074 · {for treatment of the material, e.g. surface treatment}
- G04D 3/0087 · · {for components of the escapement mechanism, e.g. lever escapement, escape wheel}

Project: RP0409 (G05D)

- U G05D 1/00** Control of position, course or altitude of land, water, air, or space vehicles, e.g. automatic pilot (steering applicable only to other than landborne vehicles, e.g. three-dimensional steering applicable to both aircraft and submarines [B60K](#); construction or disposition of steering means on land vehicles [B62](#), on waterborne vessels [B63](#); manual or automatic control of aircraft, e.g. using automatic pilot or radiated signal [B64C](#); radio navigation systems or analogous systems using other waves [G01S](#))
- U G05D 1/02 · Control of position or course in two dimensions
- U G05D 1/021 · · {specially adapted to land vehicles}

NOTES

1. This group covers control of position or course in two dimensions specially adapted for land vehicles, i.e. control systems to define a trajectory for a land vehicle, and to take suitable actions to make the vehicle follow said trajectory.

2. Relationships with other classification places.

Subclass [G01C](#) covers navigation in general, i.e. determining the position and course of land vehicles, ships, aircraft, and space vehicles.

Subclass [G01S](#) covers radio, sonar or lidar navigation systems, i.e. navigation by use of radio, acoustic or optical waves, or analogue arrangements using other electromagnetic waves.

Subclass [G08G](#) covers navigation systems for traffic control purposes, i.e. systems in which the navigation is not performed autonomously by or in the vehicle, but where the vehicles are guided by instructions transmitted to them.

Aspects of navigation systems that are important per se should also be classified in the relevant groups of [G01C](#) (see for example list under "Informative References" below).

Aspects of radio, sonar or lidar navigation systems that are important per se should also be classified in the relevant groups of [G01S](#) (see for example list under "Informative References" below).

Aspects of navigation systems for traffic purposes that are important per se should also be classified in the relevant groups of [G08G](#) (see for example list under "Informative References" below).

3. Informative References.

Attention is drawn to the following places, which could be of interest for search:

- navigation, i.e. determining the position and course of land vehicles, ships, aircraft, and space vehicles [G01C 21/00](#)

- measuring distance traversed on the ground by vehicles, e.g. using odometers [G01C 22/00](#)
 - position-fixing by co-ordinating a plurality of determinations of direction or position lines [G01S 5/00](#)
 - determining distance or velocity using waves and not using reflection or reradiation of waves [G01S 11/00](#)
 - radar systems specially designed for traffic control [G01S 13/91](#)
 - radar systems specially designed for for anti-collision purposes [G01S 13/93](#)
 - sonar systems specially designed for for anti-collision purposes [G01S 15/93](#)
 - lidar systems specially designed for for anti-collision purposes [G01S 17/93](#)
 - traffic control systems for road vehicles [G08G 1/00](#)
 - monitoring the location of fleet of vehicles in traffic control systems [G08G 1/127](#)
 - anti-collision traffic control systems [G08G 1/16](#)
- U G05D 1/0231 . . . {using optical position detecting means (position-fixing by using electromagnetic waves other than radio waves, e.g. optical position detecting means [G01S 5/16](#))}
- U G05D 1/0246 {using a video camera in combination with image processing means (image data processing in general [G06T](#) ; video signal coding and transmission [H04N](#))}
- G05D 1/0251 {extracting 3D information from a plurality of images taken from different locations, e.g. stereo vision (stereoscopic image analysis [H04N 13/00](#); depth recovery from images [G06T 7/0075](#)[G06T 7/593](#))}
- G05D 1/0253 {extracting relative motion information from a plurality of images taken successively, e.g. visual odometry, optical flow (determining position or orientation from images [G06T 7/004](#)[G06T 7/70](#))}

Project: N/A (G06F)

- U G06F 9/00 **Arrangements for programme control, e.g. control unit (programme control for peripheral devices [G06F 13/10](#); in regulating or control systems [G05B](#))**
- U G06F 9/06 . using stored programme, i.e. using internal store of processing equipment to receive and retain programme
- U G06F 9/44 . . Arrangements for executing specific programmes
- U G06F 9/455 . . . Emulation; Software simulation {, i.e. virtualisation or emulation of application or operating system execution engines (instruction translation at instruction execution time [G06F 9/3017](#); multiprogramming in general [G06F 9/46](#); logical partitioning of resources or management or configuration of virtualized resources [G06F 9/5077](#); in-circuit emulation [G06F 11/3652](#); environments for testing or debugging software [G06F 11/3664](#))}
- G06F 9/45504 {Abstract machines for programme code execution, e.g. Java virtual machine [JVM], interpreters, emulators}

Project: RP0409 (G06F)

- 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](#))}

- U 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 19/00](#); selective content distribution, e.g. interactive television, video on demand [H04N 21/00](#))}
- U G06F 17/30784
 - {using features automatically derived from the video content, e.g. descriptors, fingerprints, signatures, genre (recognising video content [G06K 9/00711](#); extraction of features or characteristics for pattern recognition of the image [G06K 9/46](#))}
- U G06F 17/30799
 - {using low-level visual features of the video content (methods for preprocessing an image in order to extract features of a pattern to be recognized [G06K 9/46](#); image processing involving image features extraction in general [G06T](#))}
- G06F 17/30802
 - {using colour or luminescence (colour analysis on image data [G06T 7/408](#) [G06T 7/90](#))}
- G06F 17/30805
 - {using shape ([G06F 17/3079](#) takes precedence; segmentation or edge detection on image data [G06T 7/0079](#) [G06T 7/10](#); analysis of geometric attributes on image data [G06T 7/60](#))}
- G06F 17/30808
 - {using texture ([G06F 17/3079](#) takes precedence; texture analysis on image data [G06T 7/401](#) [G06T 7/41](#), [G06T 7/407](#) [G06T 7/49](#))}

Project: N/A (G06F)

- U G06F 17/50
 - Computer-aided design
- G06F 17/5068
 - {Physical circuit design, e.g. layout for integrated circuits or printed circuit boards}
- U **G06F 2207/00**
Indexing scheme relating to methods or arrangements for processing data by operating upon the order or content of the data handled
- U G06F 2207/506
 - Indexing scheme relating to groups [G06F 7/506](#) - [G06F 7/508](#)
- G06F 2207/5063
 - 2-input gates, i.e. only using 2-input logical gates, e.g. binary carry look-ahead, e.g. Kogge-Stone or Ladner-Fischer adder

Project: RP0409 (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](#))}

NOTES

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](#) - [G06K 9/00852](#). The CPC subgroups in the range [G06K 9/00006](#) - [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 9/00127
 - {Acquiring and recognising microscopic objects, e.g. biological cells and cellular parts (apparatus for measuring microbiological properties [C12M 1/34](#); optical analysis of chemical or physical properties of particles, e.g. investigation of dimensions [G01N 15/14](#); biomedical image inspection [G06T 7/0012](#))}
- G06K 9/0014
 - • {Pre-processing, e.g. image segmentation (segmentation for general image processing [G06T 7/0079](#)[G06T 7/10](#)); Feature extraction}
- G06K 9/00201
 - {Recognising three-dimensional objects, e.g. using range or tactile information (arrangements for measuring depth [G01B 11/22](#), for measuring curvatures [G01B 11/24](#); processing image data for depth or shape recovery [G06T 7/0051](#)[G06T 7/50](#); registration of range data [G06T 7/0024](#)[G06T 7/30](#))}
- U G06K 9/00221
 - {Acquiring or recognising human faces, facial parts, facial sketches, facial expressions}
- U G06K 9/00228
 - • {Detection; Localisation; Normalisation}
- G06K 9/00234
 - • • {using pixel segmentation or colour matching (segmentation for general image processing [G06T 7/0079](#)[G06T 7/10](#); colour analysis [G06T 7/408](#)[G06T 7/90](#))}
- G06K 9/00362
 - {Recognising human body or animal bodies, e.g. vehicle occupant, pedestrian; Recognising body parts, e.g. hand (passenger detection systems [B60N 2/002](#); handprints [G06K 9/00006](#); face and facial components [G06K 9/00221](#); eyes [G06K 9/00597](#); determining position of passenger [G06T 7/004](#)[G06T 7/70](#))}
- 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 9/0063
 - • {Recognising patterns in remote scenes, e.g. aerial images, vegetation versus urban areas (radar and similar technologies [G01S](#); segmentation for general image processing [G06T 7/0079](#)[G06T 7/10](#))}
- U 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 [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](#))}
- G06K 9/00744
 - • • {Extracting features from the video content, e.g. video "fingerprints", or characteristics, e.g. by automatic extraction of representative shots or key frames (segmentation for general image processing [G06T 7/0079](#)[G06T 7/10](#); use of extracted content features in video information retrieval [G06F 17/30784](#); automated annotation of image based on image contents [G06K 9/00671](#); determination of region of interest for recognition [G06K 9/3233](#); extraction of image features or characteristics [G06K 9/46](#); ~~determining representative patterns~~ [G06K 9/6255](#); ~~determining representative patterns~~ [G06K 9/6255](#))}
- G06K 9/00758
 - • • {Matching video sequences (aligning the image field [G06K 9/32](#); image matching techniques [G06K 9/00201](#), [G06K 9/62](#); registration of image sequences [G06T 7/0038](#)[G06T 7/38](#))}

- G06K 9/00765
 - • • {Segmenting video sequences, i.e. computational techniques such as parsing or cutting the sequence, low-level clustering or determining units such as shots and scenes (segmentation of touching or overlapping patterns in the image field [G06K 9/34](#); segmentation for general image processing [G06T 7/0079](#)[G06T 7/10](#); segmentation of an image based on motion information [G06T 7/2006](#)[G06T 7/215](#); picture signal circuitry for scene change detection [H04N 5/147](#))}
 - U G06K 9/20
 - Image acquisition
 - U G06K 9/32
 - Aligning or centering of the image pick-up or image-field
 - G06K 9/3233
 - • • {Determination of region of interest (segmentation for general image processing [G06T 7/0079](#)[G06T 7/10](#))}
 - G06K 9/3275
 - • • {Inclination (skew) detection or correction of characters or of image to be recognised (determining orientation of objects in general [G06T 7/004](#)[G06T 7/70](#))}
 - G06K 9/34
 - • Segmentation of touching or overlapping patterns in the image field {(segmentation by quantisation, e.g. thresholding, [G06K 9/38](#); edge detection for image feature extraction [G06K 9/4604](#); extraction of connected components or edge linking [G06K 9/4638](#); segmentation or edge detection for general image processing [G06T 7/0079](#)[G06T 7/10](#))}
 - G06K 9/342
 - • • {Cutting or merging image elements, e.g. region growing, watershed, clustering-based techniques (smoothing or thinning of patterns [G06K 9/44](#); clustering techniques [G06K 9/6218](#); region-based segmentation for general image processing [G06T 7/0081](#)[G06T 7/11](#))}
 - 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](#) - [G06K 9/54](#)
- G06K 9/38
 - • Quantising the analogue image signal {, e.g. histogram thresholding for discrimination between background and foreground patterns (region-based segmentation of touching or overlapping patterns [G06K 9/342](#); image segmentation for general image processing [G06T 7/0081](#)[G06T 7/11](#))}
 - 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](#)[G06T 7/10](#))}
 - 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](#)[G06T 7/12](#); edge detection for general image processing [G06T 7/0085](#)[G06T 7/13](#))}
 - 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 [G06K 9/6215](#); segmentation involving probabilistic approaches for general image processing [G06T 7/0087](#)[G06T 7/143](#))}
 - G06K 9/4652
 - • • {related to colour ([G06K 9/4671](#) takes precedence; colour-based face detection [G06K 9/00234](#); colour analysis in general [G06T 7/408](#)[G06T 7/90](#); region-based segmentation for general image processing [G06T 7/0081](#)[G06T 7/11](#); colour conversion and processing [H04N 1/46](#); coding colour pictures signals using a reduced set of representative colours [H04N 1/644](#))}

- G06K 9/4661
 - • • {related to illumination properties, e.g. according to a reflectance or lighting model (depth from shading [G06T 7/0053](#) [G06T 7/507](#); image rendering with lighting effects [G06T 15/50](#))}
- U G06K 9/52
 - • • by deriving mathematical or geometrical properties from the whole image
- G06K 9/525
 - • • {Computation of moments (moments not relevant for pattern recognition [G06T 7/606](#) [G06T 7/66](#))}
- 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 9/6201
 - • {Matching; Proximity measures}
- G06K 9/6202
 - • • {Comparing pixel values or logical combinations thereof, or feature values having positional relevance, e.g. template matching (specially adapted for image alignment [G06T 7/0024](#) [G06T 7/30](#); specially adapted for position determination [G06T 7/004](#) [G06T 7/70](#); specially adapted for the calculation of depth from stereo images [G06T 7/0051](#) [G06T 7/50](#), specially adapted for image segmentation [G06T 7/0079](#), specially adapted for image segmentation [G06T 7/10](#); specially adapted for the analysis of motion [G06T 7/20](#))}
- U G06K 9/6203
 - • • {Shifting or otherwise transforming the patterns to accommodate for positional errors}
- G06K 9/6206
 - • • • {involving a deformation of the sample or reference pattern; Elastic matching (segmentation of touching or overlapping patterns involving deformable models [G06K 9/34](#); segmentation involving deformable models for general image processing [G06T 7/0089](#) [G06T 7/149](#))}
- 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 9/6218
 - • • {Clustering techniques}
- U G06K 9/622
 - • • • {Non-hierarchical partitioning techniques}
- G06K 9/6224
 - • • • {based on graph theory, e.g. Minimum Spanning Trees [MST], graph cuts, spectral clustering techniques (segmentation of touching or overlapping patterns involving graph-based approaches [G06K 9/342](#); graph embedding [G06K 9/6252](#); segmentation involving graph-based approaches for general image processing [G06T 7/0093](#) [G06T 7/162](#))}
- U G06K 9/6267
 - • {Classification techniques}
- U G06K 9/6268
 - • • {relating to the classification paradigm, e.g. parametric or non-parametric approaches}
- G06K 9/6277
 - • • • {based on a parametric (probabilistic) model, e.g. based on Neyman-Pearson lemma, likelihood ratio, Receiver Operating Characteristic [ROC] curve plotting a False Acceptance Rate [FAR] versus a False Reject Rate [FRR] (segmentation of touching or overlapping patterns involving probabilistic approaches [G06K 9/34](#); image connectivity analysis involving probabilistic approaches, e.g. Markov Random Fields techniques, [G06K 9/4638](#); segmentation involving probabilistic approaches for general image processing [G06T 7/0087](#) [G06T 7/143](#))}
- U G06K 9/6296
 - • {Graphical models, e.g. Bayesian networks (probabilistic networks *per se* [G06N 7/005](#))}

G06K 9/6297

- • • {Markov models and related models, e.g. semi-Markov models; Markov random fields; networks embedding Markov models (segmentation of touching or overlapping patterns involving probabilistic approaches [G06K 9/34](#); image connectivity analysis involving probabilistic approaches, e.g. Markov Random Fields, [G06K 9/4638](#); application of Markov models to acoustic speech recognition [G10L 15/00](#); segmentation involving probabilistic approaches for general image processing [G06T 7/0087](#) [G06T 7/143](#))}

Project: N/A (G06K)**U G06K 19/00**

Record carriers for use with machines and with at least a part designed to carry digital markings (record carriers adapted for controlling specific machines, see the appropriate subclass for the machine, e.g. [B23Q](#), [D03C](#), [G10F](#), [H04L](#); form printing [B41](#); file cards [B42F 19/00](#); record carriers in general [G11](#))

U G06K 19/06

- characterised by the kind of the digital marking, e.g. shape, nature, code

U G06K 19/08

- • using markings of different kinds {or more than one marking of the same kind} in the same record carrier, e.g. one marking being sensed by optical and the other by magnetic means

U G06K 19/10

- • • at least one kind of marking being used for authentication, e.g. of credit or identity cards ({identification cards not to be read by a machine [B42D 25/00](#); } verification of coded identity or credit cards in mechanisms actuated by them [G07F 7/12](#) {; printed identity or similar identification-bearing cards not for use with a machine [B42D 25/00](#))}

U G06K 19/14

- • • • the marking being sensed by radiation

G06K 19/145

- • • • {at least one of the further markings being adapted for galvanic or wireless sensing, e.g. an RFID tag with both a wireless and an optical interface or memory, or a contact type smart card with ISO 7816 contacts and an optical interface or memory}

Project: RP0409 (G06T)**M G06T**

IMAGE DATA PROCESSING OR GENERATION, IN GENERAL (~~specially adapted for particular applications, see the relevant subclasses, e.g. [G06K](#), [G09G](#), [H04N](#)~~)

NOTES1. This subclass covers:

- arrangements for geometrically modelling objects, whether the final model is used for display of an image of the object or for some other purpose, such as manufacture of a corresponding object;
- arrangements for analysing the geometric attributes of an image of an object.

2. This subclass does not cover:

- reading or recognising printed or written characters or recognising patterns, e.g. fingerprints, which is covered by subclass [G06K](#);
- modification of image data to allow display using multiple viewports, which is covered by subclass [G09G](#);
- circuits for generating functions for visual indicators, which are covered by subclass [G09G](#);
- scanning of documents or the like in pictorial communication, which is covered by subclass [H04N](#).

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:

G06T 1/40

covered by

[G06T 1/20](#)

M G06T 7/00

Image analysis, e.g. from bit-mapped to non bit-mapped

- M G06T 7/0002 · {Inspection of images, e.g. flaw detection (~~G06T 7/004 takes precedence~~)}
- U G06T 7/0004 · · {Industrial image inspection}
- M G06T 7/001 · · · {using an image reference approach (~~image matching for pattern recognition or image matching in general G06K 9/6203~~)}
- U G06T 7/0012 · · {Biomedical image inspection}
- M G06T 7/0014 · · · {using an image reference approach (~~image matching for pattern recognition or image matching in general G06K 9/6203~~)}
- M G06T 7/0016 · · · · {involving temporal comparison (~~change detection in general G06T 7/20~~)}
- D G06T 7/0018 · {Camera calibration, e.g. determining intrinsic or extrinsic parameters}
<administratively transferred to [G06T 7/80](#)>
- D G06T 7/002 · · {Stereo camera calibration, e.g. determination of the transformation between left camera coordinate system and right camera coordinate system}
<administratively transferred to [G06T 7/85](#)>
- D G06T 7/0022 · {Determining parameters from multiple pictures (depth or shape from stereo images G06T 7/0075; depth or shape from multiple images G06T 7/0065; stereo camera calibration G06T 7/002)}
<administratively transferred to [G06T 7/97](#)>
- D G06T 7/0024 · · {Registration of images, e.g. alignment of images (~~image matching for pattern recognition or image matching in general G06K 9/6203~~)}
<administratively transferred to [G06T 7/30](#)>
- D G06T 7/0026 · · · {using correlation-based methods}
<administratively transferred to [G06T 7/32](#)>
- D G06T 7/0028 · · · {using feature-based methods}
<administratively transferred to [G06T 7/33](#)>
- D G06T 7/003 · · · · {involving reference images or patches (~~image matching for pattern recognition or image matching in general G06K 9/6203~~)}
<administratively transferred to [G06T 7/337](#)>
- D G06T 7/0032 · · · · {involving models (model matching for pattern recognition G06K 9/6204; G06K 9/6878)}
<administratively transferred to [G06T 7/344](#)>
- D G06T 7/0034 · · · {using statistical methods (~~image matching by comparing statistics of regions for pattern recognition G06K 9/6212~~)}
<administratively transferred to [G06T 7/35](#)>
- D G06T 7/0036 · · · {using transform-domain based approaches}
<administratively transferred to [G06T 7/37](#)>
- D G06T 7/0038 · · · {Registration of image sequences}
<administratively transferred to [G06T 7/38](#)>
- D G06T 7/004 · {Determining position or orientation of objects}
<administratively transferred to [G06T 7/70](#)>
- D G06T 7/0042 · · {using feature-based methods}
<administratively transferred to [G06T 7/73](#)>
- D G06T 7/0044 · · · {involving reference images or patches (~~image matching for pattern recognition or image matching in general G06K 9/6203~~)}
<administratively transferred to [G06T 7/74](#)>
- D G06T 7/0046 · · · {involving models (model matching for pattern recognition G06K 9/6204; G06K 9/6878)}
<administratively transferred to [G06T 7/75](#)>

- D G06T 7/0048
 - {using statistical methods (image matching by comparing statistics of regions for pattern recognition G06K 9/6212)}
 - <administratively transferred to [G06T 7/77](#)>
- D G06T 7/0051
 - {Depth or shape recovery}
 - <administratively transferred to [G06T 7/50](#)>
- D G06T 7/0053
 - {from shading}
 - <administratively transferred to [G06T 7/507](#)>
- D G06T 7/0055
 - {from specularities}
 - <administratively transferred to [G06T 7/514](#)>
- D G06T 7/0057
 - {from laser ranging and structured images, e.g. interferometry (image acquisition and arrangements for measuring contours or curvatures of an object by projecting a pattern, thereupon G01B 11/25)}
 - <administratively transferred to [G06T 7/521](#)>
- D G06T 7/0059
 - {from texture}
 - <administratively transferred to [G06T 7/529](#)>
- D G06T 7/0061
 - {from perspective effects, e.g. using vanishing points}
 - <administratively transferred to [G06T 7/536](#)>
- D G06T 7/0063
 - {from line drawings}
 - <administratively transferred to [G06T 7/543](#)>
- D G06T 7/0065
 - {from multiple images}
 - <administratively transferred to [G06T 7/55](#)>
- D G06T 7/0067
 - • {from contours}
 - <administratively transferred to [G06T 7/564](#)>
- D G06T 7/0069
 - • {from focus}
 - <administratively transferred to [G06T 7/571](#)>
- D G06T 7/0071
 - • {from motion}
 - <administratively transferred to [G06T 7/579](#)>
- D G06T 7/0073
 - • {from multiple light sources, e.g. photometric stereo}
 - <administratively transferred to [G06T 7/586](#)>
- D G06T 7/0075
 - • {from stereo images}
 - <administratively transferred to [G06T 7/593](#)>
- D G06T 7/0077
 - • • {from three or more stereo images}
 - <administratively transferred to [G06T 7/596](#)>
- D G06T 7/0079
 - {Segmentation or edge detection (image analysis based on texture or colour features G06T 7/40; motion-based segmentation G06T 7/2006; separation of touching or overlapping patterns for pattern recognition G06K 9/34; extraction of features or characteristics of the image for pattern recognition G06K 9/46)}
 - <administratively transferred to [G06T 7/10](#)>
- D G06T 7/0081
 - {Region-based segmentation (image analysis based on texture or colour features G06T 7/40; separation of touching or overlapping patterns by cutting or merging for pattern recognition G06K 9/342; quantising the analogue image signal for pattern recognition G06K 9/38; extraction of features or characteristics of the image related to colour for pattern recognition G06K 9/4652)}
 - <administratively transferred to [G06T 7/11](#)>
- D G06T 7/0083
 - {Edge-based segmentation (detecting partial patterns or configurations G06K 9/4604)}
 - <administratively transferred to [G06T 7/12](#)>
- D G06T 7/0085
 - {Edge detection (detecting partial patterns or configurations G06K 9/4604)}
 - <administratively transferred to [G06T 7/13](#)>

- D G06T 7/0087
- {involving probabilistic approaches, e.g. Markov Random Field [MRF] modeling (Markov models or related models or networks embedding Markov models for pattern recognition G06K 9/6297; classification techniques based on a parametric, e.g. probabilistic, model G06K 9/6277; detecting partial patterns or configurations by analysing connectivity relationship of elements of the pattern G06K 9/4638)}
 - <administratively transferred to [G06T 7/143](#)>
- D G06T 7/0089
- {involving deformable models, e.g. active contour (pattern recognition techniques involving a deformation of the sample or reference pattern or elastic matching G06K 9/6206)}
 - <administratively transferred to [G06T 7/149](#)>
- D G06T 7/0091
- {involving morphological operators (combinations of preprocessing functions using a local operator for pattern recognition G06K 9/56)}
 - <administratively transferred to [G06T 7/155](#)>
- D G06T 7/0093
- {involving graph-based approaches (non-hierarchical partitioning techniques based on graph theory for pattern recognition G06K 9/6224)}
 - <administratively transferred to [G06T 7/162](#)>
- D G06T 7/0095
- {involving transform domain approaches (detecting partial patterns, e.g. edges or contours, using the Hough transform for pattern recognition G06K 9/4633)}
 - <administratively transferred to [G06T 7/168](#)>
- D G06T 7/0097
- {involving the use of two or more images}
 - <administratively transferred to [G06T 7/174](#)>
- N G06T 7/10
- Segmentation; Edge detection (motion-based segmentation [G06T 7/215](#))
- NOTE
- In this group, multi-aspect classification is applied, so that subject matter characterised by aspects covered by groups [G06T 7/11](#), [G06T 7/12](#) or [G06T 7/13](#) should also be classified in any of the relevant groups [G06T 7/136](#) - [G06T 7/194](#).*
- N G06T 7/11
- Region-based segmentation
- N G06T 7/12
- Edge-based segmentation
- N G06T 7/13
- Edge detection
- N G06T 7/136
- involving thresholding
- N G06T 7/143
- involving probabilistic approaches, e.g. Markov random field [MRF] modelling
- N G06T 7/149
- involving deformable models, e.g. active contour models
- N G06T 7/155
- involving morphological operators
- N G06T 7/162
- involving graph-based methods
- N G06T 7/168
- involving transform domain methods
- N G06T 7/174
- involving the use of two or more images
- N G06T 7/181
- involving edge growing; involving edge linking
- N G06T 7/187
- involving region growing; involving region merging; involving connected component labelling
- N G06T 7/194
- involving foreground-background segmentation
- M G06T 7/20
- Analysis of motion {(movement detection in television systems H04N 5/144; motion estimation for *coding, decoding, compressing or decompressing* digital video *signal-compression signals* H04N 19/43, H04N 19/51; recognizing scenes under surveillance and traffic patterns G06K 9/00771, G06K 9/00785)}
- D G06T 7/2006
- {Motion-based segmentation}
 - <administratively transferred to [G06T 7/215](#)>

D	G06T 7/2013	<ul style="list-style-type: none"> • {using block-matching} <administratively transferred to G06T 7/223>
D	G06T 7/202	<ul style="list-style-type: none"> • • {using full search} <administratively transferred to G06T 7/231>
D	G06T 7/2026	<ul style="list-style-type: none"> • • {using non-full search, e.g. three-step search} <administratively transferred to G06T 7/238>
D	G06T 7/2033	<ul style="list-style-type: none"> • {using feature-based methods, e.g. corners, segments} <administratively transferred to G06T 7/246>
D	G06T 7/204	<ul style="list-style-type: none"> • • {involving reference images or patches (image matching for pattern recognition or image matching in general G06K 9/6203)} <administratively transferred to G06T 7/248>
D	G06T 7/2046	<ul style="list-style-type: none"> • • {involving models (model matching for pattern recognition G06K 9/6204, G06K 9/6878)} <administratively transferred to G06T 7/251>
D	G06T 7/2053	<ul style="list-style-type: none"> • {involving subtraction of pictures} <administratively transferred to G06T 7/254>
D	G06T 7/206	<ul style="list-style-type: none"> • {using transform domain based approaches, e.g. Fourier} <administratively transferred to G06T 7/262>
D	G06T 7/2066	<ul style="list-style-type: none"> • {using gradient-based methods} <administratively transferred to G06T 7/269>
N	G06T 7/207	<ul style="list-style-type: none"> • for motion estimation over a hierarchy of resolutions (multi-resolution motion estimation or hierarchical motion estimation for coding, decoding, compressing or decompressing digital video signals H04N 19/53)
D	G06T 7/2073	<ul style="list-style-type: none"> • {Motion estimation over a hierarchy of resolutions} <administratively transferred to G06T 7/207>
D	G06T 7/208	<ul style="list-style-type: none"> • {involving a stochastic approach, e.g. Kalman filter} <administratively transferred to G06T 7/277>
D	G06T 7/2086	<ul style="list-style-type: none"> • {Computing motion from a sequence of stereo images} <administratively transferred to G06T 7/285>
D	G06T 7/2093	<ul style="list-style-type: none"> • {Multi-camera tracking} <administratively transferred to G06T 7/292>
N	G06T 7/215	<ul style="list-style-type: none"> • Motion-based segmentation
N	G06T 7/223	<ul style="list-style-type: none"> • using block-matching
N	G06T 7/231	<ul style="list-style-type: none"> • • using full search
N	G06T 7/238	<ul style="list-style-type: none"> • • using non-full search, e.g. three-step search
N	G06T 7/246	<ul style="list-style-type: none"> • using feature-based methods, e.g. the tracking of corners or segments
N	G06T 7/248	<ul style="list-style-type: none"> • • {involving reference images or patches}
N	G06T 7/251	<ul style="list-style-type: none"> • • {involving models}
N	G06T 7/254	<ul style="list-style-type: none"> • involving subtraction of images
N	G06T 7/262	<ul style="list-style-type: none"> • using transform domain methods, e.g. Fourier domain methods
N	G06T 7/269	<ul style="list-style-type: none"> • using gradient-based methods
N	G06T 7/277	<ul style="list-style-type: none"> • involving stochastic approaches, e.g. using Kalman filters
N	G06T 7/285	<ul style="list-style-type: none"> • using a sequence of stereo image pairs
N	G06T 7/292	<ul style="list-style-type: none"> • Multi-camera tracking
N	G06T 7/30	<ul style="list-style-type: none"> • Determination of transform parameters for the alignment of images, i.e. image registration
N	G06T 7/32	<ul style="list-style-type: none"> • using correlation-based methods
N	G06T 7/33	<ul style="list-style-type: none"> • using feature-based methods
N	G06T 7/337	<ul style="list-style-type: none"> • • {involving reference images or patches}

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|---|------------|---|
| N | G06T 7/344 | <ul style="list-style-type: none"> • • • {involving models} |
| N | G06T 7/35 | <ul style="list-style-type: none"> • • using statistical methods |
| N | G06T 7/37 | <ul style="list-style-type: none"> • • using transform domain methods |
| N | G06T 7/38 | <ul style="list-style-type: none"> • • Registration of image sequences |
| M | G06T 7/40 | <ul style="list-style-type: none"> • Analysis of texture {(depth or shape recovery from texture G06T 7/0059G06T 7/529)} |
| D | G06T 7/401 | <ul style="list-style-type: none"> • • {based on statistical texture description} <administratively transferred to G06T 7/41> |
| D | G06T 7/402 | <ul style="list-style-type: none"> • • • {using transform-domain based approaches} <administratively transferred to G06T 7/42> |
| D | G06T 7/403 | <ul style="list-style-type: none"> • • • {using image operators, e.g. filter, edge density, local histograms} <administratively transferred to G06T 7/44> |
| D | G06T 7/404 | <ul style="list-style-type: none"> • • • {using co-occurrence matrix computation} <administratively transferred to G06T 7/45> |
| D | G06T 7/405 | <ul style="list-style-type: none"> • • • {using random Fields} <administratively transferred to G06T 7/46> |
| D | G06T 7/406 | <ul style="list-style-type: none"> • • • {using fractals} <administratively transferred to G06T 7/48> |
| D | G06T 7/407 | <ul style="list-style-type: none"> • • {based on structural texture description, i.e. primitives and placement rules} <administratively transferred to G06T 7/49> |
| D | G06T 7/408 | <ul style="list-style-type: none"> • • {Color analysis} <administratively transferred to G06T 7/90> |
| N | G06T 7/41 | <ul style="list-style-type: none"> • • based on statistical description of texture |
| N | G06T 7/42 | <ul style="list-style-type: none"> • • • using transform domain methods |
| N | G06T 7/44 | <ul style="list-style-type: none"> • • • using image operators, e.g. filters, edge density metrics or local histograms |
| N | G06T 7/45 | <ul style="list-style-type: none"> • • • using co-occurrence matrix computation |
| N | G06T 7/46 | <ul style="list-style-type: none"> • • • using random fields |
| N | G06T 7/48 | <ul style="list-style-type: none"> • • • using fractals |
| N | G06T 7/49 | <ul style="list-style-type: none"> • • based on structural texture description, e.g. using primitives or placement rules |
| N | G06T 7/50 | <ul style="list-style-type: none"> • Depth or shape recovery |
| N | G06T 7/507 | <ul style="list-style-type: none"> • • from shading (G06T 7/586 takes precedence) |
| N | G06T 7/514 | <ul style="list-style-type: none"> • • from specularities |
| N | G06T 7/521 | <ul style="list-style-type: none"> • • from laser ranging, e.g. using interferometry; from the projection of structured light |
| N | G06T 7/529 | <ul style="list-style-type: none"> • • from texture |
| N | G06T 7/536 | <ul style="list-style-type: none"> • • from perspective effects, e.g. by using vanishing points |
| N | G06T 7/543 | <ul style="list-style-type: none"> • • from line drawings |
| Q | G06T 7/55 | <ul style="list-style-type: none"> • • from multiple images |
| N | G06T 7/557 | <ul style="list-style-type: none"> • • • from light fields, e.g. from plenoptic cameras |
| N | G06T 7/564 | <ul style="list-style-type: none"> • • • from contours |
| N | G06T 7/571 | <ul style="list-style-type: none"> • • • from focus |
| N | G06T 7/579 | <ul style="list-style-type: none"> • • • from motion |
| N | G06T 7/586 | <ul style="list-style-type: none"> • • • from multiple light sources, e.g. photometric stereo |
| N | G06T 7/593 | <ul style="list-style-type: none"> • • • from stereo images |
| N | G06T 7/596 | <ul style="list-style-type: none"> • • • • {from three or more stereo images} |

M	G06T 7/60	• Analysis of geometric attributes, e.g. area, center of gravity or perimeter, from an image
D	G06T 7/602	• • {Area, perimeter, diameter or volume} <administratively transferred to G06T 7/62 >
D	G06T 7/604	• • {Convexity or concavity} <administratively transferred to G06T 7/64 >
D	G06T 7/606	• • {Center of gravity or moments (moments specific for pattern recognition, e.g. Zernike moments G06K 9/525)} <administratively transferred to G06T 7/66 >
D	G06T 7/608	• • {Symmetry} <administratively transferred to G06T 7/68 >
N	G06T 7/62	• • of area, perimeter, diameter or volume
N	G06T 7/64	• • of convexity or concavity
N	G06T 7/66	• • of image moments or centre of gravity
N	G06T 7/68	• • of symmetry
N	G06T 7/70	• Determining position or orientation of objects or cameras (camera calibration G06T 7/80)
N	G06T 7/73	• • using feature-based methods
N	G06T 7/74	• • • {involving reference images or patches}
N	G06T 7/75	• • • {involving models}
N	G06T 7/77	• • using statistical methods
N	G06T 7/80	• Analysis of captured images to determine intrinsic or extrinsic camera parameters, i.e. camera calibration
N	G06T 7/85	• • {Stereo camera calibration}
N	G06T 7/90	• Determination of colour characteristics
N	G06T 7/97	• {Determining parameters from multiple pictures (depth or shape recovery from multiple images G06T 7/55 ; stereo camera calibration G06T 7/85)}
U	G06T 2207/00	Indexing scheme for image analysis or image enhancement
U	G06T 2207/20	• Special algorithmic details
U	G06T 2207/20112	• • Image segmentation details
D	G06T 2207/20136	• • • Edge-growing; Edge-linking <administratively transferred to G06T 7/181 >
D	G06T 2207/20141	• • • Region-growing; Region-merging; Connected-component-labeling <administratively transferred to G06T 7/187 >
D	G06T 2207/20144	• • • Foreground-background-segmentation <administratively transferred to G06T 7/194 >
D	G06T 2207/20148	• • • Thresholding <administratively transferred to G06T 7/136 >

Project: N/A (G08B)

U	G08B 21/00	Alarms responsive to a single specified undesired or abnormal operating condition and not elsewhere provided for {(alarms on gas pipes F17D 3/01)}
U	G08B 21/02	• Alarms for ensuring the safety of persons
U	G08B 21/04	• • responsive to non-activity, e.g. of elderly persons (G08B 21/06 takes precedence)
U	G08B 21/0438	• • • {Sensor means for detecting}
	G08B 21/0469	• • • • {Presence detectors to detect unsafe condition, e.g. infrared e.g. infrared sensor, microphone (G08B 21/0476 takes precedence)}

Project: N/A (G10H)

- U G10H 2230/00 General physical, ergonomic or hardware implementation of electrophonic musical tools or instruments, e.g. shape or architecture**
- U G10H 2230/045 . Special instrument [spint], i.e. mimicking the ergonomics, shape, sound or other characteristic of a specific acoustic musical instrument category
- U G10H 2230/075 . . Spint stringed, i.e. mimicking stringed instrument features, electrophonic aspects of acoustic stringed musical instruments without keyboard; MIDI-like control therefor (string instrument sound synthesis [G10H 2250/441](#))
- G10H 2230/095 . . . Spint zither, i.e. mimicking any neckless stringed instrument in which the strings do not extend beyond the sounding board
- U G10H 2230/155 . . Spint wind instrument, i.e. mimicking musical wind instrument features; Electrophonic aspects of acoustic wind instruments; MIDI-like control therefor. (wind instrument sound synthesis [G10H 2250/461](#); mouth control, e.g. breath [G10H 2220/361](#); natural aerodynamic noise synthesis, e.g. wind [G10H 2250/431](#))
- U G10H 2230/205 . . . Spint reed, i.e. mimicking or emulating reed instruments, sensors or interfaces therefor
- G10H 2230/221 Spint saxophone, i.e. mimicking conical bore musical instruments with single reed mouthpiece, e.g. saxophones, electrophonic emulation or interfacing aspects therefor
- U G10H 2250/00 Aspects of algorithms or signal processing methods without intrinsic musical character, yet specifically adapted for or used in electrophonic musical processing (methods with intrinsic musical character [G10H 2210/00](#))**
- U G10H 2250/131 . Mathematical functions for musical analysis, processing, synthesis or composition (algorithms for musical processing [G10H 2250/005](#); computation of mathematical functions [G06F 17/10](#) and [G06F 7/544](#))
- U G10H 2250/215 . . Transforms, i.e. mathematical transforms into domains appropriate for musical signal processing, coding or compression
- G10H 2250/221 . . . Cosine transform; DCT [discrete cosine transform], e.g. for use in lossy audio compression such as MP3 (MP3 format [G10H 2240/061](#))
- U G10H 2250/261 . . Window, i.e. apodization function or tapering function amounting to the selection and appropriate weighting of a group of samples in a digital signal within some chosen time interval, outside of which it is zero valued
- G10H 2250/291 . . . Kaiser windows; Kaiser-Bessel Derived [KBD] windows, e.g. for MDCT

Project: N/A (G10K)

- U G10K 2210/00 Details of active noise control [ANC] covered by [G10K 11/178](#) but not provided for in any of its subgroups**
- U G10K 2210/30 . Means
- U G10K 2210/321 . . Physical
- U G10K 2210/3229 . . . Transducers
- G10K 2210/32291 Plates or thin films, e.g. PVDF (foil-type piezo-electric elements [B06B 1/0688](#))

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](#))

NOTES1. 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}

2. 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.

3. Documents concerning relative positioning or movement of transducers and record carriers are classified in groups [G11B 3/00](#) - [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 [G11B 15/1808](#), [G11B 15/1816](#), [G11B 19/00](#) and [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 [G11B 27/002](#).

4. 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.

5. "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.

6. 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:

G11B 5/65	covered by	G11B 5/64 - G11B 5/656
G11B 5/667	covered by	G11B 5/66
G11B 5/673	covered by	G11B 5/66
G11B 7/16 G11B 7/16	covered by	G11B 7/135
G11B 7/18 G11B 7/18	covered by	G11B 7/135
G11B 7/30	covered by	G11B 7/00
G11B 9/12 - G11B 9/14	covered by	G11B 9/00
G11B 11/24 - G11B 11/26	covered by	G11B 11/00
G11B 13/08	covered by	G11B

- U **G11B 7/00** **Recording or reproducing by optical means, e.g. recording using a thermal beam of optical radiation {by modifying optical properties or the physical structure}, reproducing using an optical beam at lower power {by sensing optical properties}; Record carriers therefor; ([G11B 11/00](#), [G11B 13/00](#) take precedence)**

- U G11B 7/12 • Heads, e.g. forming of the optical beam spot or modulation of the optical beam (disposition or mounting of head elements within housing or with provision for moving of light source, optical beam or detector, irrelevant to the transducing method [G11B 7/08](#); {modulating lasers [H01S 3/10](#); controlling the intensity, colour, phase, polarisation or direction of light beams arriving from an independent light source, e.g. switching gating or modulating [G02F 1/00](#)})

- U G11B 7/135 • • Means for guiding the beam from the source to the record carrier or from the record carrier to the detector

- U G11B 7/1372 • • • Lenses
- G11B 2007/13725 • • • • {Catadioptric lenses, ~~i.e. having~~ **i.e. having** at least one internal reflective surface}

- U **G11B 19/00** **Driving, starting, stopping record carriers not specifically of filamentary or web form, or of supports therefor; Control thereof; Control of operating function (guiding such record carriers [G11B 17/00](#)); {Driving both disc and head}**

- U G11B 19/02 • Control of operating function, e.g. switching from recording to reproducing
- U G11B 19/04 • • Arrangements for preventing, inhibiting, or warning against double recording on the same blank or against other recording or reproducing malfunctions
- G11B 19/048 • • • {Testing of disk drives, e.g. to detect defects or prevent sudden failure}

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

- U G11B 20/10 • Digital recording or reproducing (digital computers in which at least part of the computation is effected electrically, arrangements for handling digital data [G06F](#); transmission of digital information [H04L](#))
- U G11B 20/12 • • Formatting, e.g. arrangement of data block or words on the record carriers {(within interface between computers and data recorders [G06F 3/06](#))}
- U G11B 2020/1264 • • • {wherein the formatting concerns a specific kind of data}
- U G11B 2020/1265 • • • • {Control data, system data or management information, i.e. data used to access or process user data}
- G11B 2020/1285 • • • • • {Status of the record carrier, e.g. space bit maps, flags indicating a formatting status or a write permission}

Project: RP0400 (G11C)

- M G11C STATIC STORES (information storage based on relative movement between record carrier and transducer [G11B](#); semiconductor devices for storage [H01L](#), e.g. [H01L 27/108](#) - [H01L 27/115](#) [H01L 27/11597](#); pulse technique in general [H03K](#), e.g. electronic switches [H03K 17/00](#); {using a static store as a picture recording medium [H04N 5/907](#)})**

NOTES

1. This subclass covers devices or arrangements for storage of digital or analogue information in which no relative movement takes place between an information storage element and a transducer; which incorporate a selecting-device for writing-in or reading-out the information into or from the store
2. This subclass does not cover elements not adapted for storage and not provided with such means as referred to in Note (3) below, which elements are classified in the appropriate subclass, e.g. of [H01](#), [H03K](#).
3. In this subclass, the following terms are used with the meaning indicated:
 - "storage element" is an element which can hold at least one item of information and is provided with means for writing-in or reading-out this information;
 - "memory" is a device, including storage elements, which can hold information to be extracted when desired.

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:

G11C 8/02	covered by	G11C 8/00 , H03K 17/00
G11C 11/4193	covered by	G11C 11/00
G11C 11/4195	covered by	G11C 11/00
G11C 11/4197	covered by	G11C 11/00

Project: N/A (G12B)

G12B 5/00

Adjusting position or attitude, e.g. level, of instruments or other apparatus, or of parts thereof (levels per se [G01C 9/00](#)); Compensating for the effects of tilting or acceleration, e.g. for optical apparatus

Project: RP0399 (G21H)**G21H 5/00**

Applications of radiation from radioactive sources or arrangements therefor (producing mutation in plants [A01H 1/06](#); preservation of dairy products [A23C](#); preservation of foodstuffs [A23L 3/26](#); for therapeutic purposes [A61N 5/10](#); in chemical, physical or physicochemical processes in general [B01J 19/08](#); in electrostatic separation [B03C 3/38](#); for after-treatment of coatings applied as liquids or other fluent materials [B05D 3/06](#); for action between electric vehicles and tracked apparatus [B61L 1/10](#), [B61L 3/06](#); introducing isotopes into organic compounds [C07B 59/00](#); for preparation of organic chemical compounds [C07](#), [C08](#), e.g. [C08F 2/46](#); for treating macromolecular substances or articles made therefrom [B29C 71/04](#), [C08J 3/28](#), [C08J 7/18](#); for cracking of hydrocarbon oils [C10G 15/00](#), [C10G 32/04](#); for reforming naphtha [C10G 35/16](#); preservation or ageing of products obtained from fermentation processes [C12H 1/06](#), [C12H 1/16](#); for bleaching fibres [D06L 3/04](#), [D06L 4/50](#); measuring [G01](#); irradiation devices, gamma- or X-ray microscopes [G21K](#); in discharge tubes [H01J](#); apparatus for generating ions to be introduced into non-enclosed gases, e.g. into the atmosphere, [H01T 23/00](#); for carrying-off electrostatic charges [H05F 3/06](#))

Project: RP0304-F (H01F)**U H01F 41/00**

Apparatus or processes specially adapted for manufacturing or assembling magnets, inductances or transformers; Apparatus or processes specially adapted for manufacturing materials characterised by their magnetic properties

U H01F 41/02

- for manufacturing cores, coils, or magnets ([H01F 41/14](#) takes precedence; for dynamo-electric machines [H02K 15/00](#))

U H01F 41/04

- • for manufacturing coils {(coils for transformer or inductances [H01F 27/28](#))}

U H01F 41/06

- • • Coil winding

M H01F 41/071

- • • Winding coils of special form (winding conductors onto closed formers or cores [H01F 41/08](#))

WARNING

Group H01F 41/071 is impacted by reclassification of documents into group H01F 41/08.-

Groups H01F 41/071 and H01F 41/08 should be considered in order to perform a complete search.-

M H01F 41/08

- • • Winding conductors onto closed formers or cores, e.g. threading conductors through toroidal cores

WARNING

Group H01F 41/08 is incomplete pending reclassification of documents from group H01F 41/071.-

Groups H01F 41/071 and H01F 41/08 should be considered in order to perform a complete search.-

Project: N/A (H01G)**U H01G 9/00**

Electrolytic capacitors, rectifiers, detectors, switching devices, light-sensitive or temperature-sensitive devices; Processes of their manufacture

U H01G 9/20

- Light-sensitive devices

H01G 9/2054

- • {comprising a semiconductor electrode comprising AII-BVI compounds, e.g. CdTe, CdSe, ZnTe, ZnSe, with or without impurities, e.g. doping materials ([H01G 9/2027](#) takes precedence)}

Project: N/A (H01H)

- U H01H 3/00** **Mechanisms for operating contacts (snap-action arrangements [H01H 5/00](#); devices for introducing a predetermined time delay [H01H 7/00](#); {for tap changers [H01H 9/0027](#)}; thermal actuating or release means [H01H 37/02](#))**
- U H01H 3/22 • Power arrangements internal to the switch for operating the driving mechanism
- U H01H 3/30 • • using spring motor
- H01H 2003/3078 • • • {using an inertia element, e.g. a flywheel, to control the energy released by the spring}

Project: N/A (H01J)**U H01J 49/00** **Particle spectrometer or separator tubes**NOTE

In classifying particle separators, no distinction is made between spectrometry and spectrography, the difference being only in the manner of detection which in the first case is electrical and in the second case is by means of a photographic film.

- U H01J 49/44 • Energy spectrometers, e.g. alpha-, beta-spectrometers
- U H01J 49/46 • • Static spectrometers
- U H01J 49/48 • • • using electrostatic analysers, e.g. cylindrical sector, Wien filter
- H01J 49/486 • • • • {with plane mirrors, i.e. uniform field}

U H01J 2237/00 **Discharge tubes exposing object to beam, e.g. for analysis treatment, etching, imaging**NOTES

1. For features of general interest which may be found in other types of discharge tubes, an indexing code corresponding to general schemes [H01J 2201/00](#) - [H01J 2203/00](#) is given, e.g. for cathodes, vessels, cooling means or the like
2. Same rules apply for manufacturing procedures ([H01J 2209/00](#)), unless really specific to the tube concerned.
3. The codes in this main group are grouped according to the following principle: details common to gas or plasma discharge of the above mentioned tubes: [H01J 2237/00](#) - [H01J 2237/2487](#)
Imaging or analysing: [H01J 2237/25](#) - [H01J 2237/2857](#)
particle beam processing: [H01J 2237/30](#) - [H01J 2237/31798](#)
plasma processing: [H01J 2237/32](#) - [H01J 2237/339](#)

- U H01J 2237/26 • Electron or ion microscopes
- H01J 2237/2617 • • Comparison or superposition of transmission images; [MoiréMoiré](#)

Project: N/A (H01K)**U H01K 1/00** **Details**

- U H01K 1/18 • Mountings or supports for the incandescent body
- H01K 1/24 • • Mounts for lamps with connections at opposite ends, e.g. for tubular lamp

Project: RP0400 (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**1. This subclass covers:**

- electric solid state devices which are not covered by any other subclass and details thereof, and 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;
- photoresistors, magnetic field dependent resistors, field effect resistors, capacitors with potential-jump barrier, resistors with potential-jump barrier or surface barrier, incoherent light emitting diodes and thin-film or thick-film circuits;
- 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.

2. In this subclass, the following terms or expressions are used with the meaning indicated:

- "wafer" means a slice of semiconductor or crystalline substrate material, which can be modified by impurity diffusion (doping), ion implantation or epitaxy, and whose active surface can be processed into arrays of discrete components or integrated circuits;
- "solid state body" means 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. 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;
- "device" means an electric circuit element; where an electric circuit element is one of a plurality of elements formed in or on a common substrate it is referred to as a "component";

- "complete device" is a device in its fully assembled state which may or may not require further treatment, e.g. electroforming, before it is ready for use but which does not require the addition of further structural units;
- "parts" includes all structural units which are included in a complete device;
- "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;
- "assembly" of a device is the building up of the device from its component constructional units and includes the provision of fillings in containers.

3. In this subclass, both the process or apparatus for the manufacture or treatment of a device and the device itself are classified, whenever both of these are described sufficiently to be of interest.

4. Attention is drawn to Note (3) after the title of section C, which Note indicates to which version of the periodic table of chemical elements the IPC refers. In this subclass, the Periodic System used is the 8 group system indicated by Roman numerals in the Periodic Table thereunder.

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

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 22/00
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-H01L 29/365
H01L 29/96	covered by	H01L 29/68-H01L 29/945
H01L 51/30	covered by	H01L 51/0032
H01L 51/40	covered by	H01L 51/0001
H01L 51/46	covered by	H01L 51/0032
H01L 51/48	covered by	H01L 51/0001

H01L 51/54

covered by

[H01L 51/0032](#)

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](#) - [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 21/70

- Manufacture or treatment of devices consisting of a plurality of solid state components formed in or on a common substrate or of parts thereof; Manufacture of integrated circuit devices or of parts thereof ({multistep manufacturing processes of assemblies consisting of a plurality of individual semiconductor or other solid state devices [H01L 25/00](#) } , manufacture of assemblies consisting or preformed electrical components [H05K 3/00](#), [H05K 13/00](#))

M H01L 21/77

- • Manufacture or treatment of devices consisting of a plurality of solid state components or integrated circuits formed in, or on, a common substrate (*electrically programmable read-only memories or multistep manufacturing processes therefor [H01L 27/115](#)*)

NOTE

Integration processes for the manufacture of devices of the type classified in [H01L 27/14](#) - [H01L 27/32](#) are not classified in this group and its sub-groups. Instead, as they are peculiar to said devices, they are classified together with the devices Multistep processes for manufacturing memory structures in general using field effect technology are covered by [H01L 27/1052](#); Multistep processes for manufacturing dynamic random access memory structures are covered by [H01L 27/10844](#); Multistep processes for manufacturing static random access memory structures are covered by [H01L 27/11](#); Multistep processes for manufacturing read-only memory structures are covered by [H01L 27/112](#); Multistep processes for manufacturing electrically programmable read-only memory structures are covered by [H01L 27/115](#)

M H01L 27/00

Devices consisting of a plurality of semiconductor or other solid-state components formed in or on a common substrate (~~processes or apparatus specially adapted for the manufacture or treatment thereof or of parts thereof [H01L 21/70](#), [H01L 31/00](#) - [H01L 51/00](#); details thereof [H01L 23/00](#), [H01L 29/00](#) - [H01L 51/00](#); assemblies consisting of a plurality of individual solid state devices [H01L 25/00](#); assemblies of electrical components in general [H05K](#)~~)

NOTE

1. In this group, *with the exception of groups [H01L 27/115](#) - [H01L 27/11597](#), the last place priority rule is applied, i.e. at each hierarchical level*, in the absence of an indication to the contrary, classification is made in the last appropriate place.

2. *When classifying in this group, subject matter relating to electrically programmable read-only memories is classified in group [H01L 27/115](#), irrespective of the last place priority rule.*

U H01L 27/02

- including semiconductor components specially adapted for rectifying, oscillating, amplifying or switching and having at least one potential-jump barrier or surface barrier; including integrated passive circuit elements with at least one potential-jump barrier or surface barrier

- U H01L 27/0203 . . {Particular design considerations for integrated circuits}
- U H01L 27/0207 . . . {Geometrical layout of the components, e.g. computer aided design; custom LSI, semi-custom LSI, standard cell technique}
- M H01L 27/0211 {adapted for requirements of temperature ~~(cooling arrangements per se H01L 23/34)~~}
- U H01L 27/0214 . . . {for internal polarisation, e.g. I2L}
- U H01L 27/0218 {of field effect structures}
- M H01L 27/0222 {Charge pumping, substrate bias generation structures ~~(circuits G05F 3/205)~~}
- M H01L 27/0225 {Charge injection in static induction transistor logic structures, ~~i.e. [SITL-]]~~ ~~(circuits H03K 19/0912)~~}
- U H01L 27/0229 {of bipolar structures}
- M H01L 27/0233 {Integrated injection logic structures, ~~i.e. [I2L-]]~~ ~~(circuits H03K 19/091)~~}
- M H01L 27/0248 . . . {for electrical or thermal protection, e.g. electrostatic discharge [ESD] protection ~~(emergency protective circuit arrangements H02H; circuit arrangements for protecting electronic switches H03K 17/08; circuit arrangements for protecting logic circuits H03K 19/003)~~}
- U H01L 27/0251 {for MOS devices}
- M H01L 27/0255 {using diodes as protective elements ~~(diode connected field-effect transistors H01L 27/0266; diode connected bipolar transistors H01L 27/0259)~~}
- U H01L 27/04 . . the substrate being a semiconductor body
- U H01L 27/10 . . . including a plurality of individual components in a repetitive configuration
- U H01L 27/102 including bipolar components
- U H01L 27/1022 {including bipolar transistors}
- M H01L 27/1023 {Bipolar dynamic random access memory structures ~~(circuits G11C 11/24, G11C 11/34)~~}
- M H01L 27/1025 {Static bipolar memory cell structures ~~(circuits G11C 11/40)~~}
- U H01L 27/105 including field-effect components

NOTE

In this group and its subgroups classification is made in any appropriate place

- M H01L 27/108 Dynamic random access memory structures ~~(circuits G11C 11/24, G11C 11/34)~~

NOTE

In this group and its subgroups classification is made in any appropriate place

- M H01L 27/10802 {comprising floating-body transistors, e.g. floating-body cells ~~(floating-body transistors per se H01L 29/7841)~~}
- U H01L 27/10844 {Multistep manufacturing methods}
- U H01L 27/10847 {for structures comprising one transistor one-capacitor memory cells}
- M H01L 27/1085 {with at least one step of making the capacitor or connections thereto ~~(making a capacitor for integrated circuits H01L 28/40, H01L 29/66181)~~}
- M H01L 27/10873 {with at least one step of making the transistor ~~(making the transistor per se H01L 29/66409)~~}

M	H01L 27/11	• • • • • Static random access memory structures {and multistep manufacturing processes therefor (circuits G11C 11/40)}
U	H01L 27/112	• • • • • Read-only memory structures {[ROM] and multistep manufacturing processes therefor}
M	H01L 27/115	• • • • • Electrically programmable read-only memories {and multistep manufacturing processes therefor} ; <i>Multistep manufacturing processes therefor</i>
M	H01L 27/11502	• • • • • • {with ferroelectric memory capacitor <i>capacitors</i> }
M	H01L 27/11504	• • • • • • { Top <i>characterised by the top-view layout</i> }
M	H01L 27/11507	• • • • • • { Memory <i>characterised by the memory</i> core region}
M	H01L 27/11509	• • • • • • { Peripheral <i>characterised by the peripheral</i> circuit region}
M	H01L 27/11512	• • • • • • { Boundary <i>characterised by the boundary</i> region between the core and peripheral circuit region <i>regions</i> }
M	H01L 27/11514	• • • • • • { Three <i>characterised by the three</i> -dimensional arrangements, e.g. <i>with</i> cells on different height levels}
M	H01L 27/11517	• • • • • • {with floating gate}
M	H01L 27/11519	• • • • • • { Top <i>characterised by the top-view layout</i> }
M	H01L 27/11521	• • • • • • { Memory-core region <i>characterised by the memory</i> core region (three-dimensional arrangements H01L 27/11551)}
M	H01L 27/11524	• • • • • • • {with at least one cell select transistor <i>transistors</i> , e.g. NAND}
M	H01L 27/11526	• • • • • • • { Peripheral <i>characterised by the peripheral</i> circuit region}
M	H01L 27/11529	• • • • • • • {of memory regions comprising at least one cell select transistor <i>transistors</i> , e.g. NAND}
M	H01L 27/11531	• • • • • • • {Simultaneous fabrication <i>manufacturing</i> of periphery and memory cells}
M	H01L 27/11534	• • • • • • • {including only one type of peripheral transistor}
M	H01L 27/11536	• • • • • • • • { Control <i>with a control</i> gate layer <i>also being</i> used for as part of the peripheral transistor}
M	H01L 27/11539	• • • • • • • • { Inter-gate <i>with an inter-gate</i> dielectric layer <i>also being</i> used for as part of the peripheral transistor}
M	H01L 27/11541	• • • • • • • • { Floating <i>with a floating</i> -gate layer <i>also being</i> used for as part of the peripheral transistor}
M	H01L 27/11543	• • • • • • • • { Tunnel <i>with a tunnel</i> dielectric layer <i>also being</i> used for as part of the peripheral transistor}
M	H01L 27/11546	• • • • • • • • {including different types of peripheral transistors <i>transistor</i> }
M	H01L 27/11548	• • • • • • • { Boundary <i>characterised by the boundary</i> region between the core and peripheral circuit regions}
M	H01L 27/11551	• • • • • • • { Three <i>characterised by three</i> -dimensional arrangements, e.g. <i>with</i> cells on different height levels}
M	H01L 27/11553	• • • • • • • • {with source and drain on different levels, e.g. with sloping channel <i>channels</i> }
M	H01L 27/11556	• • • • • • • • {the channel <i>channels</i> comprising at least one vertical portion <i>portions</i> , e.g. U-shaped channel <i>channels</i> }
M	H01L 27/11558	• • • • • • • • {the control gate being a doped region, e.g. single-poly memory cells}
M	H01L 27/1156	• • • • • • • • {the floating gate being an electrode shared by a plurality of two or more components}
M	H01L 27/11563	• • • • • • • • {with charge- trapping gate insulator <i>insulators</i> , e.g. MNOS- or NROM}

- M H01L 27/11565 {~~Top~~*characterised by the top*-view layout}
- M H01L 27/11568 {~~Memory~~*characterised by the memory* core region (three-dimensional arrangements [H01L 27/11578](#))}
- M H01L 27/1157 {with ~~at least one~~ cell select ~~transistor~~*transistors*, e.g. NAND}
- M H01L 27/11573 {~~Peripheral~~*characterised by the peripheral* circuit region}
- M H01L 27/11575 {~~Boundary~~*characterised by the boundary* region between ~~the~~ core and peripheral circuit ~~region~~*regions*}
- M H01L 27/11578 {~~Three~~*characterised by three*-dimensional arrangements, e.g. ~~with~~ cells on different height levels}
- M H01L 27/1158 {with source and drain on different levels, e.g. with sloping ~~channel~~*channels*}
- M H01L 27/11582 {the ~~channel~~*channels* comprising ~~at least one~~ vertical ~~portion~~*portions*, e.g. U-shaped ~~channel~~*channels*}
- M H01L 27/11585 {with ~~the~~ gate ~~electrode~~*electrodes* comprising a layer ~~which is~~ used for its ferroelectric memory properties, e.g. ~~MFS~~ (metal-ferroelectric-semiconductor), ~~MFMS~~ (~~[MFS]~~ or metal-ferroelectric-metal-insulator-semiconductor) } ~~[MFMS]~~
- M H01L 27/11587 {~~Top~~*characterised by the top*-view layout}
- M H01L 27/1159 {~~Memory~~*characterised by the memory* core region}
- M H01L 27/11592 {~~Peripheral~~*characterised by the peripheral* circuit region}
- M H01L 27/11595 {~~Boundary~~*characterised by the boundary* region between core and peripheral circuit ~~region~~*regions*}
- M H01L 27/11597 {~~Three~~*characterised by three*-dimensional arrangements, e.g. cells on different height levels}
- U H01L 27/12 . . . the substrate being other than a semiconductor body, e.g. an insulating body
- U H01L 27/1214 . . . {comprising a plurality of TFTs formed on a non-semiconducting substrate, e.g. driving circuits for AMLCDs}
- WARNING
Group [H01L 27/1218](#) – [H01L 27/1296](#) are incomplete pending reclassification of documents from group [H01L 27/1214](#).
Groups [H01L 27/1218](#) – [H01L 27/1296](#) and [H01L 27/1214](#) should be considered in order to perform a complete search.
- U H01L 27/1259 {Multistep manufacturing methods}
- U H01L 27/127 {with a particular formation, treatment or patterning of the active layer specially adapted to the circuit arrangement}
- M H01L 27/1274 {using crystallisation of amorphous semiconductor or recrystallisation of crystalline semiconductor ~~(crystallisation per se H01L 21/02667)~~}
- M H01L 27/13 . . . combined with thin-film or thick-film passive components ~~((passive two-terminal components without a potential jump or surface barrier for integrated circuits, details thereof and multistep manufacturing processes therefor H01L 28/00))~~

Project: N/A (H01L)

- 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 31/08 · in which radiation controls flow of current through the device, e.g. photoresistors
- U H01L 31/10 · · characterised by at least one potential-jump barrier or surface barrier, e.g. phototransistors
- U H01L 31/101 · · · Devices sensitive to infra-red, visible or ultra-violet radiation
- U H01L 31/102 · · · · characterised by only one potential barrier or surface barrier
- H01L 31/107 · · · · · the potential barrier working in avalanche mode, e.g. avalanche photodiode
- 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 2924/013 · Alloys
- U H01L 2924/0132 · · Binary Alloys
- U H01L 2924/01322 · · · Eutectic Alloys, i.e. obtained by a liquid transforming into two solid phases
- H01L 2924/01323 · · · · Hypoeutectic alloys i.e. with compositions lying to the left of the eutectic point
- H01L 2924/01324 · · · · Hypereutectic alloys i.e. with compositions lying to the right of the eutectic point
- H01L 2924/055 · Chalcogenides other than oxygen i.e. sulfides i.e. sulfides, selenides and tellurides composed of metals from groups of the periodic table

Project: MP0336 (H01M)

- U H01M 8/00 Fuel cells; Manufacture thereof
- NOTE
Fuel cells are electrochemical generators wherein the reactants are supplied from outside
- M H01M 8/18 · Regenerative fuel cells, e.g. redox flow batteries or secondary fuel cells
- M H01M 8/20 · Indirect fuel cells, e.g. Redox fuel cells with redox couple being irreversible ([H01M 8/18](#) takes precedence)

Project: N/A (H01M)**U H01M 10/00****Secondary cells; Manufacture thereof**NOTE

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

- U H01M 10/60 • Heating or cooling; Temperature control
- U H01M 10/65 • • Means for temperature control structurally associated with the cells
- U H01M 10/655 • • • Solid structures for heat exchange or heat conduction
- H01M 10/6552 • • • • Closed pipes transferring heat by thermal conductivity or phase transition, ~~e.g. heat~~ ~~e.g.~~ ~~heat~~ pipes

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

- U H01S 5/06 • Arrangements for controlling the laser output parameters, e.g. by operating on the active medium (transmission systems employing light [H04B 10/00](#))
- U H01S 5/0607 • • {by varying physical parameters other than the potential of the electrodes, e.g. by an electric or magnetic field, mechanical deformation, pressure, light, temperature}
- H01S 5/0614 • • • {controlled by electric field, i.e. ~~whereby~~ whereby an additional electric field is used to tune the bandgap, e.g. using the Stark-effect}
- U H01S 5/30 • Structure or shape of the active region; Materials used for the active region
- U H01S 5/32 • • comprising PN junctions, e.g. hetero- or double- heterostructures ([H01S 5/34](#), [H01S 5/36](#) take precedence)
- H01S 5/323 • • • in $A_{III}B_V$ compounds, e.g. ~~alGaAs-laser~~ ~~{InP-based laser}~~
- U H01S 5/34 • • comprising quantum well, or superlattice structures, e.g. single quantum well lasers (SQW lasers), multiple quantum well lasers (MQW lasers), graded index separate confinement heterostructure lasers (GRINSCH lasers) ([H01S 5/36](#) takes precedence)
- H01S 5/341 • • • {Structures having reduced dimensionality, ~~e.g. quantum~~ ~~e.g.~~ ~~quantum~~ wires}

Project: N/A (H02K)**U H02K 2203/00****Specific aspects not provided for in the other groups of this subclass relating to the windings**

- H02K 2203/15 • Machines characterised by cable windings, e.g. ~~high-voltage~~ ~~cables~~, ribbon cables

Project: N/A (H02M)**U H02M 1/00****Details of apparatus for conversion**

- U H02M 2001/0067 • {Converter structures employing plural converter units, other than for parallel operation of the units on a single load}
- H02M 2001/008 • • {Plural converter units for generating at least two independent, non-parallel outputs, e.g. ~~systems~~ ~~with plural point of load switching regulators~~}

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:

H04L 12/20	covered by	H04L 29/00
H04L 25/04	covered by	H04L 25/03
H04L 25/17	covered by	H03H
H04L 25/18	covered by	H04L 25/027
H04L 25/28	covered by	H04L 25/0268
H04L 25/30	covered by	H04L 25/061
H04L 25/32	covered by	H04L 25/49
H04L 25/34	covered by	H04L 25/4917
H04L 25/36 H04L25/36	covered by	
H04L 25/48	covered by	H04L 25/49
H04L 25/50 H04L25/50	covered by	H04L 25/05
H04L 25/52	covered by	H04L 25/20
H04L 25/54	covered by	H04L 25/20
H04L 25/56	covered by	H04L 25/202
H04L 25/58	covered by	H04L 25/20
H04L 25/60	covered by	H04L 25/207
H04L 25/62	covered by	H04L 25/205
H04L 25/64	covered by	H04L 25/245
H04L 25/66	covered by	H04L 25/247

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](#))}

H04N 1/00885

• {Power supply means, e.g. arrangements for the control of power supply to the apparatus or components thereof}

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](#) - [H04N 5/378](#) are based on IPC2012.01

- U H04N 5/14
 - Picture signal circuitry for video frequency region ([H04N 5/222](#) takes precedence)
- H04N 5/21
 - • Circuitry for suppressing or minimising disturbance, e.g. **moirè****moiré**, halo, {even if the automatic gain control is involved}(suppression of noise in television recording [H04N 5/911](#))

Project: RP0409 (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 5/2224
 - • {related to virtual studio applications}
- H04N 5/2226
 - • • {Determination of depth image, e.g. for foreground/background separation (determining depth by image analysis in general [G06T 7/0051](#)[G06T 7/50](#); segmentation by image analysis in general [G06T 7/0079](#)[G06T 7/10](#))}

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](#))}

- U H04N 13/02
 - Picture signal generators
- U H04N 13/0203
 - • {using a stereoscopic image camera (endoscopes with stereoscopic vision [A61B 1/00193](#); stereoscopic photography [G03B 35/00](#))}
- H04N 13/0246
 - • • {Calibration aspects relating to the control of a stereoscopic camera (processing of captured images to determine and compensate stereo camera misalignment, e.g. stereo camera calibration [G06T 7/002](#)[G06T 7/85](#))}
- H04N 13/0271
 - • {wherein the generated image signal comprises a depth map or a disparity map (depth map generation as such [G06T 7/0075](#)[G06T 7/593](#))}

Project: N/A (H05H)

- U H05H 1/00 Generating plasma; Handling plasma**
- U H05H 1/24
 - Generating plasma {(gas-filled discharge reactors [H01J 37/32](#); nuclear fusion reactors [G21B 1/00](#); ohmic heating [H05H 1/20](#); injection heating [H05H 1/22](#))}
- U H05H 1/46
 - • using applied electromagnetic fields, e.g. high frequency or microwave energy ([H05H 1/26](#) takes precedence)
- H05H 2001/469
 - • • {Flow through, i.e. the plasma fluid flowing in a non-dielectric vessel}

Project: N/A (H05K)

- U H05K 2203/00 Indexing scheme relating to apparatus or processes for manufacturing printed circuits covered by [H05K 3/00](#)**
- U H05K 2203/03
 - Metal processing
- H05K 2203/0361
 - • Stripping a part of an upper metal layer to expose a lower metal layer, e.g. by etching or using a laser

Project: N/A (Y10S)

- U Y10S 148/00 Metal treatment**

	Y10S 148/088	• J-Fet, i.e. junction <i>i.e. junction</i> field effect transistor
U	Y10S 156/00	Adhesive bonding and miscellaneous chemical manufacture
U	Y10S 156/918	• Delaminating processes adapted for specified product, e.g. delaminating medical specimen slide
U	Y10S 156/919	• • Delaminating in preparation for post processing recycling step
U	Y10S 156/927	• • • Delaminating vehicle component, e.g. brake pad
	Y10S 156/928	• • • Delaminating tire, e.g. tread from carcass
U	Y10S 165/00	Heat exchange
U	Y10S 165/454	• having side-by-side conduits structure or conduit section
U	Y10S 165/471	• • Plural parallel conduits joined by manifold
	Y10S 165/49	• • • Noncircular tube cross section, e.g. oval <i>e.g. oval</i> , triangular
U	Y10S 514/00	Drug, bio-affecting and body treating compositions
	Y10S 514/01	• Ru 486, i.e. Ru <i>i.e. Ru</i> 38486, Ru 486-6, mifepristone, mifestone, mifegyne, [11b-[4-[n, n-dimethylamino] phenyl]-17a-[prop-1-ynyl]- 4,9-estradiene-17b-ol-3-one, [11b,17b]11-[4-[dimethylamino]-phenyl]-17-hydroxy-17-[1-propynyl] estra-4,9-dien-3-one]
U	Y10S 525/00	Synthetic resins or natural rubbers -- part of the class 520 series
	Y10S 525/937	• Utility as body contact e.g. implant <i>e.g. implant</i> , contact lens or I.U.D.